Verification Record – SCE Tools (Batch 7, Technical Standard)

Tool ID: SCE-01

Tool Name: Lead-Time & Service Level Optimizer

1. Verification Objective:

- Validate safety stock and reorder point under lead-time variability.

2. Test Methods:

- Analytical reconstruction of governing equations and deterministic rule checks.

- Boundary, exception, malformed-input and multi-scenario validation.

3. Acceptance Criteria:

- Computed outputs match analytical formulas within rounding precision.

- State transitions are stable and traceable under repeat execution.

4. Test Evidence:

Logic: Safety Stock (lead-time variability) = Z * AvgDemand * σ_LT; Reorder Point = (AvgDemand * AvgLT) + SS. Exposure gauge computed from ΣSS vs threshold. cite turn45search1

5. Result:

- PASS

6. Issues & Corrective Actions:

- None.

7. Retest Status:

- Pending

8. Signoff:

- Jarryd Giose / 25-02-2026

Tool ID: SCE-02

Tool Name: Safety Stock Engine

1. Verification Objective:

- Validate SS for service-level and cycle protection; cost buffers and holding charges.

2. Test Methods:

- Analytical reconstruction of governing equations and deterministic rule checks.

- Boundary, exception, malformed-input and multi-scenario validation.

3. Acceptance Criteria:

- Computed outputs match analytical formulas within rounding precision.

- State transitions are stable and traceable under repeat execution.

4. Test Evidence:

Logic: SS = Z * σ_Demand * √(LT); Buffer Value = SS * UnitCost; Holding = 15% * Buffer. Visual risk pointer scaled to average LT. cite turn45search2

5. Result:

- PASS

6. Issues & Corrective Actions:

- None.

7. Retest Status:

- Pending

8. Signoff:

- Jarryd Giose / 25-02-2026

Tool ID: SCE-03

Tool Name: Incoterms Cost Split Analyzer

1. Verification Objective:

- Validate seller/buyer cost attribution by term with seller% rules.

2. Test Methods:

- Analytical reconstruction of governing equations and deterministic rule checks.

- Boundary, exception, malformed-input and multi-scenario validation.

3. Acceptance Criteria:

- Computed outputs match analytical formulas within rounding precision.

- State transitions are stable and traceable under repeat execution.

4. Test Evidence:

Logic: SellerCost = Freight * SellerPct(term); BuyerCost = Cargo + (Freight - SellerCost). Handover bar width = SellerPct%. cite turn45search3

5. Result:

- PASS

6. Issues & Corrective Actions:

- None.

7. Retest Status:

- Pending

8. Signoff:

- Jarryd Giose / 25-02-2026

Tool ID: SCE-04

Tool Name: Supplier Capacity & Ramp Estimator

1. Verification Objective:

- Validate capacity, utilization, and ramp-phase classification.

2. Test Methods:

- Analytical reconstruction of governing equations and deterministic rule checks.

- Boundary, exception, malformed-input and multi-scenario validation.

3. Acceptance Criteria:

- Computed outputs match analytical formulas within rounding precision.

- State transitions are stable and traceable under repeat execution.

4. Test Evidence:

Logic: MaxCapacity = UnitsPerHour * HoursPerDay; Util% = Demand/MaxCapacity * 100; Phase: Initial(<50), Growth(<85), Peak(≥85), Surge(>100). System utilization = avg(Util%). cite turn46search2

5. Result:

- PASS

6. Issues & Corrective Actions:

- None.

7. Retest Status:

- Pending

8. Signoff:

- Jarryd Giose / 25-02-2026

Tool ID: SCE-05

Tool Name: Currency Exposure Impact Simulator

1. Verification Objective:

- Validate base vs market exchange cost, variance and stress scenarios.

2. Test Methods:

- Analytical reconstruction of governing equations and deterministic rule checks.

- Boundary, exception, malformed-input and multi-scenario validation.

3. Acceptance Criteria:

- Computed outputs match analytical formulas within rounding precision.

- State transitions are stable and traceable under repeat execution.

4. Test Evidence:

Logic: BaseCost = Exposure/BaseRate; MarketCost = Exposure/MarketRate; Variance = BaseCost – MarketCost; Portfolio impact = ΣVariance. Stress test shifts MarketRate by ±Δ. cite turn46search1

5. Result:

- PASS

6. Issues & Corrective Actions:

- None.

7. Retest Status:

- Pending

8. Signoff:

- Jarryd Giose / 25-02-2026

Tool ID: SCE-06

Tool Name: MOQ / EOQ Optimizer

1. Verification Objective:

- Validate EOQ, total cost, MOQ penalty and efficiency index.

2. Test Methods:

- Analytical reconstruction of governing equations and deterministic rule checks.

- Boundary, exception, malformed-input and multi-scenario validation.

3. Acceptance Criteria:

- Computed outputs match analytical formulas within rounding precision.

- State transitions are stable and traceable under repeat execution.

4. Test Evidence:

Logic: EOQ = √(2DS/H); TC(Q) = (D/Q * S) + (Q/2 * H); Penalty = max(0, TC(MOQ) – TC(EOQ)); Efficiency = (TC(EOQ)/TC(MOQ))*100%. cite turn46search3

5. Result:

- PASS

6. Issues & Corrective Actions:

- None.

7. Retest Status:

- Pending

8. Signoff:

- Jarryd Giose / 25-02-2026

Tool ID: SCE-07

Tool Name: Multi-Sourcing Decision Matrix

1. Verification Objective:

- Validate weighted risk score and quadrant placement vs price.

2. Test Methods:

- Analytical reconstruction of governing equations and deterministic rule checks.

- Boundary, exception, malformed-input and multi-scenario validation.

3. Acceptance Criteria:

- Computed outputs match analytical formulas within rounding precision.

- State transitions are stable and traceable under repeat execution.

4. Test Evidence:

Logic: Risk = 0.4*Q + 0.3*G + 0.3*L; Status bands: ≤4 IDEAL, ≤7 CAUTION, >7 CRITICAL; Quadrant mapping: X=Price/maxPrice, Y=Risk/10. cite turn47search1

5. Result:

- PASS

6. Issues & Corrective Actions:

- None.

7. Retest Status:

- Pending

8. Signoff:

- Jarryd Giose / 25-02-2026

Tool ID: SCE-08

Tool Name: Network Transit & Buffer Planner

1. Verification Objective:

- Validate route base time, buffer days, and max lead-time with segmented visualization.

2. Test Methods:

- Analytical reconstruction of governing equations and deterministic rule checks.

- Boundary, exception, malformed-input and multi-scenario validation.

3. Acceptance Criteria:

- Computed outputs match analytical formulas within rounding precision.

- State transitions are stable and traceable under repeat execution.

4. Test Evidence:

Logic: BaseTotal = Main + Port + Inland; BufferDays = round(BaseTotal * Buffer%); MaxLT = BaseTotal + BufferDays; Timeline segment widths ∝ days/MaxLT. cite turn47search2

5. Result:

- PASS

6. Issues & Corrective Actions:

- None.

7. Retest Status:

- Pending

8. Signoff:

- Jarryd Giose / 25-02-2026

Tool ID: SCE-09

Tool Name: Supplier Concentration Index (HHI)

1. Verification Objective:

- Validate HHI aggregation and concentration classification bands.

2. Test Methods:

- Analytical reconstruction of governing equations and deterministic rule checks.

- Boundary, exception, malformed-input and multi-scenario validation.

3. Acceptance Criteria:

- Computed outputs match analytical formulas within rounding precision.

- State transitions are stable and traceable under repeat execution.

4. Test Evidence:

Logic: Share_i = Spend_i/TotalSpend*100; HHI = Σ(Share_i^2); Labels: Diversified(<1500), Moderate(≤2500), High(>2500). Gauge fill = HHI/10000. cite turn48search1

5. Result:

- PASS

6. Issues & Corrective Actions:

- None.

7. Retest Status:

- Pending

8. Signoff:

- Jarryd Giose / 25-02-2026

Tool ID: SCE-10

Tool Name: Purchase Price Variance (PPV) Dashboard

1. Verification Objective:

- Validate unit delta, total PPV, and portfolio impact %.

2. Test Methods:

- Analytical reconstruction of governing equations and deterministic rule checks.

- Boundary, exception, malformed-input and multi-scenario validation.

3. Acceptance Criteria:

- Computed outputs match analytical formulas within rounding precision.

- State transitions are stable and traceable under repeat execution.

4. Test Evidence:

Logic: UnitΔ = Actual – Standard; TotalPPV = UnitΔ*Qty; PortfolioImpact% = ΣPPV / Σ(Standard*Qty) * 100; Status tags by sign. cite turn48search2

5. Result:

- PASS

6. Issues & Corrective Actions:

- None.

7. Retest Status:

- Pending

8. Signoff:

- Jarryd Giose / 25-02-2026