

Blue papers

Reference briefs

MJos Predictive Model

The first manifestation of the Bangel Language

MJ Physics Engineering

Owned and operated by Michael Bangel

Clearwater, Florida

Recovered collection / terminology edition

300 recovered source pages

Prepared for review. Not published.

This source-faithful terminology edition updates the language name and publication identity while retaining mathematical expressions, source IDs, historical evidence and page graphics. It is not a fresh execution of the historical tests. Read the companion searchable library for current project sequencing and unresolved semantic relationships.

White papers are excluded. References to White paper identities remain historical citations. Original source hashes refer to the prior originals; revised output hashes are recorded separately.

Gold and Indigo: the original volumes were not recovered. Any new reconstruction is separately identified and must not be counted as those missing volumes.

R1 transition

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-001 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-001: R0 -> R1. F-001 means R1 is the unidentified transitional phase.

ANALYSIS / LIFECYCLE

Result dimensions: state. Primary manifestations: Bangel , JO, JP. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-001.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-001); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-001.

R2 transition

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-002 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-002: R1 --validated--> R2. F-002 means R2 is the immutable living static representation.

ANALYSIS / LIFECYCLE

Result dimensions: state. Primary manifestations: JO, JP, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-002.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-002); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-002.

Unknown invariant

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-003 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-003: UNKNOWN != 0. F-003 means Unknown may not coerce to zero, pass, harmless, or permission.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: Bangel , JO, WATER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-003.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-003); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-003.

Mass inflection

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-004 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-004: $m_{\text{floor}} = 23 \text{ mg}$. F-004 means Pre-observational model floor, not a universal minimum or product mass.

ANALYSIS / LIFECYCLE

Result dimensions: mass. Primary manifestations: EVE, JO, JP, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-004.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-004); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-004.

Noise smoothing

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-005 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-005: $n_bar[t] = 0.9*n_bar[t-1] + 0.1*n[t]$. F-005 means Drip-level smoothing.

ANALYSIS / LIFECYCLE

Result dimensions: dimensionless. Primary manifestations: JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-005.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-005); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-005.

Trend estimator

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-006 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-006: $n_dot[t] = (2/3)*n_dot[t-1] + (1/3)*(n_bar[t]-n_bar[t-1])/dt$. F-006 means One-third trend update.

ANALYSIS / LIFECYCLE

Result dimensions: 1/time. Primary manifestations: JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-006.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-006); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-006.

Anti-spike gate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-007 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-007: support $\geq$ 3 of 5 AND 3 qualified windows. F-007 means Single spike cannot trigger full reweighting.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: ANGELS, JO, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-007.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-007); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-007.

Prediction gain

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-008 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-008: $g_i = 0.1 \cdot (2/3)^{(i-1)}$. F-008 means Prediction influence decays across the nine-node path.

ANALYSIS / LIFECYCLE

Result dimensions: dimensionless. Primary manifestations: JO, JP, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-008.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-008); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-008.

Covariance update

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-009 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-009: $\text{Sigma_next} = 0.9 \cdot \text{Sigma_prev} + 0.1 \cdot e^T$. F-009 means Positive-semidefinite sequential covariance.

ANALYSIS / LIFECYCLE

Result dimensions: normalized^2 . Primary manifestations: JO, JP, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-009.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-009); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-009.

Shadow depth

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-010 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-010: $H = \sqrt{\lambda_{\max}(\Sigma)}$. F-010 means Uncertainty depth.

ANALYSIS / LIFECYCLE

Result dimensions: normalized. Primary manifestations: EVE, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-010.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-010); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-010.

Shadow growth rate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-011 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-011: $v_{shadow} = (H_{next} - H_{prev}) / dt$. F-011 means Rate of uncertainty expansion or resolution.

ANALYSIS / LIFECYCLE

Result dimensions: normalized/time. Primary manifestations: JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-011.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-011); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-011.

Front-end allocation / Front-end reserve

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-012, F-013 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-012: $a_0 = 48383829/100000000$; F-013: $r_0 = 51616171/100000000$. F-012 means Exact initial N1 logical allocation. F-013 means Exact logical reserve.

ANALYSIS / LIFECYCLE

Result dimensions: ratio. Primary manifestations: Bangel , JO, JP, M3. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-012, F-013.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-012, F-013); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-012.

Bounded allocation update

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-014 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-014: $w_{next} = projection((2/3)w + (1/3)w_{target})$. F-014 means Nonnegative, sum-to-one, per-step change ≤ 0.1 .

ANALYSIS / LIFECYCLE

Result dimensions: ratio vector. Primary manifestations: JO, JP, M3. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-014.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-014); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-013.

Request memory

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-015 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-015: $M_{request} = \lambda_{hat} * bytes_{per_request} * latency_{hat}$. F-015 means Predicted request memory.

ANALYSIS / LIFECYCLE

Result dimensions: bytes. Primary manifestations: JO, M3, MJOS. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-015.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-015); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-014.

Memory preallocation

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-016 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-016: $M_{pre} = M_{request} + M_{sync} + M_{residual} + M_{evidence} + M_{headroom}$. F-016 means Preallocate before reserve exhaustion.

ANALYSIS / LIFECYCLE

Result dimensions: bytes. Primary manifestations: JO, M3, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-016.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-016); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-015.

Hard flush

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-017 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-017: QUIESCE -> SEAL -> CHECKPOINT -> DETACH -> RECLAIM. F-017 means No silent deletion or uncleared reuse.

ANALYSIS / LIFECYCLE

Result dimensions: state sequence. Primary manifestations: JO, M3, MJOS. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-017.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-017); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-016.

Charge balance

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-018 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-018: $dQ/dt = I_{\text{intake}} - I_{\text{leak}} - I_{\text{release}}$. F-018 means Static-intake charge accounting.

ANALYSIS / LIFECYCLE

Result dimensions: charge/time. Primary manifestations: EVE, JO, JP, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-018.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-018); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-017.

Capacitor energy

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-019 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-019: $E = 0.5 \cdot C \cdot V^2$. F-019 means Valid only for evidenced constant capacitance.

ANALYSIS / LIFECYCLE

Result dimensions: energy. Primary manifestations: JO, JP, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-019.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-019); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-018.

General stored energy

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-020 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-020: $E = \text{integral } V(q)dq$. F-020 means General charge-storage energy.

ANALYSIS / LIFECYCLE

Result dimensions: energy. Primary manifestations: JP, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-020.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-020); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-019.

Energy balance

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-021 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-021: $r_E = E_{in} - \Delta E_{storage} - E_{delivered} - E_{containment} - E_{loss}$. F-021 means Energy residual must be inside uncertainty.

ANALYSIS / LIFECYCLE

Result dimensions: energy. Primary manifestations: JO, MERMAID, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-021.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-021); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-020.

Mass balance / EVE screen balance

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-022, F-023 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-022: $r_M = M_{initial} + M_{inputs} - M_{final} - M_{outputs}$; F-023: $M_{screen_in} = M_{captured} + M_{passed} + M_{retained} + r_{screen}$. F-022 means Physical mass conservation. F-023 means Screen capture never assumes perfect retention.

ANALYSIS / LIFECYCLE

Result dimensions: mass. Primary manifestations: EVE, JO, MERMAID, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-022, F-023.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-022, F-023); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-021.

EVE evaporation

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-024 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-024: $M_{\text{evap}} = \text{integral integral } J_m \text{ dA dt}$. F-024 means Evaporative mass from flux across area and time.

ANALYSIS / LIFECYCLE

Result dimensions: mass. Primary manifestations: EVE, JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-024.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-024); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-022.

Upward force

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-025 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-025: $F_z = qE_z + F_b - mg - D_z - F_{\text{contact}} - F_{\text{adhesion}}$. F-025 means Upward motion requires positive conservative lower bound.

ANALYSIS / LIFECYCLE

Result dimensions: force. Primary manifestations: BELLE, EVE, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-025.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-025); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-023.

Coordinate mapping

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-026 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-026: $p_P(x,y,z)=o_P+x*a_P+y*b_P+z*c_P$. F-026 means Normalized topology to profile physical coordinates.

ANALYSIS / LIFECYCLE

Result dimensions: length vector. Primary manifestations: BELLE, JO, JP, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-026.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-026); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-024.

Sister physical umbrella count

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-027 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-027: $N_U = \max_k \text{ceil}(E_k / ((1 - h_k) * C_{Uk}))$. F-027 means Canonical pre-Pearl physical containment count; requires measured profile-specific capacity and headroom.

ANALYSIS / LIFECYCLE

Result dimensions: count. Primary manifestations: JO, M3, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-027.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-027); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-025.

Byte balance

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-028 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-028: $r_B = B_{alloc} - B_{active} - B_{released} - B_{retained} - B_{exported} - B_{compacted}$. F-028 means Discrete memory reconciliation requires zero residual unless transformed.

ANALYSIS / LIFECYCLE

Result dimensions: bytes. Primary manifestations: JO, M3, MERMAID. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-028.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-028); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-026.

Residual consequence

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-029 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-029: $C_B = \int B_residual(t)dt$. F-029 means Time-weighted residual memory consequence.

ANALYSIS / LIFECYCLE

Result dimensions: byte-seconds. Primary manifestations: JO, M3, MERMAID. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-029.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-029); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-027.

Protected liquidity

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-030 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-030: $L_{\text{protected}_H} = O_{\text{near}_H} + R_{\text{emergency}_H} + R_{\text{tax}_H} + R_{\text{fees}_H} + U_{\text{cash}_H}$. F-030 means Liquidity first.

ANALYSIS / LIFECYCLE

Result dimensions: currency. Primary manifestations: JO, MERMAID, MK, SHIVA. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-030.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-030); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-028.

Investable surplus

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-031 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-031: $S_{investable_L} = \max(0, L_{available_L} - L_{protected_H})$. F-031 means Only surplus may enter risk analysis.

ANALYSIS / LIFECYCLE

Result dimensions: currency. Primary manifestations: JO, MERMAID, SHIVA. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-031.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-031); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-029.

Risk-capital ceiling

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-032 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-032: $A_risk_max = \min(S_investable_L, L_risk, L_product, L_regulatory, L_custody, L_concentration)$. F-032 means Hard minimum across constraints.

ANALYSIS / LIFECYCLE

Result dimensions: currency. Primary manifestations: MERMAID, MJ, MK, SHIVA. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-032.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-032); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-030.

Portfolio concentration

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-033 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-033: $C_i = \text{abs}(V_i_H)/V_{\text{portfolio}_L}$. F-033 means Asset concentration.

ANALYSIS / LIFECYCLE

Result dimensions: ratio. Primary manifestations: JO, MERMAID, SHIVA. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-033.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-033); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-031.

Portfolio variance

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-034 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-034: $\sigma_p^2 = w^T \Sigma w$. F-034 means Portfolio variance with evidenced covariance.

ANALYSIS / LIFECYCLE

Result dimensions: return^2 . Primary manifestations: MERMAID, MK, SHIVA. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-034.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-034); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-032.

Capital friction

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-035 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-035: $F_{\text{capital_H}} = \text{fees} + \text{spread} + \text{slippage} + \text{tax} + \text{custody} + \text{compliance} + \text{latency}$. F-035 means Typed transactional friction.

ANALYSIS / LIFECYCLE

Result dimensions: currency. Primary manifestations: MERMAID, MK, SHIVA. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-035.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-035); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-033.

Opportunity lower bound

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-036 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-036: $O_L = Return_L - F_{capital_H} - RiskPenalty_H - LiquidityPenalty_H - RegulatoryUncertainty_H$. F-036 means Conservative opportunity result.

ANALYSIS / LIFECYCLE

Result dimensions: currency. Primary manifestations: MERMAID, MJ, MK, SHIVA. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-036.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-036); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-034.

Abundance objective

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-037 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-037: $A = \sum(\alpha_i * P_i) - \sum(\beta_j * N_j)$. F-037 means Only valid with precommitted weights and compatible scales.

ANALYSIS / LIFECYCLE

Result dimensions: declared score. Primary manifestations: JO, MJ, MK, SHIVA. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-037.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-037); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-035.

SHIVAS eligible value

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-038 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-038: $V_{eligible_L} = \max(0, V_{verified_L-L_known_H-U_valuation_H})$. F-038 means Internal valuation lower bound.

ANALYSIS / LIFECYCLE

Result dimensions: currency. Primary manifestations: JO, MERMAID, SHIVA. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-038.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-038); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-036.

SHIVAS ceiling

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-039 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-039: $N_{max} = \text{floor}(V_{eligible_L/B_unit_H})$. F-039 means Only when backing, rights, classification, and evidence are known.

ANALYSIS / LIFECYCLE

Result dimensions: count. Primary manifestations: MERMAID, MJ, SHIVA. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-039.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-039); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-037.

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-040 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-040: $x[t+1]=F(x[t],u[t],\theta,e[t])+w[t]$; $y[t]=H(x[t])+v[t]$. F-040 means General physics state and observation representation.

ANALYSIS / LIFECYCLE

Result dimensions: typed state. Primary manifestations: JO, JP, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-040.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-040); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-038.

Dimensional integrity

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-041 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-041: $\dim(\text{LHS})=\dim(\text{RHS})$. F-041 means Every physical equality must be dimensionally valid.

ANALYSIS / LIFECYCLE

Result dimensions: dimension equality. Primary manifestations: JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-041.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-041); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-039.

Conservation residual

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-042 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-042: $r_q = q_{in} - q_{out} - \Delta q - q_{loss}$. F-042 means Pass only when $|r_q| \leq U_q$.

ANALYSIS / LIFECYCLE

Result dimensions: quantity. Primary manifestations: EVE, JO, MERMAID, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-042.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-042); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-040.

Pearl simulation ellipsoid volume

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-043 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-043: $V_P = (4/3) \cdot \pi \cdot a \cdot b \cdot c$. F-043 means Hypothetical pearl-shaped simulation geometry; no physical container or dimension claim.

ANALYSIS / LIFECYCLE

Result dimensions: volume. Primary manifestations: EVE, JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-043.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-043); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-041.

Pearl simulation surface-area approximation

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-044 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-044: $A_P \sim 4\pi((a^p b^p + a^p c^p + b^p c^p)/3)^{(1/p)}$, $p=1.6075$. F-044 means Hypothetical simulation geometry approximation; no physical wall or surface claim.

ANALYSIS / LIFECYCLE

Result dimensions: area. Primary manifestations: BELLE, JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-044.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-044); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-042.

Pearl simulation exposure ratio

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-045 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-045: $\chi_P = A_P / V_P$. F-045 means Simulation comparison metric only; not physical breach or exposure evidence.

ANALYSIS / LIFECYCLE

Result dimensions: 1/length. Primary manifestations: BELLE, EVE, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-045.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-045); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-043.

Pearl simulation capacity slack

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-046 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-046: $S_{Pk}=(1-h_{Pk})\cdot C_{Pk-L_{Pk}}$. F-046 means Remaining typed simulation/information capacity after declared headroom.

ANALYSIS / LIFECYCLE

Result dimensions: quantity_k. Primary manifestations: EVE, JO, M3, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-046.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-046); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-044.

Pearl simulation saturation ratio

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-047 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-047: $\beta_P = \max_k(L_{Pk}/((1-h_{Pk}) \cdot C_{Pk}))$. F-047 means Simulation saturation condition only; not physical breach resistance.

ANALYSIS / LIFECYCLE

Result dimensions: ratio. Primary manifestations: ANGELS, BELLATRIX, JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-047.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-047); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-045.

Pearl simulation object count

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-048 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-048: $N_P = \max_k \lceil E_k / ((1 - h_{Pk}) * C_{Pk}) \rceil$. F-048 means Number of hypothetical simulation objects needed for declared information/resource dimensions.

ANALYSIS / LIFECYCLE

Result dimensions: count. Primary manifestations: EVE, JO, M3, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-048.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-048); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-046.

Pearl simulation accounting balance

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-049 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-049: $r_{Pk}=q_{in}-q_{captured}-q_{transferred}-q_{retained}-q_{escaped}-\Delta q_{stored}$. F-049 means Simulation/accounting conservation across retained, transferred, escaped-observation, and stored information.

ANALYSIS / LIFECYCLE

Result dimensions: quantity_k. Primary manifestations: EVE, JO, MERMAID, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-049.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-049); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-047.

Pearl simulated transfer opportunity

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-050 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-050: $T_{ij,k} = \min([S_{jk}]_+, [Q_{ik} - Q_{reserve_ik}]_+, C_{route_k})$. F-050 means Simulated transfer opportunity bounded by declared logical capacities; no physical transfer.

ANALYSIS / LIFECYCLE

Result dimensions: quantity_k. Primary manifestations: EVE, JO, M3, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-050.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-050); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-048.

Pearl simulated regeneration vector

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-051 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-051: $G_P=[G_{mass},G_{energy},G_{bytes},G_{time},G_{capital}]$. F-051 means Hypothetical opportunity vector; creates no physical or capital value.

ANALYSIS / LIFECYCLE

Result dimensions: typed vector. Primary manifestations: EVE, JO, MERMAID, MK, SHIVA. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-051.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-051); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-049.

Pearl acoustic simulation wavelength

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-052 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-052: $\lambda_{ac} = c_{medium} / f_{control}$. F-052 means Acoustic simulation variable under declared medium assumptions; no cohesion claim.

ANALYSIS / LIFECYCLE

Result dimensions: length. Primary manifestations: EVE, JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-052.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-052); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-050.

Pearl acoustic simulation intensity

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-053 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-053: $I_{ac}=p_{rms}^2/(\rho_{medium}*c_{medium})$. F-053 means Reference simulation intensity only; no physical actuation claim.

ANALYSIS / LIFECYCLE

Result dimensions: power/area. Primary manifestations: EVE, JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-053.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-053); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-051.

Pearl acoustic simulation energy

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-054 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-054: $E_{ac} = \int (I_{ac} \cdot A_{effective}) dt$. F-054 means Hypothetical energy accounting for a future separately permitted experiment.

ANALYSIS / LIFECYCLE

Result dimensions: energy. Primary manifestations: EVE, JO, MERMAID, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-054.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-054); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-052.

Pearl acoustic simulation observability gate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-055 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-055: $f_{\text{sample}} \geq 2 \cdot \gamma \cdot f_{\text{control}}$ AND f_{control} in calibrated_band AND $\text{SNR}_f \geq \text{SNR}_{\text{min}}$. F-055 means Simulation input must be measurable to be accounted for; observability is not actuation.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: ANGELS, JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-055.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-055); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-053.

Pearl acoustic simulation signal-to-noise

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-056 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-056: $SNR_f = P_{signal}(f) / P_{noise}(f)$. F-056 means Simulation signal-to-noise ratio; advisory and non-authorizing.

ANALYSIS / LIFECYCLE

Result dimensions: ratio. Primary manifestations: EVE, JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-056.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-056); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-054.

Pearl acoustic simulation transfer function

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-057 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-057: $H_P(f)=Y_P(f)/U_P(f)$. F-057 means Hypothetical or measured-later response mapping; no physical Pearl article exists.

ANALYSIS / LIFECYCLE

Result dimensions: output/input. Primary manifestations: EVE, JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-057.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-057); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-055.

Pearl acoustic simulation setpoint / Bounded Pearl acoustic simulation adjustment

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-058, F-059 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-058: $f^* = \operatorname{argmin}_{\{f \text{ in } F_{\text{safe}}\}} (J_{\text{breach}} + \lambda E_{\text{ac}} + \lambda T_{\text{transfer}})$; F-059: $f_{\text{next}} = \operatorname{clip}((2/3)f + (1/3)f_{\text{target}}, f_{\text{df_max}}, f_{\text{df_max}}, f_{\text{min}}, f_{\text{max}})$. F-058 means Simulation candidate only; no physical control setpoint. F-059 means One-third-damped simulation update only.

ANALYSIS / LIFECYCLE

Result dimensions: frequency. Primary manifestations: BELLE, JO, M3, MJ, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-058, F-059.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-058, F-059); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-056.

Pearl simulation registry reconciliation

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-060 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-060: $r_registry = N_allocated + N_received - N_transferred - N_closed - N_active$. F-060 means Registry count reconciliation for simulation records, not physical containers.

ANALYSIS / LIFECYCLE

Result dimensions: count. Primary manifestations: JO, M3, MERMAID, SHIVA. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-060.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-060); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-057.

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-061 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-061: C_ij=<value,unit,uncertainty,formula,revision,lineage,authority,evidence>. F-061 means Every cell is a governed measurement object, not an untyped mutable value.

ANALYSIS / LIFECYCLE

Result dimensions: typed object. Primary manifestations: Bangel , JO, JP, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-061.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-061); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-058.

Affected dependency closure

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-062 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-062: $A(U)=Reachable_G(U)$. F-062 means Only cells reachable from changed cells are eligible for incremental recomputation.

ANALYSIS / LIFECYCLE

Result dimensions: cell set. Primary manifestations: JO, JP, M3. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-062.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-062); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-059.

Incremental recompute cost

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-063 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-063: $C_{recalc} = \sum_{v \in A} c_v + \sum_{e \in E(A)} t_e$. F-063 means Measured compute and transfer work for an affected dependency closure.

ANALYSIS / LIFECYCLE

Result dimensions: work units. Primary manifestations: JO, MERMAID, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-063.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-063); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-060.

Concurrent edit arrival

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-064 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-064: $\lambda_{total} = N_{users} * \lambda_{user}$. F-064 means Aggregate update arrival rate from measured concurrent-user activity.

ANALYSIS / LIFECYCLE

Result dimensions: operations/time. Primary manifestations: JO, M3, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-064.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-064); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-061.

Spreadsheet service utilization

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-065 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-065: $\rho = \lambda_{total} / (W \cdot \mu_{worker})$. F-065 means Capacity utilization for W deterministic workers.

ANALYSIS / LIFECYCLE

Result dimensions: ratio. Primary manifestations: JO, M3, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-065.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-065); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-062.

Spreadsheet worker requirement

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-066 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-066: $W_{min} = \text{ceil}(\lambda_{total} / (\rho_{max} * \mu_{worker}))$. F-066 means Minimum worker count for a precommitted utilization ceiling.

ANALYSIS / LIFECYCLE

Result dimensions: count. Primary manifestations: JO, M3, MJOS. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-066.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-066); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-063.

Recalculation latency

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-067 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-067: $T_{recalc} = T_{parse} + T_{dependency} + \max_p(T_{partition}, p) + T_{commit}$. F-067 means End-to-end recalculation latency across logical Pearl simulation partitions.

ANALYSIS / LIFECYCLE

Result dimensions: time. Primary manifestations: JO, M3, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-067.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-067); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-064.

Spreadsheet data cost

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-068 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-068: $C_{data} = B_{store} * c_{store} + B_{transfer} * c_{transfer} + t_{cpu} * c_{cpu}$. F-068 means Storage, transfer, and compute cost remain separately evidenced before aggregation.

ANALYSIS / LIFECYCLE

Result dimensions: cost unit. Primary manifestations: JO, MERMAID, MK, SHIVA. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-068.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-068); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-065.

Pearl simulation partition objective

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-069 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-069: $J_{\text{partition}} = \alpha \cdot \max_p(L_p) + \beta \cdot \text{sum_cut}(w_e) + \gamma \cdot R_{\text{breach}} + \delta \cdot R_{\text{stale}}$. F-069 means Logical partition objective with precommitted weights; breach term is simulation risk, not physical containment.

ANALYSIS / LIFECYCLE

Result dimensions: declared score. Primary manifestations: JO, JP, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-069.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-069); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-066.

Sheet revision root

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-070 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-070: $H_{rev} = \text{SHA256}(\text{parent_root} || \text{canonical_deltas} || \text{policy_epoch})$. F-070 means Every committed change creates immutable content-addressed lineage.

ANALYSIS / LIFECYCLE

Result dimensions: digest. Primary manifestations: Bangel, JO, JP, MERMAID. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-070.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-070); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-067.

Audit-particle completeness

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-071 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-071: AuditPass=AND(required_fields_present,receipts_valid). F-071 means A critical spreadsheet command fails closed when its audit particle is incomplete.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: ANGELS, BELLATRIX, JO, MERMAID. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-071.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-071); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-068.

Iterative recalculation stability

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-072 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-072: $\text{spectral_radius}(J_F) < 1$. F-072 means Declared iterative formulas require an evidenced locally stable fixed-point regime.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: JO, JP, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-072.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-072); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-069.

Revision conflict gate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-073 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-073: base_revision=head_revision OR valid_merge_receipt. F-073 means Stale writes cannot silently overwrite a newer revision.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: ANGELS, Bangel, JO. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-073.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-073); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-070.

Freshness age

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-074 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-074: Age=now-observed_at. F-074 means Age of a source observation or derived cell.

ANALYSIS / LIFECYCLE

Result dimensions: time. Primary manifestations: JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-074.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-074); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-071.

Staleness gate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-075 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-075: $Age \leq freshness_limit$. F-075 means A cell is current only inside its declared freshness policy.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: ANGELS, JO, MERMAID. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-075.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-075); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-072.

Data-performance correlation

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-076 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-076: $r_{xy} = \text{Cov}(X,Y) / (\sigma_x \sigma_y)$. F-076 means Descriptive correlation between data characteristics and performance; not a causal claim.

ANALYSIS / LIFECYCLE

Result dimensions: ratio. Primary manifestations: JO, MERMAID, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-076.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-076); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-073.

Silo unification gate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-077 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-077: UnifiedMetric=SameMeaning AND SameUnit AND SamePeriod AND SameAuthority AND SameLineage. F-077 means Departmental sources unify only when semantic, unit, period, authority, and lineage conditions agree.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: ELSA, JO, JP, MERMAID. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-077.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-077); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-074.

Formula verification residual

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-078 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-078: $r_{\text{formula}} = y_{\text{reported}} - y_{\text{recomputed}}$. F-078 means Silent formula corruption is detected by independent deterministic recomputation.

ANALYSIS / LIFECYCLE

Result dimensions: output unit. Primary manifestations: ANGELS, JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-078.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-078); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-075.

Operational intake completeness

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-079 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-079: IntakePass=process_defined AND users_known AND workload_known AND SLA_known AND authority_known. F-079 means Scaling work begins only after the process, concurrency, workload, service target, and authority are explicit.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: Bangel , ELSA, JO, JP, MJ. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-079.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-079); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-076.

Spreadsheet capacity gate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-080 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-080: $\lambda_{total} \leq \rho_{max} \cdot \sum_p(\mu_p)$ AND $memory_required \leq memory_available$ AND $cross_partition_edges \leq cut_limit$. F-080 means Admission requires throughput, memory, and partition-boundary capacity to pass together.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: JO, M3, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-080.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-080); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-077.

First-noise rectangle height

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-081 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-081: $H_R=h_{noise,1}$. F-081 means Rectangle maximum height is the first validated noise-detection plane.

ANALYSIS / LIFECYCLE

Result dimensions: length. Primary manifestations: JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-081.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-081); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-078.

Reference gas density

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-082 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-082: $\rho_g = P \cdot M / (Z \cdot R \cdot T)$. F-082 means Actual gas density depends on measured pressure, temperature, molar mass, and compressibility.

ANALYSIS / LIFECYCLE

Result dimensions: mass/volume. Primary manifestations: JO, JP, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-082.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-082); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-079.

24 mg reference volume

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-083 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-083: $V_{24}=m_{24}/\rho_{ref}$. F-083 means 24 mg defines a reference gas volume under a declared state and does not replace the 23 mg floor.

ANALYSIS / LIFECYCLE

Result dimensions: volume. Primary manifestations: JO, JP, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-083.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-083); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-080.

Rectangle depth

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-084 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-084: $D_R = V_{24} / (W_R * H_R)$. F-084 means Reference depth adapts to measured height and declared width.

ANALYSIS / LIFECYCLE

Result dimensions: length. Primary manifestations: JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-084.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-084); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-081.

Cone height ratio / Cone top-width ratio

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-085, F-086 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-085: $H_C = k_H \cdot H_R$; $k_{H,std} = 2$; F-086: $W_T = k_W \cdot W_B$; $k_{W,std} = 2$. F-085 means Standard cone height is twice rectangle height. F-086 means Standard top characteristic width is twice bottom width.

ANALYSIS / LIFECYCLE

Result dimensions: length. Primary manifestations: JO, JP, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-085, F-086.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-085, F-086); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-082.

Cone area by height

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-087 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-087: $A(z)=A_B(1+(k_W-1)*z/H_C)^2$. F-087 means Similar-section conical expansion area.

ANALYSIS / LIFECYCLE

Result dimensions: area. Primary manifestations: JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-087.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-087); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-083.

Cone partial volume

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-088 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-088: $V_C(z)=A_B(z+(k_W-1)z^2/H_C+(k_W-1)^2z^3/(3H_C^2))$. F-088 means Volume up to observed gas height.

ANALYSIS / LIFECYCLE

Result dimensions: volume. Primary manifestations: JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-088.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-088); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-084.

Full conical-frustum volume

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-089 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-089: $V_C = H_C/3 \cdot (A_B + \sqrt{A_B \cdot A_T} + A_T)$. F-089 means Full conical expansion volume.

ANALYSIS / LIFECYCLE

Result dimensions: volume. Primary manifestations: JO, JP, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-089.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-089); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-085.

Pearl cone-top anchor

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-090 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-090: $z_{P0}=H_R+H_C$; $standard=3H_R$. F-090 means Pearl simulation begins at the top-of-cone information plane.

ANALYSIS / LIFECYCLE

Result dimensions: length. Primary manifestations: JO, MK, PEARL. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-090.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-090); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-086.

Observed gas mass

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-091 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-091: $m_g = \rho_g \cdot V_C(h_g)$. F-091 means Gas mass from observed height and state-dependent density.

ANALYSIS / LIFECYCLE

Result dimensions: mass. Primary manifestations: EVE, JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-091.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-091); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-087.

Gas mass-flow from height

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-092 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-092: $m_{dot} = \rho \cdot A(h_g) \cdot h_{dot_g} + V_C(h_g) \cdot \rho_{dot}$. F-092 means Mass-flow accounting includes density changes.

ANALYSIS / LIFECYCLE

Result dimensions: mass/time. Primary manifestations: EVE, JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-092.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-092); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-088.

Observed gas-height predictor

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-093 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-093: $\hat{h} = \text{clip}(h + v \cdot dt + 0.5 \cdot a \cdot dt^2, 0, H_C)$. F-093 means Bounded prediction of observed gas-front height.

ANALYSIS / LIFECYCLE

Result dimensions: length. Primary manifestations: JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-093.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-093); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-089.

Gas net-force balance

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-094 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-094: $m_{eff} \cdot a_z = F_b + F_p + F_{act} - F_d - F_{wall} - F_{mix}$. F-094 means Geometry alone does not guarantee acceleration.

ANALYSIS / LIFECYCLE

Result dimensions: force. Primary manifestations: JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-094.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-094); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-090.

Buoyancy force / Drag force

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-095, F-096 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-095: $F_b = (\rho_{\text{ambient}} - \rho_g) \cdot g \cdot V_g$; F-096: $F_d = 0.5 \cdot C_d \cdot \rho_{\text{ambient}} \cdot A_{\text{projected}} \cdot u \cdot \text{abs}(u)$. F-095 means Reference buoyancy term under declared environment. F-096 means Reference drag term under declared coefficient and flow.

ANALYSIS / LIFECYCLE

Result dimensions: force. Primary manifestations: EVE, JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-095, F-096.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-095, F-096); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-091.

Flow continuity

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-097 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-097: $Q=A(z)*u(z)$. F-097 means For fixed flow, increasing area does not itself accelerate the gas.

ANALYSIS / LIFECYCLE

Result dimensions: volume/time. Primary manifestations: JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-097.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-097); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-092.

Residual reservoir capacity

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-098 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-098: $C_{res,k} = \gamma_k C_{rect,k}$; $0 \leq \gamma_k < 1$. F-098 means Residual reservoir remains smaller than rectangle reference capacity.

ANALYSIS / LIFECYCLE

Result dimensions: typed capacity. Primary manifestations: EVE, JO, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-098.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-098); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-093.

Umbrella/EVE/reservoir balance

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-099 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-099: $q_{cone}=q_{down}+q_{EVE}+q_{res}+q_{escape}+r$. F-099 means Downward redistribution, EVE evidence, reservoir admission, and escape are separately accounted.

ANALYSIS / LIFECYCLE

Result dimensions: typed quantity. Primary manifestations: EVE, MERMAID, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-099.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-099); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-094.

Containment modification predicate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-100 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-100: Valid(theta)=typed&positive&recomputed&conserved&bounded&evidenced&MK&JO&MJ. F-100 means Size changes preserve core logic but require full recalculation and gates.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: Bangel , JO, JP, MJ, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-100.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-100); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-095.

Rear outlet elevation

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-101 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-101: $z_{out}=H_P-\delta_z$; $0<\delta_z<H_P$. F-101 means Outlet is below the containment maximum height.

ANALYSIS / LIFECYCLE

Result dimensions: length. Primary manifestations: JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-101.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-101); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-096.

Pearl simulation exclusion radius

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-102 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-102: $R_{P,sim}=R_{top}+c_P$; $c_P \geq 0$. F-102 means Nonphysical reference circle plus declared clearance.

ANALYSIS / LIFECYCLE

Result dimensions: length. Primary manifestations: JO, MK, PEARL. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-102.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-102); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-097.

Outward-tangential outlet direction

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-103 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-103: $d_{out} = \cos(\alpha_{out})t + \sin(\alpha_{out})n_{out}$; $0 < \alpha_{out} < \pi/2$. F-103 means Slight positive outward cant from the local tangent.

ANALYSIS / LIFECYCLE

Result dimensions: dimensionless vector. Primary manifestations: JO, JP, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-103.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-103); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-098.

Outside-circle outlet path

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-104 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-104: $||\gamma(s)-c_P||^2=R_P^2+2R_P*s*\sin(\alpha_{out})+s^2$. F-104 means Path remains outside the Pearl simulation circle for $s>0$.

ANALYSIS / LIFECYCLE

Result dimensions: $length^2$. Primary manifestations: JO, MK, PEARL. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-104.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-104); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-099.

Reservoir volume balance

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-105 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-105: $dV_L/dt=Q_{out}-Q_{return}-Q_{drain}-Q_{escape}$. F-105 means Connected lake-like buffer control-volume balance.

ANALYSIS / LIFECYCLE

Result dimensions: volume/time. Primary manifestations: EVE, JO, MERMAID, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-105.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-105); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-100.

Typed reservoir quantity balance

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-106 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-106: $dq_L, k/dt = q_{out}, k - q_{return}, k - q_{drain}, k - q_{escape}, k$. F-106 means Per-dimension balance prevents cross-unit collapse.

ANALYSIS / LIFECYCLE

Result dimensions: typed quantity/time. Primary manifestations: EVE, JO, MERMAID, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-106.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-106); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-101.

Required buffer volume

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-107 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-107: $V_L, req = T_{hold} * \max(0, Q_{out}, H - Q_{return}, L) + V_{residual}, H$. F-107 means Conservative buffer capacity from inflow-return mismatch and residual.

ANALYSIS / LIFECYCLE

Result dimensions: volume. Primary manifestations: JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-107.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-107); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-102.

Outlet area lower bound

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-108 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-108: $A_{out} \geq Q_{design}/u_{out,max}$. F-108 means Area sizing from conservative design flow and allowable velocity.

ANALYSIS / LIFECYCLE

Result dimensions: area. Primary manifestations: JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-108.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-108); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-103.

Circular outlet radius lower bound

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-109 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-109: $r_{out} \geq \sqrt{A_{out}/\pi}$. F-109 means Circular outlet radius derived from required area.

ANALYSIS / LIFECYCLE

Result dimensions: length. Primary manifestations: JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-109.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-109); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-104.

Bounded drip impulse

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-110 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-110: $J_{drop} = m_{drop} \cdot v_{drop} \leq J_{drop,max}$. F-110 means Small-discharge reference objective; threshold requires evidence.

ANALYSIS / LIFECYCLE

Result dimensions: impulse. Primary manifestations: ANGELS, JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-110.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-110); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-105.

Small-wave energy reference

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-111 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-111: $E_{\text{wave}} \sim 0.5 \cdot \rho \cdot g \cdot a_{\text{wave}}^2 \cdot A_{\text{surface}}$. F-111 means Applies only under small-amplitude liquid-surface assumptions.

ANALYSIS / LIFECYCLE

Result dimensions: energy. Primary manifestations: EVE, JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-111.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-111); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-106.

Froude reference

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-112 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-112: $Fr=U/\sqrt{gL}$. F-112 means Flow-regime reference; $Fr<1$ is a conditional subcritical target.

ANALYSIS / LIFECYCLE

Result dimensions: dimensionless. Primary manifestations: JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-112.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-112); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-107.

Circular return-port area

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-113 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-113: $A_{in} = \pi \cdot r_{in}^2$. F-113 means Circular re-entry cross-section.

ANALYSIS / LIFECYCLE

Result dimensions: area. Primary manifestations: JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-113.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-113); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-108.

Inward-tangential reentry components

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-114 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-114: $u_r = -U \sin(\beta_{in})$; $u_{\theta} = \sigma U \cos(\beta_{in})$. F-114 means Small inward angle plus tangential component; no vortex proof.

ANALYSIS / LIFECYCLE

Result dimensions: velocity. Primary manifestations: JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-114.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-114); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-109.

Spiral compatibility ratio

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-115 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-115: $\chi_{\text{spiral}} = |u_{\text{theta}}| / \max(|u_r|, \epsilon)$. F-115 means Reference ratio for tangential-dominant reentry.

ANALYSIS / LIFECYCLE

Result dimensions: dimensionless. Primary manifestations: JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-115.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-115); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-110.

Return continuity

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-116 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-116: $Q_{\text{return}} = A_{\text{in}} \cdot u_{\text{n}}$. F-116 means Re-entry flow through the circular port.

ANALYSIS / LIFECYCLE

Result dimensions: volume/time. Primary manifestations: JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-116.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-116); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-111.

Relative-frame velocity

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-117 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-117: $v_{rel} = v_B - v_A - \Omega_A \times r$. F-117 means Coordinate-frame-relative motion; perspective does not create energy.

ANALYSIS / LIFECYCLE

Result dimensions: velocity. Primary manifestations: JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-117.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-117); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-112.

Frictional dissipation

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-118 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-118: $P_{diss} = \max(0, -F_f \cdot v_{rel})$. F-118 means Measured frame-relative frictional dissipation.

ANALYSIS / LIFECYCLE

Result dimensions: power. Primary manifestations: JO, MERMAID, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-118.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-118); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-113.

Recoverable friction-energy bound

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-119 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-119: $E_{rec} \leq \eta_{rec} \cdot \int (P_{diss} dt)$; $0 \leq \eta_{rec} \leq 1$. F-119 means No physical recovery without an evidenced conversion mechanism.

ANALYSIS / LIFECYCLE

Result dimensions: energy. Primary manifestations: JO, MERMAID, MK, SHIVA. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-119.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-119); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-114.

Reservoir transaction gate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-120 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-120: Admit=AngelPass&M3Lease&MKPass&JOPass&MermaidReconciled&MJPermit. F-120 means Every reservoir transfer requires safety, routing, physics, proof, reconciliation, and permit.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: ANGELS, JO, M3, MERMAID, MJ, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-120.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-120); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-115.

Re-entry swirl ratio

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-121 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-121: $\chi_i = |u_{\theta}| / \max(|u_r|, \epsilon_u)$. F-121 means Represents tangential-to-inward re-entry velocity.

ANALYSIS / LIFECYCLE

Result dimensions: dimensionless. Primary manifestations: JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-121.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-121); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-116.

Re-entry processing cycle

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-122 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-122: $\text{cycle_reentry} = \text{cycle_exit} + 1$. F-122 means Prohibits same-cycle feedback and creates a new receipt chain.

ANALYSIS / LIFECYCLE

Result dimensions: cycle identifier. Primary manifestations: JO, M3, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-122.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-122); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-117.

Perspective transform residual

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-123 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-123: $r_{Pi}=x_{B-T_A_to_B}*x_A$. F-123 means Measures disagreement after transforming observations between reference frames.

ANALYSIS / LIFECYCLE

Result dimensions: typed vector. Primary manifestations: EVE, JO, MERMAID, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-123.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-123); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-118.

Physical pressure-flow dissipation

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-124 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-124: $E_{\text{diss}} = \int (\Delta p(t) \cdot Q(t) dt)$. F-124 means Stores measured physical dissipation only when pressure and flow are evidenced.

ANALYSIS / LIFECYCLE

Result dimensions: energy. Primary manifestations: JO, MERMAID, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-124.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-124); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-119.

Information friction

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-125 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-125: $C_info = \int(B_residual(t)dt)$. F-125 means Stores unresolved information or memory cost without treating it as energy.

ANALYSIS / LIFECYCLE

Result dimensions: byte*time. Primary manifestations: JO, M3, MERMAID. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-125.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-125); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-120.

Rotational setpoint damping

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-126 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-126: $\omega_{\text{tilde}} = (2/3) \cdot \omega + (1/3) \cdot \omega_{\text{star}}$. F-126 means Damps the desired rotational-wave setpoint.

ANALYSIS / LIFECYCLE

Result dimensions: angular velocity. Primary manifestations: JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-126.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-126); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-121.

Rotational step cap

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-127 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-127: $|\omega_{next}-\omega| \leq 0.1 \cdot \omega_{scale}$. F-127 means Limits one-step rotational changes.

ANALYSIS / LIFECYCLE

Result dimensions: angular velocity. Primary manifestations: ANGELS, JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-127.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-127); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-122.

Outlet transfer conservation

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-128 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-128: $q_{\text{exit}}=q_{\text{lake_in}}+q_{\text{EVE}}+q_{\text{escape}}+r_o$. F-128 means Separates lake admission, EVE observation, escape, and residual.

ANALYSIS / LIFECYCLE

Result dimensions: typed quantity. Primary manifestations: EVE, JO, MERMAID, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-128.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-128); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-123.

Re-entry recalculation vector

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-129 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-129: $\Delta_x=[\Delta_m,\Delta_W,\Delta_V,\Delta_\rho,\Delta_T,\Delta_p,\Delta_h]$. F-129 means Declares the observed changes that trigger recalculation before re-entry.

ANALYSIS / LIFECYCLE

Result dimensions: typed vector. Primary manifestations: EVE, JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-129.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-129); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-124.

Re-entry admissibility predicate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-130 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-130: Admit_re=types&units&new_cycle&capacity&wave&MK&JO&Angels&M3&MJ. F-130 means Requires complete physics, evidence, safety, routing, and authority before physical re-entry.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: ANGELS, Bangel, JO, JP, M3, MJ, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-130.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-130); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-125.

Uncertainty-aware Pearl reference clearance

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-131 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-131: $\min_s(|\gamma_{out}(s)-c_P|-R_P, sim) \geq c_{min}+U_{path}$. F-131 means Path remains outside the nonphysical Pearl simulation reference circle after uncertainty is included.

ANALYSIS / LIFECYCLE

Result dimensions: length. Primary manifestations: JO, MK, PEARL. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-131.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-131); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-126.

Outward angular-gap predicate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-132 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-132: $\text{abs}(\text{wrap}(\alpha_{\text{out}} - \alpha_{\text{gap}})) \leq \Delta \alpha_{\text{gap}} / 2$. F-132 means Outlet direction remains within the declared outward-facing gap.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: JO, JP, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-132.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-132); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-127.

Available outlet pressure

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-133 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-133: $\Delta p_{\text{available}} = p_{\text{containment}} - p_{\text{lake}} + \rho \cdot g \cdot (z_{\text{out}} - z_{\text{lake}})$. F-133 means Pressure and elevation state available to drive a reference outlet flow.

ANALYSIS / LIFECYCLE

Result dimensions: pressure. Primary manifestations: JO, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-133.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-133); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-128.

Outlet pressure margin

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-134 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-134: $\Delta p_{margin} = \Delta p_{available} - \Delta p_{loss} - U_{\Delta p}$. F-134 means Conservative pressure margin after losses and uncertainty.

ANALYSIS / LIFECYCLE

Result dimensions: pressure. Primary manifestations: JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-134.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-134); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-129.

Minimum outlet grade / Selected positive outlet grade

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-135, F-136 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-135: $\alpha_{min} = \text{atan}(\max(0, \Delta p_{loss} + U_{\Delta p}(p_{containment} - p_{lake})) / (\rho * g * L_{path}))$; F-136: $\alpha_{selected} = \alpha_{min} + \Delta \alpha$; $\Delta \alpha > 0$. F-135 means Minimum modeled grade needed to overcome pressure deficit under declared assumptions. F-136 means Slight positive increase above the modeled minimum; no universal value is asserted.

ANALYSIS / LIFECYCLE

Result dimensions: angle. Primary manifestations: JO, JP, MJ, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-135, F-136.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-135, F-136); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-130.

Incompressible reference outlet flow

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-137 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-137: $Q_{ref}=C_dA_{out}\sqrt{2\max(0,\Delta p_{available}-\Delta p_{loss})/\rho}$. F-137 means Conditional reference flow under evidenced incompressible assumptions.

ANALYSIS / LIFECYCLE

Result dimensions: volume/time. Primary manifestations: JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-137.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-137); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-131.

Mean outlet velocity

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-138 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-138: $U_{out}=Q_{ref}/A_{out}$. F-138 means Conditional mean velocity for the declared outlet area.

ANALYSIS / LIFECYCLE

Result dimensions: length/time. Primary manifestations: JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-138.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-138); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-132.

Weber number reference

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-139 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-139: $We = \rho \cdot U^2 \cdot L / \sigma$. F-139 means Surface-tension-to-inertia reference when the model applies.

ANALYSIS / LIFECYCLE

Result dimensions: dimensionless. Primary manifestations: JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-139.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-139); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-133.

Wave amplitude ratio

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-140 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-140: $\epsilon_a = a_{\text{wave}}/h_L$. F-140 means Dimensionless small-amplitude observation ratio.

ANALYSIS / LIFECYCLE

Result dimensions: dimensionless. Primary manifestations: EVE, JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-140.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-140); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-134.

Small-wave observation gate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-141 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-141: WaveGate=(Fr<=Fr_max)&(epsilon_a<=epsilon_a,max)&(We<=We_max when applicable). F-141 means Reference gate for bounded low-amplitude observations; not proof of wave suppression.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: ANGELS, JO, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-141.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-141); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-135.

Discrete reservoir inventory

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-142 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-142: $q_{L,t+1}=q_{L,t}+q_{out}-q_{return}-q_{drain}-q_{escape}-r_L$. F-142 means Receipted discrete update for the separate lake/buffer control volume.

ANALYSIS / LIFECYCLE

Result dimensions: typed quantity. Primary manifestations: EVE, JO, M3, MERMAID. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-142.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-142); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-136.

Vector reservoir headroom

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-143 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-143: $H_L,k=C_L,k-q_L,k$. F-143 means Headroom remains separate for every resource dimension.

ANALYSIS / LIFECYCLE

Result dimensions: typed capacity. Primary manifestations: EVE, JO, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-143.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-143); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-137.

Vector reservoir admission / No same-cycle feedback predicate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-144, F-145 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-144: $Admit_L = AND_k[q_L, k + q_in, k \leq (1 - h_L, k)C_L, k]$; F-145: $ReentryValid = (cycle_reentry = cycle_exit + 1) \& no_uncleared_generation_reuse$. F-144 means Admission fails when any resource dimension lacks required headroom. F-145 means Re-entry starts a new receipted cycle and cannot feed the same active generation.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: ANGELS, JO, M3, MJ, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-144, F-145.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-144, F-145); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-138.

Solar/auxiliary/recovery input energy / Solar system energy conservation

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-146, F-147 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-146: $E_{in} = E_{solar} + E_{aux} + E_{recovered}$; F-147: $E_{in} = \Delta E_{storage} + E_{load} + E_{loss} + r_E$. F-146 means All admitted energy inputs are separately measured and summed; no source may be implied or double-counted. F-147 means The shared core requires storage change, delivered load, loss, residual, and uncertainty to reconcile.

ANALYSIS / LIFECYCLE

Result dimensions: energy. Primary manifestations: EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-146, F-147.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-146, F-147); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-139.

Instantaneous power balance / Conservative reserve margin

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-148, F-149 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-148: $P_{balance} = P_{source} - P_{load} - P_{charge} - P_{loss}$; F-149: $R_E = E_{available,L} - M_E * E_{required,H}$. F-148 means Power routing is typed and conservation-bound at each observation interval. F-149 means A start or service is eligible only when conservative available energy exceeds required energy with margin.

ANALYSIS / LIFECYCLE

Result dimensions: energy, power. Primary manifestations: EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-148, F-149.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-148, F-149); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-140.

Path efficiency / Bounded storage state update

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-150, F-151 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-150: $\eta_{\text{path}} = E_{\text{delivered}} / E_{\text{input}}$; F-151: $\text{SOC}_{\text{next}} = \text{clip}(\text{SOC} + (\eta_c \cdot E_{\text{charge}} - E_{\text{discharge}} / \eta_d) / E_{\text{capacity}}, 0, 1)$. F-150 means Efficiency is a measured or simulated ratio with declared boundaries and cannot exceed one without a reconciliation fault. F-151 means Storage state is bounded and depends on measured/declared capacity and efficiencies.

ANALYSIS / LIFECYCLE

Result dimensions: ratio. Primary manifestations: EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-150, F-151.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-150, F-151); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-141.

Thermal first-order update / Predicted bus voltage

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-152, F-153 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-152: $T_{next} = T + dt/C_{th} * (P_{heat} - (T-T_{env})/R_{th})$; F-153: $V_{pred}(t+h) = V_t + h*dV_{dt}$. F-152 means A reference thermal model preserves heat input, environmental exchange, units, and uncertainty. F-153 means Voltage trend predicts a reserve crossing before zero and supports bounded protective action.

ANALYSIS / LIFECYCLE

Result dimensions: temperature, voltage. Primary manifestations: EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-152, F-153.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-152, F-153); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-142.

Shared start/admission gate / Cross-profile transfer gate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-154, F-155 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-154: $G_{start} = \text{energy AND voltage AND current AND thermal AND containment AND ethics AND MJ_permit}$; F-155: $\text{TransferOK} = K \text{ AND } U \text{ AND } D \text{ AND } R \text{ AND } E \text{ AND } M \text{ AND } B \text{ AND } Q \text{ AND } V \text{ AND } A$. F-154 means No single physics or software result substitutes for the complete start/admission gate. F-155 means A shared equation does not transfer a physical parameter without quantity, unit, domain, range, environment, method, boundary, uncertainty, evidence, and authority checks.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-154, F-155.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-154, F-155); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-143.

Solar uncertainty propagation / Solar evidence-state transition

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-156, F-157 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-156: $u_y^2 = J \cdot \sigma_J^2 + u_{model}^2$; F-157: R1 --all required evidence and gates--> R2. F-156 means Every derived solar quantity carries covariance-aware measurement and model uncertainty. F-157 means Every solar command remains R1 until required evidence, safety, authority, and claims ceilings pass.

ANALYSIS / LIFECYCLE

Result dimensions: state, uncertainty. Primary manifestations: EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-156, F-157.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-156, F-157); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-144.

Phone-profile solar energy / Workload-aware power demand

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-158, F-159 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-158: $E_{\text{solar_phone}} = \text{integral}(P_{\text{pv_phone}}(t), t_0, t_1)$; F-159: $P_{\text{phone}} = P_{\text{base}} + \text{sum}(P_{\text{task_i}} * a_i)$. F-158 means The semiconductor/phone profile integrates measured or simulated photovoltaic power over a named interval. F-159 means OS workload power is represented as a typed sum of baseline and admitted task loads.

ANALYSIS / LIFECYCLE

Result dimensions: energy, power. Primary manifestations: JO, JP, M3, MERMAID, MJ, MJOS, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-158, F-159.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-158, F-159); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-145.

Phone reserve duration / Phone energy deficit

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-160, F-161 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-160: $t_{\text{reserve}} = E_{\text{reserve},L} / P_{\text{critical},H}$; F-161: $D_E = \max(0, E_{\text{required},H} - E_{\text{available},L})$. F-160 means Reserve duration uses conservative energy and critical-load bounds. F-161 means A positive deficit creates HOLD/load-shed behavior rather than invented capacity.

ANALYSIS / LIFECYCLE

Result dimensions: energy, time. Primary manifestations: JO, JP, M3, MERMAID, MJ, MJOS, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-160, F-161.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-160, F-161); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-146.

Environment-dependent leakage

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-162 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-162: $I_{leak} = f(V,T,RH,time,material_state)$. F-162 means Leakage is a measured/profile function rather than a universal constant.

ANALYSIS / LIFECYCLE

Result dimensions: current. Primary manifestations: JO, JP, M3, MERMAID, MJ, MJOS, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-162.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-162); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-147.

Wake energy accounting / Phone thermal margin

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-163, F-164 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-163: $E_{wake} = \text{integral}(V_{wake}(t) \cdot I_{wake}(t), t_0, t_1)$; F-164: $M_T = T_{allowable} - (T_{observed} + U_T)$. F-163 means Wake energy is measured from synchronized voltage/current data. F-164 means Thermal margin must remain nonnegative for the applicable state.

ANALYSIS / LIFECYCLE

Result dimensions: energy, temperature. Primary manifestations: JO, JP, M3, MERMAID, MJ, MJOS, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-163, F-164.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-163, F-164); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-148.

Useful work per delivered energy / Data-performance correlation

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-165, F-166 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-165: $\eta_{work} = W_{verified} / E_{delivered}$; F-166: $\rho_{DP} = cov(D,P) / (\sigma_D \sigma_P)$. F-165 means Performance/energy analysis is only meaningful when work and energy boundaries are explicit. F-166 means Correlation is descriptive and cannot be represented as causation without additional evidence.

ANALYSIS / LIFECYCLE

Result dimensions: ratio, work_per_energy. Primary manifestations: JO, JP, M3, MERMAID, MJ, MJOS, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-165, F-166.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-165, F-166); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-149.

Workload allocation update / Semiconductor scale map

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-167, F-168 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-167: $w_{next} = \text{bounded_simplex}((2/3)w + (1/3)w_{target}, \text{step} \leq 0.1)$; F-168: $p_{SC}(x,y,z) = o_{SC} + x*a_{SC} + y*b_{SC} + z*c_{SC}$. F-167 means Workload/resource allocation preserves nonnegative weights, sum-to-one, and the one-tenth step boundary. F-168 means Normalized topology becomes physical only through a profile-specific mapping with measured dimensions and tolerances.

ANALYSIS / LIFECYCLE

Result dimensions: length_vector, ratio_vector. Primary manifestations: JO, JP, M3, MERMAID, MJ, MJOS, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-167, F-168.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-167, F-168); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-150.

Phone-profile evidence completeness / Marine solar-array energy

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-169, F-170 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-169: $E_{SC} = \min_{required}(article, calibration, baseline, energy, thermal, geometry, JO, MK, MJ)$; F-170: $E_{array} = \int P_{array}(t) dt$. F-169 means The phone profile cannot claim readiness while a controlling evidence class is absent. F-170 means Marine solar input is integrated within a named installation and environmental boundary.

ANALYSIS / LIFECYCLE

Result dimensions: energy, logical. Primary manifestations: EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-169, F-170.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-169, F-170); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-151.

Marine propulsion/load power / Marine mission energy

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-171, F-172 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-171: $P_{prop} = \tau * \omega$; F-172: $E_{mission} = \int(P_{prop} + P_{critical} + P_{aux,t0,t1})$. F-171 means Rotational mechanical power is represented through measured torque and angular speed; geometry alone provides no propulsion claim. F-172 means Mission demand separates propulsion, critical, and auxiliary loads.

ANALYSIS / LIFECYCLE

Result dimensions: energy, power. Primary manifestations: EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-171, F-172.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-171, F-172); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-152.

Marine critical reserve duration / Marine DC bus balance

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-173, F-174 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-173: $t_{critical} = E_{reserve,L} / P_{critical,H}$; F-174: $P_{sources} = P_{prop} + P_{critical} + P_{aux} + P_{charge} + P_{loss} + r_P$. F-173 means Critical service duration is conservative and product-classification dependent. F-174 means All marine bus flows are reconciled with a residual and uncertainty.

ANALYSIS / LIFECYCLE

Result dimensions: power, time. Primary manifestations: EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-173, F-174.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-173, F-174); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-153.

Precharge intrush reference

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-175 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-175: $I_{pre}(t) = (V_{source} - V_{bus}(t))/R_{pre}$. F-175 means A reference precharge model applies only within its validated circuit domain.

ANALYSIS / LIFECYCLE

Result dimensions: current. Primary manifestations: EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-175.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-175); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-154.

Wet/dry leakage ratio / Marine environment state vector

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-176, F-177 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-176: $K_{leak} = I_{leak,wet} / \max(I_{leak,dry}, \epsilon)$; F-177: $X_{env} = [T, RH, salt, water, vibration, roll, pitch]$. F-176 means Environmental leakage change is explicit and cannot be hidden by a dry baseline. F-177 means Marine physical evidence remains a multi-dimensional vector.

ANALYSIS / LIFECYCLE

Result dimensions: ratio, typed_vector. Primary manifestations: EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-176, F-177.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-176, F-177); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-155.

Vibration exposure / Recovered energy ceiling

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-178, F-179 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-178: $D_{vib} = \text{integral}(a_{rms}(t)^2, t_0, t_1)$; F-179: $E_{recovered} \leq \eta_{recovery} * E_{available_loss}$. F-178 means Vibration exposure is a measured reference quantity, not a universal damage prediction. F-179 means Recovery cannot exceed evidenced available loss and efficiency.

ANALYSIS / LIFECYCLE

Result dimensions: acceleration_squared_time, energy. Primary manifestations: EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-178, F-179.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-178, F-179); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-156.

Priority load shedding / Marine evidence and permit gate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-180, F-181 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-180: shed = lowest_priority_loads_until(P_source,L >= P_critical,H + margin); F-181: G_marine = class AND environment AND energy AND structure AND containment AND ethics AND MJ_permit. F-180 means Containment and safety loads cannot be shed to preserve optional service. F-181 means No vessel operation or propulsion test is authorized by design trace alone.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-180, F-181.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-180, F-181); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-157.

Peaceful spacecraft solar energy / Avionics bus balance

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-182, F-183 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-182: $E_{space_solar} = \text{integral}(P_{solar_space}(t), t_0, t_1)$; F-183: $P_{av_source} = P_{avionics} + P_{thermal} + P_{comms} + P_{charge} + P_{loss} + r_P$. F-182 means Solar electrical input for avionics/reserve is bounded to a declared peaceful research profile. F-183 means The reference bus separates service classes and preserves residual accounting.

ANALYSIS / LIFECYCLE

Result dimensions: energy, power. Primary manifestations: ANGELS, BELLATRIX, EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-182, F-183.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-182, F-183); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-158.

Emergency reserve duration / Spacecraft thermal balance

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-184, F-185 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-184: $t_{\text{emergency}} = E_{\text{emergency,L}} / P_{\text{emergency,H}}$; F-185: $C_{\text{th}} \cdot dT/dt = P_{\text{internal}} + P_{\text{solar_absorbed}} - P_{\text{rejected}}$. F-184 means Emergency reserve is conservative and does not authorize flight or propulsion. F-185 means A reference thermal balance requires geometry, materials, environment, and radiation model evidence.

ANALYSIS / LIFECYCLE

Result dimensions: power, time. Primary manifestations: ANGELS, BELLATRIX, EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-184, F-185.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-184, F-185); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-159.

Space-profile battery margin / Authenticated startup state

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-186, F-187 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-186: $M_{batt} = E_{battery,L} - E_{required,H}$; F-187: $S_{next} = transition(S_{current}, command, authority, evidence, ethics)$. F-186 means A negative or unknown margin blocks the applicable state transition. F-187 means Startup/shutdown state changes require exact command, authority, evidence, and ethics.

ANALYSIS / LIFECYCLE

Result dimensions: energy, state. Primary manifestations: ANGELS, BELLATRIX, EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-186, F-187.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-186, F-187); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-160.

Fault isolation set / Redundant service availability

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-188, F-189 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-188: $F_{isolated} = isolate(F_{detected}, affected_boundaries, receipts)$; F-189: $A_{service} = 1 - product(1-A_i)$ for independent admitted channels. F-188 means Fault isolation is bounded and preserves evidence; it does not provide targeting or evasion capability. F-189 means Availability calculations require evidenced independence and cannot be assumed.

ANALYSIS / LIFECYCLE

Result dimensions: ratio, set. Primary manifestations: ANGELS, BELLATRIX, EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-188, F-189.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-188, F-189); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-161.

Propulsion-state coordination reference / High-energy emergency reserve

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-190, F-191 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-190: $S_{prop_next} = governed_state_update(S_{prop}, telemetry, limits, authority)$; F-191: $R_{HE} = E_{safe_shutdown}, L - E_{shutdown_required}, H$. F-190 means The model coordinates state labels without selecting energetic materials, constructing propulsion, or providing launch authority. F-191 means Safe-shutdown reserve must remain nonnegative before any high-energy research transition.

ANALYSIS / LIFECYCLE

Result dimensions: energy, state. Primary manifestations: ANGELS, BELLATRIX, EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-190, F-191.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-190, F-191); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-162.

Non-weaponization gate / Rocket-profile evidence and permit gate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-192, F-193 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-192: G_ethics = peaceful_research AND no_targeting AND no_destructive_payload AND no_evasion_for_harm; F-193: G_rocket = peaceful_scope AND profile_evidence AND safety AND regulatory_hold_resolved AND MJ_permit. F-192 means Weaponized or unresolved dual-use execution is denied or held; no passkey overrides this gate. F-193 means Design trace does not authorize propulsion construction, launch, flight, or physical testing.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: ANGELS, BELLATRIX, EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-192, F-193.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-192, F-193); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-163.

DRO founder lower marker / DRO alias conversion

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-194, F-195 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-194: $d_A = 5e-22$ m; F-195: $d_B = 3e-12$ nm * $1e-9$ m/nm = $3e-21$ m. F-194 means Founder-declared theoretical lower marker; not a measured particle size. F-195 means Converts the founder alias string into SI length.

ANALYSIS / LIFECYCLE

Result dimensions: length. Primary manifestations: DRO, JO, JP, MJ, MK, PEARL. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-194, F-195.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-194, F-195); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-164.

DRO conservative R threshold / DRO upper spherical reference

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-196, F-197 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-196: $d_R = \max(d_A, d_B) = 3e-21 \text{ m}$; F-197: $d_U = 0.15 \text{ nm} = 1.5e-10 \text{ m}$. F-196 means Conservative simulation threshold that satisfies both inconsistent founder minima. F-197 means Upper founder reference for a spherical representation.

ANALYSIS / LIFECYCLE

Result dimensions: length. Primary manifestations: DRO, JO, JP, MJ, MK, PEARL. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-196, F-197.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-196, F-197); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-165.

DRO declared interval / DRO reference radius

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-198, F-199 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-198: d in $[d_R, d_U]$; F-199: $r_{DRO} = d/2$. F-198 means A typed simulation interval; not physical existence. F-199 means Classical geometric reference radius.

ANALYSIS / LIFECYCLE

Result dimensions: length. Primary manifestations: DRO, JO, JP, MJ, MK, PEARL. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-198, F-199.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-198, F-199); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-166.

DRO spherical reference volume / DRO interval ratio

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-200, F-201 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-200: $V_{DRO} = 4 \cdot \pi \cdot r_{DRO}^3 / 3$; F-201: $\Gamma_D = d_U / d_R$. F-200 means Classical sphere representation only at the declared scale. F-201 means Scale separation between R threshold and upper reference.

ANALYSIS / LIFECYCLE

Result dimensions: ratio, volume. Primary manifestations: DRO, JO, JP, MJ, MK, PEARL. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-200, F-201.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-200, F-201); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-167.

DRO quantity count / DRO remainder

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-202, F-203 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-202: $N_{DRO} = \text{floor}(Q_{\text{observed}}/q_{\text{unit}})$; F-203: $Q_{\text{rem}} = Q_{\text{observed}} - N_{DRO} \cdot q_{\text{unit}}$. F-202 means Count of complete typed DRO units from a measured or simulated quantity. F-203 means Unallocated typed remainder; never silently discarded.

ANALYSIS / LIFECYCLE

Result dimensions: count, quantity. Primary manifestations: DRO, JO, JP, MJ, MK, PEARL. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-202, F-203.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-202, F-203); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-168.

Pearl-node allocation count / DRO-Pearl handoff balance

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-204, F-205 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-204: $N_P = \text{ceil}(N_{DRO}/C_P)$; F-205: $N_{DRO,in} = N_{DRO,pearl} + N_{DRO,held} + N_{DRO,escaped} + r_{DRO}$. F-204 means Number of computational Pearl nodes required for DRO records. F-205 means Discrete conservation across the handoff.

ANALYSIS / LIFECYCLE

Result dimensions: count. Primary manifestations: DRO, JO, JP, MJ, MK, PEARL. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-204, F-205.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-204, F-205); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-169.

DRO R-state gate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-206 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-206: $G_R = scale_interval_valid \text{ AND } source_bound \text{ AND } units_valid$. F-206 means Eligibility for an R candidate.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: DRO, JO, JP, MJ, MK, PEARL. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and accounting dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-206.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-206); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-170.

DRO R1 gate / DRO R2 gate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-207, F-208 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-207: $G_{R1} = G_R$ AND observed AND unresolved_items>0; F-208: $G_{R2} = G_R$ AND observed AND all_required_evidence_pass. F-207 means Observed-but-unresolved transition remains R1. F-208 means Verified living-static DRO representation.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: DRO, JO, JP, MJ, MK, PEARL. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-207, F-208.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-207, F-208); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-171.

Optical wavelength / Photon energy

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-209, F-210 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-209: $\lambda = c/f$; F-210: $E_{\gamma} = h \cdot f$. F-209 means Reference wavelength for a measured optical-control frequency. F-210 means Energy per photon at frequency f .

ANALYSIS / LIFECYCLE

Result dimensions: energy, length. Primary manifestations: DRO, JO, JP, MJ, MK, PEARL. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-209, F-210.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-209, F-210); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-172.

Photon count estimate / Optical coupling evidence

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-211, F-212 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-211: $N_{\gamma} = P \cdot \Delta t / (h \cdot f)$; F-212: $N_{\text{couple}} = \eta_c \cdot N_{\gamma}$. F-211 means Expected incident photon count from measured optical power and duration. F-212 means Expected coupled-event count under a calibrated coupling efficiency.

ANALYSIS / LIFECYCLE

Result dimensions: count. Primary manifestations: DRO, JO, JP, MJ, MK, PEARL. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-211, F-212.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-211, F-212); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-173.

Optical admissibility / DRO collection rate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-213, F-214 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-213: $G_{opt} = calibrated_band \text{ AND } measured_power \text{ AND } eta_c_evidenced \text{ AND } uncertainty_valid$; F-214: $R_{DRO} = \Delta N_{DRO} / \Delta t$. F-213 means Optical collection remains HOLD unless every evidence term is present. F-214 means Observed or simulated DRO-unit acquisition rate.

ANALYSIS / LIFECYCLE

Result dimensions: count/time, logical. Primary manifestations: DRO, JO, JP, MJ, MK, PEARL. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-213, F-214.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-213, F-214); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-174.

DRO scale uncertainty / DRO interval classification

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-215, F-216 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-215: $U_d = k \cdot \sqrt{J \cdot \Sigma \cdot J^T + u_{model}^2}$; F-216: $I_d = [d_{hat} - U_d, d_{hat} + U_d]$. F-215 means Expanded uncertainty of the scale representation. F-216 means Evidence interval used for R/R1/R2 classification.

ANALYSIS / LIFECYCLE

Result dimensions: length. Primary manifestations: DRO, JO, JP, MJ, MK, PEARL. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-215, F-216.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-215, F-216); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-175.

DRO capacity slack

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-217 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-217: $S_k = (1-h_k)C_k - L_k$. F-217 means Remaining capacity in each typed Pearl-node dimension.

ANALYSIS / LIFECYCLE

Result dimensions: quantity. Primary manifestations: DRO, JO, JP, MJ, MK, PEARL. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-217.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-217); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-176.

DRO overflow vector / DRO ledger balance

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-218, F-219 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-218: $E_k = \max(0, L_k - (1 - h_k)C_k)$; F-219: $r_Q = Q_{in} - Q_{alloc} - Q_{retained} - Q_{transferred} - Q_{escaped} - \Delta Q_{stored}$. F-218 means Typed excess; surplus in another dimension cannot compensate. F-219 means Complete quantity balance.

ANALYSIS / LIFECYCLE

Result dimensions: quantity. Primary manifestations: DRO, JO, JP, MJ, MK, PEARL. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-218, F-219.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-218, F-219); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-177.

DRO energy ledger / Available start energy lower bound

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-220, F-221 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-220: $r_E = E_{in} - E_{stored} - E_{start} - E_{restart} - E_{loss} - E_{containment}$; F-221: $E_{avail,L} = E_{solar,L} + E_{acoustic,L} + E_{other,L} - E_{loss,H}$. F-220 means Energy conservation for reference start accounting. F-221 means Conservative available energy.

ANALYSIS / LIFECYCLE

Result dimensions: energy. Primary manifestations: ANGELS, DRO, EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, PEARL, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-220, F-221.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-220, F-221); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-178.

Start gate / Restart reserve

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-222, F-223 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-222: $G_{start} = E_{avail}, L \geq M_E(E_{start}, H + E_{restart}, H)$ AND all_safety_gates; F-223: $E_{restart}, L = E_{reserve}, L - E_{critical}, H$. F-222 means Start readiness requires immediate start plus restart reserve. F-223 means Lower-bound reserve after critical obligations.

ANALYSIS / LIFECYCLE

Result dimensions: energy, logical. Primary manifestations: ANGELS, DRO, EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, PEARL, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-222, F-223.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-222, F-223); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-179.

Solar contribution / Acoustic/noise contribution

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-224, F-225 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-224: $E_{\text{solar}} = \int P_{\text{solar}}(t) dt$; F-225: $E_{\text{acoustic}} = \int \eta_a(t) I(t) A(t) dt$. F-224 means Measured solar contribution to the reference ledger. F-225 means Measured conversion only; noise alone does not prove usable energy.

ANALYSIS / LIFECYCLE

Result dimensions: energy. Primary manifestations: ANGELS, DRO, EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, PEARL, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-224, F-225.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-224, F-225); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-180.

Generic separation-work lower bound / Species availability

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-226, F-227 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-226: $W_{sep} \geq \Delta G_{sep}$; F-227: $n_{species} = x_{species} \cdot n_{source}$. F-226 means Any species-separation claim requires a thermodynamic and measured energy balance. F-227 means Available amount depends on measured composition, not assumption.

ANALYSIS / LIFECYCLE

Result dimensions: amount, energy. Primary manifestations: ANGELS, DRO, EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, PEARL, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-226, F-227.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-226, F-227); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-181.

Conversion efficiency / Controlled logical release

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-228, F-229 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-228: $\eta = E_{out}/E_{in}$, $0 \leq \eta \leq 1$; F-229: $G_{release} = authorization \text{ AND } destination_capacity \text{ AND } conservation \text{ AND } safety$. F-228 means Measured conversion efficiency; undefined when input is zero or unknown. F-229 means Normalizes pop/release language to a bounded logical event.

ANALYSIS / LIFECYCLE

Result dimensions: logical, ratio. Primary manifestations: ANGELS, DRO, EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, PEARL, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-228, F-229.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-228, F-229); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-182.

DRO thermal gate / Semiconductor DRO charge balance

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-230, F-231 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-230: $T_H \leq T_{allow} - \Delta T_{margin}$; F-231: $\Delta Q = \int (I_{intake} - I_{leak} - I_{release}) dt + r_Q$. F-230 means Conservative thermal boundary for any future physical profile. F-231 means Charge accounting for the semiconductor profile.

ANALYSIS / LIFECYCLE

Result dimensions: charge, temperature. Primary manifestations: ANGELS, DRO, EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, PEARL, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-230, F-231.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-230, F-231); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-183.

Semiconductor Pearl-node memory / Semiconductor wake-reserve gate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-232, F-233 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-232: $B_P = B_DRO + B_lineage + B_uncertainty + B_receipts + B_headroom$; F-233: $E_node,L \geq M_E * (E_wake,H + E_restart,H)$. F-232 means Memory required for a computational Pearl node. F-233 means Reference wake and restart reserve gate.

ANALYSIS / LIFECYCLE

Result dimensions: bytes, logical. Primary manifestations: ANGELS, DRO, EVE, JO, JP, M3, MERMAID, MJ, MJOS, MK, PEARL, SISTER. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-232, F-233.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-232, F-233); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-184.

Semiconductor profile isolation / Lecanto byte-source digest

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-234, F-235 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-234: $G_{SC} = \text{profile} == SC \text{ AND no_LS_value_inheritance}$; F-235: $H_{src} = \text{SHA256}(\text{source_bytes})$. F-234 means Rejects marine or rocket physical values in the SC profile. F-235 means Immutable source identity reference.

ANALYSIS / LIFECYCLE

Result dimensions: digest, logical. Primary manifestations: ANGELS, BELLATRIX, ELSA, JO, JP, LECANTO, M3, MJ, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-234, F-235.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-234, F-235); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-185.

Lecanto pixel residual / Lecanto spectral residual

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-236, F-237 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-236: $D_{px} = (1/N) \sum ||I_{test} - I_{ref}||_2$; F-237: $D_{fft} = ||FFT(I_{test}) - FFT(I_{ref})||_2$. F-236 means Average per-pixel residual after declared registration and color handling. F-237 means Frequency-domain residual used as evidence, not intent truth.

ANALYSIS / LIFECYCLE

Result dimensions: signal. Primary manifestations: ANGELS, BELLATRIX, ELSA, JO, JP, LECANTO, M3, MJ, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-236, F-237.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-236, F-237); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-186.

Lecanto provenance completeness / Lecanto intent hypothesis

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-238, F-239 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-238: $P_{prov} = \frac{complete_required_links}{required_links}$; F-239: $H_{intent} = f(words, context, declared_purpose, provenance)$. F-238 means Provenance completeness ratio; one missing mandatory link causes HOLD. F-239 means A bounded hypothesis, never a fact or authority grant.

ANALYSIS / LIFECYCLE

Result dimensions: hypothesis, ratio. Primary manifestations: ANGELS, BELLATRIX, ELSA, JO, JP, LECANTO, M3, MJ, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-238, F-239.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-238, F-239); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-187.

Lecanto transformation gate / Lecanto reject gate

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-240, F-241 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-240: $G_{edit} = source_preserved \text{ AND } modification_disclosed \text{ AND } purpose_allowed \text{ AND } safety_pass$; F-241: $G_{reject} = provenance_fail \text{ OR } harmful_purpose \text{ OR } undeclared_transform$. F-240 means A derivative may be produced only with source preservation and disclosure. F-241 means Reject or hold an unsafe or unverifiable image.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: ANGELS, BELLATRIX, ELSA, JO, JP, LECANTO, M3, MJ, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-240, F-241.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-240, F-241); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-188.

R8 command admissibility

Category: ALGORITHM / FORMULA IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: reference mathematics / typed evidence only

ISSUE

How the MJ-PBMEF framework represents and verifies the algorithmic identity carried by F-242 without converting an equation into authority or a physical claim.

RULE / DEFINITION

F-242: $G_{R8} = DRO_{valid} \text{ AND } Pearl_{node_valid} \text{ AND } Lecanto_when_image \text{ AND } MK_{pass} \text{ AND } JO_{pass} \text{ AND } ethics \text{ AND } MJ_{permit}$.
F-242 means Complete R8 command gate.

ANALYSIS / LIFECYCLE

Result dimensions: logical. Primary manifestations: ANGELS, BELLATRIX, ELSA, JO, JP, LECANTO, M3, MJ, MK. The lifecycle is purpose declaration -> Bangel typing -> Elsa semantic recovery -> JP formula CAPO -> MK applicability and dimensional review -> JO proof -> applicable safety/accounting receipts -> MJ decision -> JO evidence.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include deterministic calculation, simulation, constraint checking, evidence classification, resource planning, product-profile comparison, or command-path verification wherever the declared inputs, units, scope, and evidence ceiling match the formula identities F-242.

CONSTRAINTS / CONCLUSION

Unknown is not zero. Inputs, units, scale, environment, uncertainty, and control volume must be explicit. No physical performance, certification, legal right, financial outcome, or safety conclusion is established by this brief.

CROSS-REFERENCES

FORMULA-REGISTER.json (F-242); Pink Paper formula volumes; relevant family/product White Papers; Blue Page register entry BP-ALG-189.

MJ - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does MJ perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Project root, founder-governed authority and final bounded permit decision. Values: truth, measurement, human authority, stewardship, non-weaponization. Inputs: founder purpose, verified evidence, family receipts, Pearl and Bangel Spreadsheets decision packets. Outputs: bounded permit, hold, deny, project state.

ANALYSIS / LIFECYCLE

MJ participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: Cannot convert unknown evidence into permission or claim external authority. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever MJ's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (MJ); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-001.

Bangel - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does Bangel perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Human-facing governed language that preserves purpose and command structure. Values: intent integrity, explicit types, traceability. Inputs: human purpose, declared scope. Outputs: typed command envelope, source representation, Bangel Sheet source, if/how/then operational intake.

ANALYSIS / LIFECYCLE

Bangel participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: No independent execution, financial issuance, or physical truth. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever Bangel's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (Bangel); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-002.

Elsa - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does Elsa perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Deterministic semantic recovery and purpose-preservation layer. Values: meaning fidelity, purpose confinement, clarity. Inputs: Bangel source, context evidence. Outputs: semantic envelope, ambiguity hold.

ANALYSIS / LIFECYCLE

Elsa participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: No execution, permit, finance, or invented intent. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever Elsa's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (ELSA); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-003.

JP - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does JP perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Canonical mathematical, algorithmic, topology, CAPO, and architecture representation. Values: mathematical rigor, provenance, equivalence. Inputs: semantic envelope, founder laws. Outputs: math CAPO, algorithm CAPO, architecture CAPO, Pearl CAPO, Bangel Sheet dependency CAPO, JPOSMJ product envelope.

ANALYSIS / LIFECYCLE

JP participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: Representation is not admission, execution, or authority. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever JP's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (JP); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-004.

Mika / MK - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does Mika / MK perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Physics Modulator System for dimensional, conservation, boundary, scale, and evidence representation. Values: physical truth, unit integrity, conservation, uncertainty honesty. Inputs: JP math CAPO, environment, control volume, evidence, Pearl simulation geometry/acoustic profile, Bangel Sheet workload and dependency field. Outputs: physics CAPO, not-applicable receipt, hold, technical fail, Pearl physics receipt, spreadsheet resource-physics receipt.

ANALYSIS / LIFECYCLE

Mika / MK participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: No MJ permit, coordinate approval, physical validation, or evidence invention. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever Mika / MK's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (MK); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-005.

JO - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does JO perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Deterministic type, unit, proof, validation, runtime, and evidence engine. Values: fail closed, reproducibility, auditability. Inputs: typed CAPOs, authority receipts, evidence, Bangel Sheet revisions, Pearl lifecycle packets. Outputs: proof receipt, runtime result, hold, deny, sheet revision receipt, Pearl balance receipt.

ANALYSIS / LIFECYCLE

JO participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: No invented purpose, physics, authority, finance, or external effect. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever JO's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (JO); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-006.

MJOS - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does MJOS perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Operating-system and infrastructure substrate inside MJ. Values: bounded resources, continuity, isolation. Inputs: MJ leases, JO execution plan. Outputs: resource service, infrastructure evidence.

ANALYSIS / LIFECYCLE

MJOS participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: Not a second authority principal. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever MJOS's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (MJOS); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-007.

Angels - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does Angels perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Domain-specific observation, telemetry, hold, denial, and corrective-command family. Values: safety, watchfulness, correction. Inputs: commands, evidence, state. Outputs: safety receipt, hold, deny, correction request.

ANALYSIS / LIFECYCLE

Angels participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: No self-admission, ordinary execution, or scope expansion. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever Angels's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (ANGELS); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-008.

Bellatrix - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does Bellatrix perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Independent defense, challenge, quarantine, hostile-deviation analysis, and denial. Values: defense, independence, containment. Inputs: commands, threat evidence. Outputs: deny, quarantine, challenge receipt.

ANALYSIS / LIFECYCLE

Bellatrix participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: No positive general admission. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever Bellatrix's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (BELLATRIX); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-009.

Sister - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does Sister perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Predictive digital twin, preallocation evidence, anomaly detection, umbrella collection, and canonical physical containment request. Values: prediction, redundancy, early warning. Inputs: state stream, request trend, variance. Outputs: forecast, containment request, digital-twin receipt, physical containment request and Pearl simulation request.

ANALYSIS / LIFECYCLE

Sister participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: Prediction is not permission. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever Sister's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (SISTER); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-010.

EVE - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does EVE perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Variance, evaporative effect, screen capture, leakage, smoke-like egress, and boundary-accounting evidence. Values: diligence, respect, loss accounting, boundary truth. Inputs: mass/weight states, flows, screen measurements, residuals. Outputs: EVE observation, capture/egress ledger, hold, Pearl escape/capture observation.

ANALYSIS / LIFECYCLE

EVE participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: No release, pricing, minting, or execution. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever EVE's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (EVE); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-011.

Mary / M3 - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does Mary / M3 perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Bounded routing, API gateway, load balancing, connection pooling, and allocation stewardship. Values: fair allocation, resource hygiene, bounded routing. Inputs: admitted command, MJ lease, capacity evidence. Outputs: route receipt, allocation lease use, return receipt, Pearl allocation/transfer receipt, Bangel Sheet partition route receipt.

ANALYSIS / LIFECYCLE

Mary / M3 participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: No authority minting, lease widening, or denial bypass. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever Mary / M3's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (M3); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-012.

Mermaid - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does Mermaid perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Accounting, reconciliation, exposure, custody evidence, statements, tax lots, and financial consequence. Values: ledger truth, reconciliation, transparency. Inputs: transaction evidence, EVE evidence, Shiva proposal, Pearl lifecycle and Bangel Sheet audit particles. Outputs: account, balance, exposure, reconciliation receipt.

ANALYSIS / LIFECYCLE

Mermaid participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: No source-truth invention, minting, or final permit. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever Mermaid's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (MERMAID); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-013.

Shiva - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does Shiva perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Finance, money, treasury, liquidity, capital-job classification, risk/opportunity analysis, and distribution proposal. Values: liquidity first, stability, abundance with discipline, auditability. Inputs: capital purpose, Mermaid account, MK friction, risk evidence, Pearl regeneration opportunity vectors. Outputs: capital proposal, job-of-money classification, distribution plan.

ANALYSIS / LIFECYCLE

Shiva participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: No banking, investment advice, custody, exchange, minting, or external operation authority. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever Shiva's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (SHIVA); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-014.

Shekina - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does Shekina perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Distributed placement, replication, continuity, and infrastructure evidence. Values: continuity, bounded placement, resilience. Inputs: placement request, MJ lease. Outputs: placement receipt, continuity evidence.

ANALYSIS / LIFECYCLE

Shekina participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: No authority from location and no scope widening. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever Shekina's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (SHEKINA); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-015.

Belle - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does Belle perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Engineering analysis, feasibility, topology review, and bounded proposals. Values: engineering clarity, feasibility, benchmarking. Inputs: design CAPO, physics CAPO. Outputs: engineering proposal, risk note.

ANALYSIS / LIFECYCLE

Belle participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: Proposal is not execution or permit. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever Belle's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (BELLE); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-016.

Lecanto - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does Lecanto perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Truthful governed visualization of state, provenance, uncertainty, and system structure. Values: visibility, truth, uncertainty disclosure. Inputs: JO evidence, Mermaid account, MK physics receipt, Bangel Sheet lineage and Pearl state. Outputs: visual representation.

ANALYSIS / LIFECYCLE

Lecanto participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: Cannot manufacture certainty or underlying effects. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever Lecanto's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (LECANTO); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-017.

Moana - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does Moana perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Browser and interaction presentation of governed applications and evidence. Values: interaction truth, accessibility, bounded presentation. Inputs: Lecanto views, JO evidence. Outputs: interaction surface.

ANALYSIS / LIFECYCLE

Moana participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: No underlying effect or credential authority. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever Moana's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (MOANA); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-018.

Aviator - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does Aviator perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Organizational workspace, projects, decisions, roles, knowledge, and governed workflow. Values: understanding first, organization, decision trace. Inputs: member purpose, governed records, Bangel Spreadsheets workbooks and reports. Outputs: workspace state, decision records.

ANALYSIS / LIFECYCLE

Aviator participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: No root authority, cross-tenant scope, or unadmitted finance. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever Aviator's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (AVIATOR); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-019.

CHI - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does CHI perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Temporal variance and expected-observed-delivered-reconciled difference state. Values: variance truth, time awareness. Inputs: timestamps, expected/observed states. Outputs: variance object.

ANALYSIS / LIFECYCLE

CHI participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: No pricing, punishment, rank, or execution. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever CHI's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (CHI); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-020.

WATER - Family Manifestation

Category: FAMILY MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: domain-bounded participant identity

ISSUE

What role does WATER perform inside MJ, and what authority must remain outside its domain?

RULE / DEFINITION

Role: Interval uncertainty, verified floor, and bounded unknown-state classification. Values: uncertainty honesty, bounded intervals. Inputs: measurement intervals, evidence limits. Outputs: state classification.

ANALYSIS / LIFECYCLE

WATER participates as a manifestation within MJ. It accepts only typed, purpose-bound inputs and produces evidence or outputs within its declared role. Equal family identity does not collapse domain authority or permit peer-to-peer authority transfer.

AUTHORITY AND EVIDENCE

Hard boundary: No authority or value from classification. MJ remains the root permit authority. JO verification, MK physics review, M3 routing, Mermaid accounting, Shiva capital analysis, Angels, Bellatrix, Sister, and EVE remain separate gates when applicable.

APPLICATION POTENTIAL

Potential applications arise wherever WATER's declared role can improve measurement truth, command integrity, evidence quality, containment, representation, allocation, reporting, or governed product development without exceeding the role boundary.

CONSTRAINTS / CONCLUSION

No family identity authorizes physical operation, legal ownership, external financial activity, production deployment, or ethics bypass. Every effect requires the full applicable gateway and evidence path.

CROSS-REFERENCES

FAMILY-MANIFESTATION-REGISTER.json (WATER); family White Paper; authority graph; official documentation manifest; Blue Page BP-FAM-021.

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object JP_CAPO?

RULE / DEFINITION

Object role: Canonical math, algorithm, topology, or architecture representation. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of canonical math, algorithm, topology, or architecture representation, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (JP_CAPO); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-001.

MK_PHYSICS_CAPO - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object MK_PHYSICS_CAPO?

RULE / DEFINITION

Object role: Physics applicability, quantities, units, boundaries, equations, uncertainty, and evidence. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of physics applicability, quantities, units, boundaries, equations, uncertainty, and evidence, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (MK_PHYSICS_CAPO); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-002.

JO_PROOF_RECEIPT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object JO_PROOF_RECEIPT?

RULE / DEFINITION

Object role: Executed verification result. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of executed verification result, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (JO_PROOF_RECEIPT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-003.

MJ_PERMIT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object MJ_PERMIT?

RULE / DEFINITION

Object role: Bounded permit decision issued only by MJ. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of bounded permit decision issued only by mj, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (MJ_PERMIT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-004.

EVE_OBSERVATION - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object EVE_OBSERVATION?

RULE / DEFINITION

Object role: Variance, screen, capture, egress, or residual evidence. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of variance, screen, capture, egress, or residual evidence, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (EVE_OBSERVATION); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-005.

M3_ROUTE_RECEIPT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object M3_ROUTE_RECEIPT?

RULE / DEFINITION

Object role: Bounded routing and resource-use receipt. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of bounded routing and resource-use receipt, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (M3_ROUTE_RECEIPT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-006.

MERMAID_ACCOUNT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object MERMAID_ACCOUNT?

RULE / DEFINITION

Object role: Accounting, custody, exposure, tax, and reconciliation record. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of accounting, custody, exposure, tax, and reconciliation record, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (MERMAID_ACCOUNT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-007.

SHIVA_SHELL - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object SHIVA_SHELL?

RULE / DEFINITION

Object role: Governed account envelope for typed financial representations. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of governed account envelope for typed financial representations, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (SHIVA_SHELL); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-008.

SHIVAS_INTERNAL_REFLECTION - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object SHIVAS_INTERNAL_REFLECTION?

RULE / DEFINITION

Object role: Internal non-transferable capital-reflection object. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of internal non-transferable capital-reflection object, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (SHIVAS_INTERNAL_REFLECTION); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-009.

CHI_VARIANCE_OBJECT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object CHI_VARIANCE_OBJECT?

RULE / DEFINITION

Object role: Temporal difference object. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of temporal difference object, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (CHI_VARIANCE_OBJECT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-010.

WATER_INTERVAL_STATE - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object WATER_INTERVAL_STATE?

RULE / DEFINITION

Object role: Uncertainty interval state. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of uncertainty interval state, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (WATER_INTERVAL_STATE); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-011.

PASSKEY_PUBLIC_RECEIPT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object PASSKEY_PUBLIC_RECEIPT?

RULE / DEFINITION

Object role: Public verification of founder signature over a bounded content root. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of public verification of founder signature over a bounded content root, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (PASSKEY_PUBLIC_RECEIPT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-012.

PEARL_VARIANCE_CONTAINER - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object PEARL_VARIANCE_CONTAINER?

RULE / DEFINITION

Object role: Legacy stable ID for a pearl-shaped hypothetical simulation and information-retention object; never a physical container. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of legacy stable id for a pearl-shaped hypothetical simulation and information-retention object; never a physical container, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (PEARL_VARIANCE_CONTAINER); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-013.

PEARL_ALLOCATION_RECEIPT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object PEARL_ALLOCATION_RECEIPT?

RULE / DEFINITION

Object role: M3/JO receipt for simulated Pearl allocation, scenario capacity, source, destination, and lifecycle state; no physical effect. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of m3/jo receipt for simulated pearl allocation, scenario capacity, source, destination, and lifecycle state; no physical effect, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (PEARL_ALLOCATION_RECEIPT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-014.

PEARL_ACOUSTIC_PROFILE - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object PEARL_ACOUSTIC_PROFILE?

RULE / DEFINITION

Object role: Hypothetical acoustic simulation profile with declared frequency, medium, observability, uncertainty, and no physical cohesion claim. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of hypothetical acoustic simulation profile with declared frequency, medium, observability, uncertainty, and no physical cohesion claim, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (PEARL_ACOUSTIC_PROFILE); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-015.

PEARL_SYMPOSIUM_REGISTRY - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object PEARL_SYMPOSIUM_REGISTRY?

RULE / DEFINITION

Object role: Mermaid/Shiva record of Pearl simulation scenarios, quantities, costs, implications, and regeneration opportunities under MJ. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of mermaid/shiva record of pearl simulation scenarios, quantities, costs, implications, and regeneration opportunities under mj, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (PEARL_SYMPOSIUM_REGISTRY); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-016.

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object Bangel _SHEET?

RULE / DEFINITION

Object role: Governed spreadsheet-like workbook with immutable revisions, typed cells, dependency graph, and authority scopes. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of governed spreadsheet-like workbook with immutable revisions, typed cells, dependency graph, and authority scopes, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (Bangel _SHEET); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-017.

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object Bangel _SHEET_CELL?

RULE / DEFINITION

Object role: Typed measurement cell with value, unit, uncertainty, formula, evidence, lineage, and revision. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of typed measurement cell with value, unit, uncertainty, formula, evidence, lineage, and revision, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (Bangel _SHEET_CELL); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-018.

Bangel _SHEET_REVISION - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object Bangel _SHEET_REVISION?

RULE / DEFINITION

Object role: Content-addressed immutable workbook revision and conflict/merge evidence. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of content-addressed immutable workbook revision and conflict/merge evidence, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (Bangel _SHEET_REVISION); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-019.

Bangel _SHEET_AUDIT_PARTICLE - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object Bangel _SHEET_AUDIT_PARTICLE?

RULE / DEFINITION

Object role: Complete audit record for critical spreadsheet edits, formulas, recomputation, and reports. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of complete audit record for critical spreadsheet edits, formulas, recomputation, and reports, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (Bangel _SHEET_AUDIT_PARTICLE); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-020.

JPOSMJ_PRODUCT_ENVELOPE - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object JPOSMJ_PRODUCT_ENVELOPE?

RULE / DEFINITION

Object role: Portfolio envelope binding JP-origin product logic through MK physics, JO proof, and MJ permit. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of portfolio envelope binding jp-origin product logic through mk physics, jo proof, and mj permit, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (JPOSMJ_PRODUCT_ENVELOPE); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-021.

SISTER_PHYSICAL_CONTAINMENT_PROFILE - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object SISTER_PHYSICAL_CONTAINMENT_PROFILE?

RULE / DEFINITION

Object role: Pre-Pearl physical umbrella/descent/containment profile with normalized topology and profile-specific unknown physical size/capacity. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of pre-pearl physical umbrella/descent/containment profile with normalized topology and profile-specific unknown physical size/capacity, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (SISTER_PHYSICAL_CONTAINMENT_PROFILE); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-022.

STANDARD_CONTAINMENT_GEOMETRY_PROFILE - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object STANDARD_CONTAINMENT_GEOMETRY_PROFILE?

RULE / DEFINITION

Object role: Typed scale-independent rectangle/cone/umbrella/descent/EVE/reservoir geometry and modification parameters.
Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of typed scale-independent rectangle/cone/umbrella/descent/eve/reservoir geometry and modification parameters, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (STANDARD_CONTAINMENT_GEOMETRY_PROFILE); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-023.

REFERENCE_GAS_PROFILE_H2 - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object REFERENCE_GAS_PROFILE_H2?

RULE / DEFINITION

Object role: H2 equation/reference profile for density, equivalent volume, observed gas height, and motion calculations; no physical use authority. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of h2 equation/reference profile for density, equivalent volume, observed gas height, and motion calculations; no physical use authority, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (REFERENCE_GAS_PROFILE_H2); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-024.

CONTAINMENT_MODIFICATION_RECEIPT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object CONTAINMENT_MODIFICATION_RECEIPT?

RULE / DEFINITION

Object role: Recalculation and revalidation receipt for command/profile-specific geometry changes. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of recalculation and revalidation receipt for command/profile-specific geometry changes, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (CONTAINMENT_MODIFICATION_RECEIPT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-025.

CONE_TOP_PEARL_ANCHOR - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object CONE_TOP_PEARL_ANCHOR?

RULE / DEFINITION

Object role: Hypothetical information coordinate at the top-of-cone observation plane; no physical placement. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of hypothetical information coordinate at the top-of-cone observation plane; no physical placement, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (CONE_TOP_PEARL_ANCHOR); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-026.

GAS_HEIGHT_OBSERVATION - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object GAS_HEIGHT_OBSERVATION?

RULE / DEFINITION

Object role: Calibrated pressure/temperature/density/height/time observation for gas-front reference calculations. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of calibrated pressure/temperature/density/height/time observation for gas-front reference calculations, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (GAS_HEIGHT_OBSERVATION); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-027.

RESERVOIR_RETURN_LOOP_PROFILE - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object RESERVOIR_RETURN_LOOP_PROFILE?

RULE / DEFINITION

Object role: Typed rear outlet, external reservoir, and circular reentry geometry/profile.. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of typed rear outlet, external reservoir, and circular reentry geometry/profile., deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (RESERVOIR_RETURN_LOOP_PROFILE); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-028.

OUTWARD_GAP_PATH_RECEIPT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object OUTWARD_GAP_PATH_RECEIPT?

RULE / DEFINITION

Object role: JO/MK proof that the outlet path remains outside the nonphysical Pearl reference circle.. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of jo/mk proof that the outlet path remains outside the nonphysical pearl reference circle., deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (OUTWARD_GAP_PATH_RECEIPT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-029.

RESERVOIR_BUFFER_ACCOUNT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object RESERVOIR_BUFFER_ACCOUNT?

RULE / DEFINITION

Object role: EVE/Mermaid typed balance of admitted, returned, drained, escaped, and retained quantities.. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of eve/mermaid typed balance of admitted, returned, drained, escaped, and retained quantities., deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (RESERVOIR_BUFFER_ACCOUNT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-030.

CIRCULAR_REENTRY_RECEIPT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object CIRCULAR_REENTRY_RECEIPT?

RULE / DEFINITION

Object role: Circular port, inward angle, tangential component, continuity, and spiral-compatibility evidence.. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of circular port, inward angle, tangential component, continuity, and spiral-compatibility evidence., deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (CIRCULAR_REENTRY_RECEIPT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-031.

RELATIVE_FRAME_FRICTION_LEDGER - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object RELATIVE_FRAME_FRICTION_LEDGER?

RULE / DEFINITION

Object role: MK/JO/Mermaid record of frame-relative velocity, dissipation, and any bounded recoverable-energy claim.. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of mk/jo/mermaid record of frame-relative velocity, dissipation, and any bounded recoverable-energy claim., deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (RELATIVE_FRAME_FRICTION_LEDGER); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-032.

RESERVOIR_LAKE_BUFFER - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object RESERVOIR_LAKE_BUFFER?

RULE / DEFINITION

Object role: Bounded post-containment buffer candidate for retention, redistribution, and receipted re-entry. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of bounded post-containment buffer candidate for retention, redistribution, and receipted re-entry, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (RESERVOIR_LAKE_BUFFER); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-033.

BACKSIDE_OUTLET_PORT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object BACKSIDE_OUTLET_PORT?

RULE / DEFINITION

Object role: High backside outlet candidate located below containment maximum height. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of high backside outlet candidate located below containment maximum height, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (BACKSIDE_OUTLET_PORT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-034.

OUTWARD_GAP_ARC - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object OUTWARD_GAP_ARC?

RULE / DEFINITION

Object role: Outward-facing angular reference through which the outlet clears the nonphysical Pearl reference circle. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of outward-facing angular reference through which the outlet clears the nonphysical pearl reference circle, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (OUTWARD_GAP_ARC); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-035.

PEARL_REFERENCE_CIRCLE - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object PEARL_REFERENCE_CIRCLE?

RULE / DEFINITION

Object role: Hypothetical simulation/measurement circle used for path-clearance calculations; no physical wall or capacity. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of hypothetical simulation/measurement circle used for path-clearance calculations; no physical wall or capacity, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (PEARL_REFERENCE_CIRCLE); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-036.

CIRCULAR_REENTRY_PORT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object CIRCULAR_REENTRY_PORT?

RULE / DEFINITION

Object role: Circular inward-angled port candidate supplying measured radial and tangential re-entry components. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of circular inward-angled port candidate supplying measured radial and tangential re-entry components, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (CIRCULAR_REENTRY_PORT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-037.

RESERVOIR_TRANSFER_RECEIPT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object RESERVOIR_TRANSFER_RECEIPT?

RULE / DEFINITION

Object role: Per-transaction outlet/lake/re-entry/cycle/participant evidence receipt. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of per-transaction outlet/lake/re-entry/cycle/participant evidence receipt, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (RESERVOIR_TRANSFER_RECEIPT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-038.

PERSPECTIVE_FRICTION_RECEIPT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object PERSPECTIVE_FRICTION_RECEIPT?

RULE / DEFINITION

Object role: Separates coordinate-transform residual, physical dissipation, and information friction. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of separates coordinate-transform residual, physical dissipation, and information friction, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (PERSPECTIVE_FRICTION_RECEIPT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-039.

DRO_UNIT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object DRO_UNIT?

RULE / DEFINITION

Object role: Typed unit of retained element or variance observation. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of typed unit of retained element or variance observation, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (DRO_UNIT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-040.

DRO_SCALE_ENVELOPE - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object DRO_SCALE_ENVELOPE?

RULE / DEFINITION

Object role: Founder-declared scale markers, conservative threshold, and uncertainty. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of founder-declared scale markers, conservative threshold, and uncertainty, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (DRO_SCALE_ENVELOPE); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-041.

DRO_COLLECTION_RECEIPT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object DRO_COLLECTION_RECEIPT?

RULE / DEFINITION

Object role: Source, unit, quantity, scale, lineage, state, and evidence receipt. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of source, unit, quantity, scale, lineage, state, and evidence receipt, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (DRO_COLLECTION_RECEIPT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-042.

DRO_OPTICAL_EVIDENCE_PROFILE - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object DRO_OPTICAL_EVIDENCE_PROFILE?

RULE / DEFINITION

Object role: Measured wavelength, frequency, power, coupling, and uncertainty profile. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of measured wavelength, frequency, power, coupling, and uncertainty profile, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (DRO_OPTICAL_EVIDENCE_PROFILE); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-043.

DRO_PEARL_HANDOFF_RECEIPT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object DRO_PEARL_HANDOFF_RECEIPT?

RULE / DEFINITION

Object role: Conservation and allocation record for DRO records entering a Pearl node. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of conservation and allocation record for dro records entering a pearl node, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (DRO_PEARL_HANDOFF_RECEIPT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-044.

PEARL_DRO_NODE - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object PEARL_DRO_NODE?

RULE / DEFINITION

Object role: Computational node for DRO and other typed element representations. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of computational node for dro and other typed element representations, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (PEARL_DRO_NODE); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-045.

DRO_START_ENERGY_PACKET - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object DRO_START_ENERGY_PACKET?

RULE / DEFINITION

Object role: Typed start-energy and restart-reserve account. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of typed start-energy and restart-reserve account, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (DRO_START_ENERGY_PACKET); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-046.

DRO_IGNITION_REQUEST - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object DRO_IGNITION_REQUEST?

RULE / DEFINITION

Object role: Non-operational request object for start-readiness evaluation. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of non-operational request object for start-readiness evaluation, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (DRO_IGNITION_REQUEST); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-047.

LECANTO_IMAGE_EVIDENCE - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object LECANTO_IMAGE_EVIDENCE?

RULE / DEFINITION

Object role: Original image digest, metadata, signal, and source-lineage record. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of original image digest, metadata, signal, and source-lineage record, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (LECANTO_IMAGE_EVIDENCE); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-048.

LECANTO_INTENT_HYPOTHESIS - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object LECANTO_INTENT_HYPOTHESIS?

RULE / DEFINITION

Object role: Bounded image-intent hypothesis with uncertainty and no truth authority. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of bounded image-intent hypothesis with uncertainty and no truth authority, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (LECANTO_INTENT_HYPOTHESIS); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-049.

LECANTO_TRANSFORMATION_RECEIPT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object LECANTO_TRANSFORMATION_RECEIPT?

RULE / DEFINITION

Object role: Source-preserving derivative and disclosure record. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of source-preserving derivative and disclosure record, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (LECANTO_TRANSFORMATION_RECEIPT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-050.

IMAGE_VARIANCE_RECEIPT - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object IMAGE_VARIANCE_RECEIPT?

RULE / DEFINITION

Object role: Spatial, color, spectral, compression, and registration residuals. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of spatial, color, spectral, compression, and registration residuals, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (IMAGE_VARIANCE_RECEIPT); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-051.

SEMICONDUCTOR_DRO_ENERGY_LEDGER - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object SEMICONDUCTOR_DRO_ENERGY_LEDGER?

RULE / DEFINITION

Object role: SC-profile charge, energy, wake, and restart accounting. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of sc-profile charge, energy, wake, and restart accounting, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (SEMICONDUCTOR_DRO_ENERGY_LEDGER); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-052.

SEMICONDUCTOR_PEARL_NODE - Governed Object

Category: GOVERNED OBJECT / CORE LOGIC IDENTITY | Status: Pre-Day-0 internal reference | Evidence ceiling: non-authoritative typed object

ISSUE

How should the framework identify, preserve, and validate the governed object SEMICONDUCTOR_PEARL_NODE?

RULE / DEFINITION

Object role: SC-profile computational Pearl node with memory and evidence limits. Authority flag: False. The object carries typed state, provenance, evidence, and relationships but cannot authorize itself or enlarge its own scope.

ANALYSIS / LIFECYCLE

The object is created or referenced by Bangel and JP, evaluated by MK when physics applies, verified by JO, routed by M3 when a handoff applies, accounted for by Mermaid or Shiva when value applies, and admitted or held by MJ under the applicable manifest and ethics rules.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Potential uses include durable representation of sc-profile computational pearl node with memory and evidence limits, deterministic interface contracts, audit particles, command handoffs, evidence receipts, product configuration, simulation, or recovery workflows.

CONSTRAINTS / CONCLUSION

The object is not a person, permit, patent, physical validation, financial instrument, or autonomous actor. Missing evidence remains unknown or held. Object identity cannot substitute for authority, custody, consent, calibration, or measured reality.

CROSS-REFERENCES

FAMILY-OBJECT-REGISTER.json (SEMICONDUCTOR_PEARL_NODE); applicable schemas and pathways; object references in Pink Paper and product/family White Papers; Blue Page BP-OBJ-053.

MJ Physics Based Measurement Engineering Framework - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: DAY0_PREPASSKEY_COMPLETE_CANDIDATE

ISSUE

What problem and bounded development opportunity are represented by PBMEF-CORE?

RULE / DEFINITION

Purpose: Integrate purpose, mathematics, physics, verification, safety, resource routing, accounting, finance, evidence, and bounded permit decisions. Class: CORE_FRAMEWORK. Parent: MJ. Current status: DAY0_PREPASSKEY_COMPLETE_CANDIDATE.

ANALYSIS / LIFECYCLE

The product must enter through human purpose, Bangel typing, Elsa semantic recovery, JP architecture, MK physics classification when applicable, JO verification, applicable family evidence, M3 routing, Mermaid/Shiva analysis when applicable, MJ decision, and JO evidence. Profile-specific values and tests cannot be inherited from another product without a receipt.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Application potential is limited to the purpose stated above and to design, simulation, reference implementation, evidence, or later product development supported by the product status. The product may be scaled only by recalculating its types, units, capacity, environment, uncertainty, and safety boundary.

CONSTRAINTS / CONCLUSION

No product brief authorizes manufacturing, energization, operation, deployment, certification, launch, vessel use, financial service, or external claim. All physical and regulated lanes remain on hold unless separately evidenced and permitted.

CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (PBMEF-CORE); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-001.

Bangel

Governed Measurement Language - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: SPECIFICATION_CANDIDATE

ISSUE

What problem and bounded development opportunity are represented by Bangel -LANGUAGE?

RULE / DEFINITION

Purpose: Express human purpose, typed measurements, formulas, evidence, and command pathways. Class: LANGUAGE. Parent: MJ. Current status: SPECIFICATION_CANDIDATE.

ANALYSIS / LIFECYCLE

The product must enter through human purpose, Bangel typing, Elsa semantic recovery, JP architecture, MK physics classification when applicable, JO verification, applicable family evidence, M3 routing, Mermaid/Shiva analysis when applicable, MJ decision, and JO evidence. Profile-specific values and tests cannot be inherited from another product without a receipt.

AUTHORITY AND EVIDENCE

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CONSTRAINTS / CONCLUSION

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (Bangel -LANGUAGE); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-002.

Elsa Deterministic Semantic Recovery - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: SPECIFICATION_CANDIDATE

ISSUE

What problem and bounded development opportunity are represented by ELSA-SEMANTICS?

RULE / DEFINITION

Purpose: Recover and preserve declared meaning without autonomous inference or authority. Class: SEMANTIC_SYSTEM. Parent: MJ. Current status: SPECIFICATION_CANDIDATE.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (ELSA-SEMANTICS); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-003.

JP Mathematical and Architectural Canon - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: SPECIFICATION_CANDIDATE

ISSUE

What problem and bounded development opportunity are represented by JP-CANON?

RULE / DEFINITION

Purpose: Represent equations, algorithms, CAPOs, topology, products, and proofs. Class: CANONICAL_REPRESENTATION. Parent: MJ. Current status: SPECIFICATION_CANDIDATE.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (JP-CANON); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-004.

Mika/MK Physics Modulator System - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: REFERENCE_IMPLEMENTATION

ISSUE

What problem and bounded development opportunity are represented by MK-PHYSICS?

RULE / DEFINITION

Purpose: Create physics representations and verify units, conservation, boundaries, scale, and evidence ceilings. Class: PHYSICS_SYSTEM. Parent: MJ. Current status: REFERENCE_IMPLEMENTATION.

ANALYSIS / LIFECYCLE

The product must enter through human purpose, Bangel typing, Elsa semantic recovery, JP architecture, MK physics classification when applicable, JO verification, applicable family evidence, M3 routing, Mermaid/Shiva analysis when applicable, MJ decision, and JO evidence. Profile-specific values and tests cannot be inherited from another product without a receipt.

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (MK-PHYSICS); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-005.

JO Deterministic Proof and Runtime - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: REFERENCE_IMPLEMENTATION

ISSUE

What problem and bounded development opportunity are represented by JO-RUNTIME?

RULE / DEFINITION

Purpose: Verify types, units, authority, physics, tests, evidence, and bounded execution. Class: RUNTIME. Parent: MJ. Current status: REFERENCE_IMPLEMENTATION.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (JO-RUNTIME); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-006.

MJOS Operating Substrate - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: SPECIFICATION_CANDIDATE

ISSUE

What problem and bounded development opportunity are represented by MJOS-SUBSTRATE?

RULE / DEFINITION

Purpose: Provide isolated resources, memory, storage, network, scheduling, and continuity under MJ leases. Class: OPERATING_SYSTEM. Parent: MJ. Current status: SPECIFICATION_CANDIDATE.

ANALYSIS / LIFECYCLE

The product must enter through human purpose, Bangel typing, Elsa semantic recovery, JP architecture, MK physics classification when applicable, JO verification, applicable family evidence, M3 routing, Mermaid/Shiva analysis when applicable, MJ decision, and JO evidence. Profile-specific values and tests cannot be inherited from another product without a receipt.

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (MJOS-SUBSTRATE); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-007.

JP Semiconductor Phone Battery and OS Candidate - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: PLANNED_ONLY_NO_PHYSICAL_ARTICLE

ISSUE

What problem and bounded development opportunity are represented by JP-SC-PHONE?

RULE / DEFINITION

Purpose: Explore semiconductor-scale static intake, power wake, solar assist, battery, and operating-system integration. Class: PHYSICAL_PRODUCT_CANDIDATE. Parent: JP. Current status: PLANNED_ONLY_NO_PHYSICAL_ARTICLE.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (JP-SC-PHONE); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-008.

JP Large-Scale Boating Power Candidate - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: PLANNED_ONLY_UNCLASSIFIED

ISSUE

What problem and bounded development opportunity are represented by JP-LS-BOAT?

RULE / DEFINITION

Purpose: Explore large-scale static intake, solar initiation, power bus, containment, and marine power integration. Class: PHYSICAL_PRODUCT_CANDIDATE. Parent: JP. Current status: PLANNED_ONLY_UNCLASSIFIED.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (JP-LS-BOAT); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-009.

JP Peaceful High-Energy Propulsion Research Candidate - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: PLANNED_ONLY_SAFETY_HOLD

ISSUE

What problem and bounded development opportunity are represented by JP-PEACEFUL-PROPULSION?

RULE / DEFINITION

Purpose: Explore peaceful propulsion measurement and control under non-weaponization, safety, and regulatory gates. Class: HIGH_RISK_PHYSICAL_RESEARCH_CANDIDATE. Parent: JP. Current status: PLANNED_ONLY_SAFETY_HOLD.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (JP-PEACEFUL-PROPULSION); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-010.

Sister Predictive Containment System - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: SPECIFICATION_CANDIDATE

ISSUE

What problem and bounded development opportunity are represented by SISTER-CONTAINMENT?

RULE / DEFINITION

Purpose: Predict demand, allocate buffers, detect anomalies, and stage overflow in bounded umbrellas. Class: PREDICTION_AND_CONTAINMENT. Parent: MJ. Current status: SPECIFICATION_CANDIDATE.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (SISTER-CONTAINMENT); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-011.

EVE Variance Screen and Egress Accounting - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: SPECIFICATION_CANDIDATE

ISSUE

What problem and bounded development opportunity are represented by EVE-SCREEN?

RULE / DEFINITION

Purpose: Account for variance, evaporation, leakage, capture, and natural egress without silent loss. Class: MEASUREMENT_SYSTEM.
Parent: MJ. Current status: SPECIFICATION_CANDIDATE.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (EVE-SCREEN); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-012.

Angels Safety and Corrective Command System - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: SPECIFICATION_CANDIDATE

ISSUE

What problem and bounded development opportunity are represented by ANGELS-SAFETY?

RULE / DEFINITION

Purpose: Provide domain-bounded telemetry, hold, denial, isolation, and corrective protocols. Class: SAFETY_SYSTEM. Parent: MJ. Current status: SPECIFICATION_CANDIDATE.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (ANGELS-SAFETY); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-013.

Mermaid Accounting and Reconciliation System - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: SPECIFICATION_CANDIDATE

ISSUE

What problem and bounded development opportunity are represented by MERMAID-RECON?

RULE / DEFINITION

Purpose: Maintain balances, custody evidence, exposure, tax lots, statements, and reconciliation. Class: ACCOUNTING_SYSTEM.
Parent: MJ. Current status: SPECIFICATION_CANDIDATE.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (MERMAID-RECON); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-014.

Shiva Dual Financial Rails - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: INTERNAL_MODEL_EXTERNAL_DISABLED

ISSUE

What problem and bounded development opportunity are represented by SHIVA-RAILS?

RULE / DEFINITION

Purpose: Separate stability/cash functions from investment and crypto risk while preserving liquidity-first ethics. Class: FINANCIAL_REFERENCE_SYSTEM. Parent: MJ. Current status: INTERNAL_MODEL_EXTERNAL_DISABLED.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (SHIVA-RAILS); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-015.

SHIVAS Internal Settlement Reflection - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: NONTRANSFERABLE_NO_MONETARY_VALUE

ISSUE

What problem and bounded development opportunity are represented by SHIVAS-INTERNAL?

RULE / DEFINITION

Purpose: Represent internal capital reflections without minting, redemption, public offer, or value guarantee. Class: CAPITAL_REFLECTION_OBJECT. Parent: SHIVA. Current status: NONTRANSFERABLE_NO_MONETARY_VALUE.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (SHIVAS-INTERNAL); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-016.

Shiva Crypto External-Market Candidate - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: DISABLED_ACTIVE_HOLD

ISSUE

What problem and bounded development opportunity are represented by SHIVA-CRYPTO?

RULE / DEFINITION

Purpose: Model a separately governed external crypto rail subject to full classification and authorization. Class: EXTERNAL_FINANCIAL_CANDIDATE. Parent: SHIVA. Current status: DISABLED_ACTIVE_HOLD.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (SHIVA-CRYPTO); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-017.

Shiva Exchange Rule Reference - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: INTERNAL_SIMULATION_ONLY

ISSUE

What problem and bounded development opportunity are represented by SHIVA-EXCHANGE?

RULE / DEFINITION

Purpose: Model transparent price-time, custody, audit, tax, and transfer rules without operating a market. Class: MARKET_REFERENCE_MODEL. Parent: SHIVA. Current status: INTERNAL_SIMULATION_ONLY.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (SHIVA-EXCHANGE); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-018.

Moana Governed Browser - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: REFERENCE_CANDIDATE

ISSUE

What problem and bounded development opportunity are represented by MOANA-BROWSER?

RULE / DEFINITION

Purpose: Present governed applications, evidence, holds, and uncertainty. Class: APPLICATION_PRODUCT. Parent: MJ. Current status: REFERENCE_CANDIDATE.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (MOANA-BROWSER); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-019.

Aviator Organizational Workspace - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: REFERENCE_CANDIDATE

ISSUE

What problem and bounded development opportunity are represented by AVIATOR-WORKSPACE?

RULE / DEFINITION

Purpose: Organize spaces, projects, decisions, knowledge, members, roles, and capabilities. Class: APPLICATION_PRODUCT. Parent: MJ. Current status: REFERENCE_CANDIDATE.

ANALYSIS / LIFECYCLE

The product must enter through human purpose, Bangel typing, Elsa semantic recovery, JP architecture, MK physics classification when applicable, JO verification, applicable family evidence, M3 routing, Mermaid/Shiva analysis when applicable, MJ decision, and JO evidence. Profile-specific values and tests cannot be inherited from another product without a receipt.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

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CONSTRAINTS / CONCLUSION

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (AVIATOR-WORKSPACE); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-020.

Lecanto Truthful Visualization - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: REFERENCE_CANDIDATE

ISSUE

What problem and bounded development opportunity are represented by LECANTO-VISUAL?

RULE / DEFINITION

Purpose: Display system truth, provenance, topology, uncertainty, and evidence. Class: VISUAL_SYSTEM. Parent: MJ. Current status: REFERENCE_CANDIDATE.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (LECANTO-VISUAL); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-021.

Elsa Governed Marketplace Reference - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: INTERNAL_REFERENCE_ONLY

ISSUE

What problem and bounded development opportunity are represented by ELSA-MARKETPLACE?

RULE / DEFINITION

Purpose: Coordinate semantic listings, workflow, accounting, execution, and resource evidence without live market authority. Class: MARKETPLACE_REFERENCE. Parent: MJ. Current status: INTERNAL_REFERENCE_ONLY.

ANALYSIS / LIFECYCLE

The product must enter through human purpose, Bangel typing, Elsa semantic recovery, JP architecture, MK physics classification when applicable, JO verification, applicable family evidence, M3 routing, Mermaid/Shiva analysis when applicable, MJ decision, and JO evidence. Profile-specific values and tests cannot be inherited from another product without a receipt.

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (ELSA-MARKETPLACE); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-022.

Shekina Distributed Continuity - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: SPECIFICATION_CANDIDATE

ISSUE

What problem and bounded development opportunity are represented by SHEKINA-CONTINUITY?

RULE / DEFINITION

Purpose: Model bounded replicas, failover, continuity, and placement evidence. Class: INFRASTRUCTURE_REFERENCE. Parent: MJ. Current status: SPECIFICATION_CANDIDATE.

ANALYSIS / LIFECYCLE

The product must enter through human purpose, Bangel typing, Elsa semantic recovery, JP architecture, MK physics classification when applicable, JO verification, applicable family evidence, M3 routing, Mermaid/Shiva analysis when applicable, MJ decision, and JO evidence. Profile-specific values and tests cannot be inherited from another product without a receipt.

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (SHEKINA-CONTINUITY); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-023.

Pearl Hypothetical Simulation and Information-Retention System - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: REFERENCE_SIMULATION_ONLY_PHYSICAL_NOT_APPLICABLE

ISSUE

What problem and bounded development opportunity are represented by PEARL-CONTAINMENT?

RULE / DEFINITION

Purpose: Acquire, retain, replay, and compare variance simulations and transfer/regeneration opportunities without asserting physical containment. Class: HYPOTHETICAL_SIMULATION_AND_INFORMATION_RETENTION. Parent: MJ. Current status: REFERENCE_SIMULATION_ONLY_PHYSICAL_NOT_APPLICABLE.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (PEARL-CONTAINMENT); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-024.

Bangel

Spreadsheets - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: REFERENCE_MVP_PREPASSKEY

ISSUE

What problem and bounded development opportunity are represented by Bangel -SPREADSHEETS?

RULE / DEFINITION

Purpose: Provide governed spreadsheet-like operational modeling through typed measurement cells, immutable revisions, Pearl simulation partitions, deterministic recalculation, concurrency control, and audit evidence. Class: MEASUREMENT_SPREADSHEET_PLATFORM. Parent: Bangel . Current status: REFERENCE_MVP_PREPASSKEY.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (Bangel -SPREADSHEETS); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-025.

JPOSMJ Product Portfolio Envelope - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: PREPASSKEY_PORTFOLIO_ENVELOPE

ISSUE

What problem and bounded development opportunity are represented by JPOSMJ-PORTFOLIO?

RULE / DEFINITION

Purpose: Bind every JP-origin product candidate through MK physics representation, JO verification, participant evidence, and MJ bounded permit classification. Class: PRODUCT_FAMILY_ENVELOPE. Parent: JP. Current status: PREPASSKEY_PORTFOLIO_ENVELOPE.

ANALYSIS / LIFECYCLE

The product must enter through human purpose, Bangel typing, Elsa semantic recovery, JP architecture, MK physics classification when applicable, JO verification, applicable family evidence, M3 routing, Mermaid/Shiva analysis when applicable, MJ decision, and JO evidence. Profile-specific values and tests cannot be inherited from another product without a receipt.

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (JPOSMJ-PORTFOLIO); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-026.

MJ Standard Containment Geometry and Reference Gas Model - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: REFERENCE_MVP_PHYSICAL_VALUES_HOLD

ISSUE

What problem and bounded development opportunity are represented by STANDARD-CONTAINMENT-GEOMETRY?

RULE / DEFINITION

Purpose: Provide a scale-independent rectangle/cone/Sister/EVE/reservoir calculation standard and H2 reference-gas observation profile. Class: PHYSICS_REFERENCE_SYSTEM. Parent: MJ. Current status: REFERENCE_MVP_PHYSICAL_VALUES_HOLD.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (STANDARD-CONTAINMENT-GEOMETRY); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-027.

MJ Reservoir Collection, Lake Buffer, and Spiral-Compatible Re-entry - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: REFERENCE_MVP_PHYSICAL_VALUES_HOLD

ISSUE

What problem and bounded development opportunity are represented by RESERVOIR-COLLECTION-MODULATION?

RULE / DEFINITION

Purpose: Model the rear reservoir loop, exterior outlet, lake-like buffer, circular inward/tangential re-entry, wave/friction references, adaptive sizing, and full Sister/EVE/Angel/M3/MK/JO/Mermaid/Shiva/MJ transaction path. Class: PHYSICS_REFERENCE_SYSTEM.
Parent: MJ. Current status: REFERENCE_MVP_PHYSICAL_VALUES_HOLD.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (RESERVOIR-COLLECTION-MODULATION); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-028.

MJOS Solar Shared-Core Architecture - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: DESIGN_TRACE_SPECIFICATION_FROZEN_PHYSICAL_HOLD

ISSUE

What problem and bounded development opportunity are represented by MJOS-SOLAR-CORE-001?

RULE / DEFINITION

Purpose: Provide the common JP-origin governed solar and energy-management architecture shared by the phone, marine, and peaceful rocket/spacecraft profiles. Class: SHARED_SOLAR_ARCHITECTURE. Parent: MJ. Current status: DESIGN_TRACE_SPECIFICATION_FROZEN_PHYSICAL_HOLD.

ANALYSIS / LIFECYCLE

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AUTHORITY AND EVIDENCE

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CONSTRAINTS / CONCLUSION

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (MJOS-SOLAR-CORE-001); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-029.

MJOS Solar Semiconductor Phone Battery and OS Profile - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: DESIGN_TRACE_SPECIFICATION_FROZEN_PLANNED_ONLY_NO_PHYSICAL_ARTICLE

ISSUE

What problem and bounded development opportunity are represented by MJOS-SOLAR-SEMI-PHONE-001?

RULE / DEFINITION

Purpose: Provide solar-assisted phone battery and operating-system power integration with governed energy intake, battery/thermal observation, reserve allocation, workload-aware coordination, provenance, and measurable accounting. Class: SOLAR_PROFILE_SEMICONDUCTOR_PHONE. Parent: MJ. Current status: DESIGN_TRACE_SPECIFICATION_FROZEN_PLANNED_ONLY_NO_PHYSICAL_ARTICLE.

ANALYSIS / LIFECYCLE

The product must enter through human purpose, Bangel typing, Elsa semantic recovery, JP architecture, MK physics classification when applicable, JO verification, applicable family evidence, M3 routing, Mermaid/Shiva analysis when applicable, MJ decision, and JO evidence. Profile-specific values and tests cannot be inherited from another product without a receipt.

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (MJOS-SOLAR-SEMI-PHONE-001); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-030.

MJOS Solar-Assisted Marine Power and Propulsion Profile - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling:
DESIGN_TRACE_SPECIFICATION_FROZEN_UNCLASSIFIED_NO_PHYSICAL_ARTICLE

ISSUE

What problem and bounded development opportunity are represented by MJOS-SOLAR-MARINE-001?

RULE / DEFINITION

Purpose: Provide solar-assisted marine energy intake, storage, propulsion-load coordination, conversion/recovery, thermal management, reserve protection, operating-system control, telemetry, and evidence-backed state transitions. Class: SOLAR_PROFILE_MARINE. Parent: MJ. Current status: DESIGN_TRACE_SPECIFICATION_FROZEN_UNCLASSIFIED_NO_PHYSICAL_ARTICLE.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (MJOS-SOLAR-MARINE-001); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-031.

MJOS Peaceful Solar-Assisted Rocket/Spacecraft Power and OS Profile - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: DESIGN_TRACE_SPECIFICATION_FROZEN_PEACEFUL_RESEARCH_ONLY_SAFETY_HOLD

ISSUE

What problem and bounded development opportunity are represented by MJOS-SOLAR-ROCKET-001?

RULE / DEFINITION

Purpose: Provide a non-weaponized reference architecture for solar-assisted avionics/electrical reserve, propulsion-state coordination, thermal/battery management, authenticated startup/shutdown, telemetry, fault isolation, and emergency-state control. Class: SOLAR_PROFILE_PEACEFUL_ROCKET_SPACECRAFT. Parent: MJ. Current status: DESIGN_TRACE_SPECIFICATION_FROZEN_PEACEFUL_RESEARCH_ONLY_SAFETY_HOLD.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (MJOS-SOLAR-ROCKET-001); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-032.

DRO Discrete Retention and Element-Collection Reference System - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: REFERENCE_CANDIDATE_SIMULATION_AND_MEASUREMENT_ONLY

ISSUE

What problem and bounded development opportunity are represented by DRO-COLLECTION-001?

RULE / DEFINITION

Purpose: Represent typed collection, scale, unit, state, lineage, and conservation for elements or variance observations. Class: MEASUREMENT_AND_COLLECTION_REFERENCE. Parent: MJ. Current status: REFERENCE_CANDIDATE_SIMULATION_AND_MEASUREMENT_ONLY.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (DRO-COLLECTION-001); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-033.

DRO-to-Pearl Computational Node Handoff - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: SIMULATION_AND_INFORMATION_RETENTION_ONLY

ISSUE

What problem and bounded development opportunity are represented by DRO-PEARL-HANDOFF-001?

RULE / DEFINITION

Purpose: Allocate DRO records into Pearl computational nodes while preserving typed capacity and receipts. Class: COMPUTATIONAL_CONTAINMENT_AND_ACCOUNTING. Parent: MJ. Current status: SIMULATION_AND_INFORMATION_RETENTION_ONLY.

ANALYSIS / LIFECYCLE

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (DRO-PEARL-HANDOFF-001); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-034.

DRO Start-Energy and Restart-Reserve Reference System - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: NON_OPERATIONAL_REFERENCE_ACTIVE_HOLD

ISSUE

What problem and bounded development opportunity are represented by DRO-IGNITION-REFERENCE-001?

RULE / DEFINITION

Purpose: Represent source, start-energy, restart-reserve, conversion, and permit gates without authorizing ignition hardware. Class: NON_OPERATIONAL_ENERGY_START_REFERENCE. Parent: MJ. Current status: NON_OPERATIONAL_REFERENCE_ACTIVE_HOLD.

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CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (DRO-IGNITION-REFERENCE-001); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-035.

Lecanto Image Provenance, Physics, Variance, and Intent-Hypothesis System - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: REFERENCE_CANDIDATE

ISSUE

What problem and bounded development opportunity are represented by LECANTO-IMAGE-TRUTH-001?

RULE / DEFINITION

Purpose: Preserve image source identity, analyze signal variance, label transformations, and create bounded intent hypotheses. Class: VISUAL_EVIDENCE_AND_PROVENANCE. Parent: MJ. Current status: REFERENCE_CANDIDATE.

ANALYSIS / LIFECYCLE

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CONSTRAINTS / CONCLUSION

No product brief authorizes manufacturing, energization, operation, deployment, certification, launch, vessel use, financial service, or external claim. All physical and regulated lanes remain on hold unless separately evidenced and permitted.

CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (LECANTO-IMAGE-TRUTH-001); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-036.

JP Semiconductor DRO and Pearl Computational Integration - Product Brief

Category: PRODUCT MANIFESTATION | Status: Pre-Day-0 internal reference | Evidence ceiling: PLANNED_ONLY_NO_PHYSICAL_ARTICLE

ISSUE

What problem and bounded development opportunity are represented by JP-SC-DRO-PEARL-INTEGRATION-001?

RULE / DEFINITION

Purpose: Integrate DRO energy and measurement accounting with Pearl computational nodes and semiconductor wake/reserve logic. Class: SEMICONDUCTOR_REFERENCE_INTEGRATION. Parent: MJ. Current status: PLANNED_ONLY_NO_PHYSICAL_ARTICLE.

ANALYSIS / LIFECYCLE

The product must enter through human purpose, Bangel typing, Elsa semantic recovery, JP architecture, MK physics classification when applicable, JO verification, applicable family evidence, M3 routing, Mermaid/Shiva analysis when applicable, MJ decision, and JO evidence. Profile-specific values and tests cannot be inherited from another product without a receipt.

AUTHORITY AND EVIDENCE

JP carries the canonical representation; MK classifies physics applicability, units, boundaries, conservation, scale, and uncertainty; JO verifies types, formulas, tests, and receipts; applicable safety and accounting manifestations contribute evidence; MJ alone issues a bounded permit. Mathematical validity does not create physical or operational authority.

APPLICATION POTENTIAL

Application potential is limited to the purpose stated above and to design, simulation, reference implementation, evidence, or later product development supported by the product status. The product may be scaled only by recalculating its types, units, capacity, environment, uncertainty, and safety boundary.

CONSTRAINTS / CONCLUSION

No product brief authorizes manufacturing, energization, operation, deployment, certification, launch, vessel use, financial service, or external claim. All physical and regulated lanes remain on hold unless separately evidenced and permitted.

CROSS-REFERENCES

PROJECT-PRODUCT-REGISTER.json (JP-SC-DRO-PEARL-INTEGRATION-001); product White Paper; formulas and objects referenced by the product; passkey scope; Blue Page BP-PROD-037.