

# PRODUCT WHITEPAPER

*Target: SAP ECC 6.0 | Platinum Edition*

## 1.0 EXECUTIVE SUMMARY

Version: SAP ECC Platinum Edition (v3.0 - Data Verified)

Date: 2026-01-27

Architect: synthetic cfo

Status: FORENSICALLY ACTIVE

### 1.0 EXECUTIVE SUMMARY

The "SAP ECC Enterprise Digital Twin" is a high-fidelity synthetic data ecosystem designed to replicate the financial heartbeat of a Tier-1 Global Conglomerate. Unlike standard "dummy data", this system functions as a mathematically rigorous ERP Simulator.

It generates a complete chain of custody:

1. P2P (Procurement) -> Liability Generation (EKKO -> BKPF)
2. O2C (Sales) -> Revenue Recognition (VBAK -> VBRK)
3. CE (Treasury) -> Cash Settlement (FEBKO -> BKPFF)
4. GL (Reporting) -> Financial Statements (BKPF -> BSEG)

### PRIMARY VALUE PROPOSITION:

It allows Audit Firms and AI Researchers to train fraud detection algorithms on "Real World" SAP risk patterns (Kiting, Lapping, SOD Conflicts) without the legal liability of using actual client data.

## 2.0 SYSTEM ARCHITECTURE

The product is composed of four integrated modules that share Master Data.

### [MODULE A] PROCURE-TO-PAY (P2P) | The Liability Engine

Function: Simulates procurement lifecycle.

Outputs: Purchase Orders, Vendor Invoices, Payments.

Forensic Traps: Split POs, Phantom Vendors, Duplicate Payments, SOD Conflicts.

### [MODULE B] ORDER-TO-CASH (O2C) | The Revenue Engine

Function: Simulates sales operations.

Outputs: Sales Orders, Deliveries, Billing Docs.

Forensic Traps: Channel Stuffing, Phantom Revenue, Credit Overrides.

**[MODULE C] CASH MANAGEMENT (CE) | The Liquidity Engine**

Function: Reconciles internal ledger against bank reality.

Outputs: Bank Statements (MT940), Recon Reports.

Forensic Traps: Kiting (\$5M+ Gap), Lapping Schemes, Phantom Fees.

**[MODULE D] GENERAL LEDGER (R2R) | The Reporting Engine**

Function: Aggregates subledgers into Trial Balance.

Outputs: Journal Entries, Trial Balance, FSV.

Forensic Traps: Top-Side Adjustments, Weekend Postings, Cookie Jar Reserves.

### **3.0 TECHNICAL INTEGRITY & SCALABILITY**

This dataset passes strict Big 4 Audit integrity tests (despite the intentional fraud vectors):

1. Double-Entry Integrity: Total Debits = Total Credits (GL Variance: \$0.00).
2. Cash Tie-Out: (Book Balance - Bank Balance) - (Reconciling Items) = \$0.00.
3. IPE Documentation: Every module includes a Control Matrix.

#### **SCALABILITY:**

The Parametric Generation Engine offers three dimensions of scalability:

1. Volume: Scalable to 1,000,000+ rows via SQL Integration (Excel Limit Safe).
2. Complexity: Variable "Fraud Density" (Low Friction vs. High Friction).
3. Temporal: Capable of generating Historical, Current, or Future fiscal years.

## 4.0 FORENSIC FINDINGS (DATA TRUTH)

The following logs represent the ground truth of the dataset. These are not warnings; they are hard-coded control failures extracted directly from the internal control matrices.

[MANIFEST: SAP P2P MODULE]  
 DOC\_ID: SAP-P2P-PLAT-2026  
 STATUS: HIGH RISK ENVIRONMENT

CONTROLS & FINDINGS (SOURCE: SAP\_ECC\_P2P\_Final\_Platinum.xlsx):

- C-01: Duplicate Invoice (Fuzzy Match) -> [FAIL] (51 Exceptions)
- C-02: Segregation of Duties (SOD) -> [FAIL] (689 Conflicts)
- C-03: Release Strategy Evasion -> [FAIL] (71 Split POs)
- C-04: Posting Integrity (Backdating) -> [FAIL] (46 Exceptions)
- C-05: Voided Check Logic -> [PASS] (55 Voided Checks)
- C-06: 3-Way Match Integrity -> [FAIL] (284 Mismatches)
- C-07: Credit Memo Integrity -> [PASS] (100 Credits)
- C-08: Foreign Currency Check -> [PASS] (Multi-Currency Validated)
- C-09: Fiscal Period Check -> [PASS] (0 Variances)

[MANIFEST: SAP O2C MODULE]  
 DOC\_ID: SAP-O2C-PLAT-2026  
 STATUS: REVENUE RISK DETECTED

CONTROLS & FINDINGS (SOURCE: SAP\_ECC\_O2C\_Final\_Platinum.xlsx):

- O2C-01: Credit Limit Check (Order < Limit) -> [FAIL] (486 Overrides)
- O2C-02: Revenue Cut-Off (Stuffing) -> [PASS] (32 Warnings - Allowable)
- O2C-03: Billing Integrity (Phantom Inv) -> [FAIL] (48 Ghost Invoices)
- O2C-04: Foreign Currency Validation -> [PASS] (2481 Forex Deals)

[MANIFEST: SAP CE MODULE]  
 DOC\_ID: SAP-CE-PLAT-2026  
 STATUS: CRITICAL TREASURY FAILURE

CONTROLS & FINDINGS (SOURCE: SAP\_ECC\_CE\_Final\_Platinum.xlsx):

- CE-01: Kiting Detection (Float Scheme) -> [FAIL] (13 Confirmed Events)
- CE-02: Unrecorded Liabilities -> [FAIL] (29 Direct Debits)
- CE-03: Lapping / Remittance Fraud -> [FAIL] (7 Mismatches)
- CE-04: Mathematical Accuracy -> [PASS] (0.00 Variance)

[MANIFEST: SAP R2R MODULE]  
 DOC\_ID: SAP-R2R-PLAT-2026  
 STATUS: FINANCIAL REPORTING RISK

CONTROLS & FINDINGS (SOURCE: SAP\_ECC\_R2R\_Final\_Platinum.xlsx):

- R2R-01: Manual Journal Entry Monitor -> [REVIEW] (505 Manual Entries)
- R2R-02: Cookie Jar Reserve Detection -> [FAIL] (1 Confirmed Event)
- R2R-03: Weekend/Late Postings -> [FAIL] (6 Suspicious Times)
- R2R-04: Top-Side Adjustments -> [PASS] (0 Exceptions)
- R2R-05: SoD Conflict (4-Eyes) -> [FAIL] (18 Violations)

NOTE: The 'FAIL' status indicates that the synthetic data generator successfully injected a fraud pattern matching the control logic. These are the 'Right Answers' for any AI model being trained on this dataset.

**VERIFIED BY: synthetic cfo**

**SYSTEM STATUS: READY FOR DEPLOYMENT**