

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