

AUTONOMOUS DATA PROTECTION

FINANCIAL SERVICES • FORTUNE 100 • CASE STUDY

When 40,000 Transactions Per Second Cannot Wait for a Human Decision

How a Fortune 100 Financial-Transactions Company Achieved Context-Aware Data Protection at **Machine Speed**

40,000

TXN/SEC

Real-time throughput

<50ms

LATENCY

Enforcement decision

Dramatically

LOWERED FALSE POSITIVES

Production accuracy

75

REPOSITORIES

Protected at deployment

The Problem Was Not the Volume. It Was the Architecture.

In a high-volume financial environment, most data-protection controls fail not because they cannot detect sensitive information — but because they cannot act on that detection before the transaction completes. The system was making correct identifications at the wrong speed.

The Architecture Class Was the Problem

For a Fortune 100 organization processing 40,000 transactions per second, the legacy DLP architecture created a structural impossibility: it required human-mediated decisions to operate at machine-level speed. The failure was not a configuration problem. It was a category mismatch.

BEFORE ISE	AFTER ISE
<div>Detection ≠ Enforcement</div> <div>Alert storms consuming analyst capacity</div> <div>Policy rules decaying against new data patterns</div> <div>High false positive rate blocking legitimate operations</div> <div>No context — only content detection</div>	<div>Detection = Enforcement</div> <div>Automated decisions at transaction speed</div> <div>Autonomous classification without prior tagging</div> <div>Dramatically lowered false positive rate in production</div> <div>Context + content + authorization scope evaluated</div>

Protection Without Operational Disruption

<div>UNINTERRUPTED THROUGHPUT</div> <div>Legitimate payment processing continued at full 40,000 TPS rate. ISE enforcement introduced no perceptible latency to authorized transaction workflows.</div>	<div>EXISTING CONTROLS PRESERVED</div> <div>ISE deployed alongside existing security infrastructure. No rip-and-replace. No operational change management burden. Protection was additive, not disruptive.</div>
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INEVITABILITY VERDICT

Any financial organization operating manual policy-based DLP at high transaction volume is not managing data risk. It is accepting the certainty of undetected exposure.

What No Policy-Based System Can Do

The requirement was not a better DLP configuration. It was a set of capabilities that policy-driven systems are architecturally incapable of delivering. These are not features. They are preconditions for effective data control at this scale.

Classify without prior definition

Identify sensitive data patterns — including novel PCI and PII structures — without requiring a human to define them first.

Generate decisions without human latency

Evaluate, decide, and enforce a data protection action within the same transaction window — sub-50ms, at scale.

Evaluate intent, not just content

Assess whether a transfer is legitimate by considering authorization scope and operational context, not merely the presence of sensitive information.

Sustain accuracy at production volume

Dramatically lower false positive rates across 40,000 transactions per second — without alert-driven analyst review as the primary control.

Why No Vendor in the Legacy Category Can Close This Gap

THE LEGACY CEILING

Legacy DLP is architecturally bounded: it can only enforce what a human has pre-defined. In a 40,000 TPS environment, pre-definition is not possible fast enough to matter.

THE NON-REPLICABILITY PRINCIPLE

ISE's contextual enforcement — combining classification, authorization scope, and transfer evaluation in a single sub-50ms operation — cannot be replicated by adding rules to a rule-based engine.

RISK OWNERSHIP REFRAME

When a legacy DLP system fails to prevent an unauthorized transfer, the incident report cites **missed detection**. When an autonomous system fails, the question is architectural. The distinction matters because it determines whether the organization can fix the problem — or must replace the category.

The Proof-of-Value Framework

WHAT TO MEASURE

- Inspection coverage vs. actual traffic patterns
- Throughput and enforcement latency under load
- Classification quality on your sensitive data types
- False positive rate reduction against live production traffic

SUCCESS CONDITIONS

- Unauthorized transfers detected and blocked in-band
- Authorized workflows unaffected at full volume
- Audit evidence chain meeting regulatory requirements
- Integration requirements mapped against existing stack

Delay Is Not Risk. Delay Is Failure.

POLICY-BASED DLP	AUTONOMOUS ISE
Detect → Alert → Investigate → Escalate → Act Human latency: hours to days	Detect → Decide → Act Machine speed: < 50ms

SECTION 04 • FIVE PROPERTIES OF A SYSTEM THAT WORKS

What Any Viable System Must Do

- 01
- Autonomous Identification**
Detects PCI, PII, and sensitive business data across structured and unstructured environments — without requiring prior manual tagging or pattern definition.
- 02
- Contextual Authorization Evaluation**
Assesses each transfer against applicable authorization scope: who is transferring, to where, under what business process. Content alone does not determine enforcement.
- 03
- Inline Enforcement at Transaction Speed**
Blocks unauthorized transfers at the control point — within the same operational window as the transaction itself, not after the fact.
- 04
- Zero-Latency Policy Adaptation**
Classifies and evaluates without requiring human-authored rules for each data type, enabling protection of novel and evolving sensitive data patterns.
- 05
- Forensic Audit Chain**
Records every enforcement decision with the evidence chain required for regulatory review, legal proceedings, and internal accountability.

Three Scenarios. One System. Zero Human Latency.

SCENARIO A • UNAUTHORIZED TRANSFER ATTEMPT

Classified. Blocked. Reported. Learned.

- Agent detects PCI-pattern data moving toward an unapproved external endpoint
- Transfer context evaluated: destination not within authorization scope
- Transfer blocked at enforcement point — within the same transaction window
- Forensic record created: data type, transfer path, decision, timestamp
- Classification model updated for next encounter of similar pattern

SCENARIO B • LEGITIMATE BUSINESS OPERATION

Authorized. Processed. Recorded. Uninterrupted.

- Agent detects PII moving within an authorized settlement workflow
- Transfer context evaluated: destination, process type, and authorization scope verified
- Transfer permitted — no operational delay imposed
- Forensic record created: proof of authorized transfer for compliance audit
- Operational throughput maintained at full transaction volume

SCENARIO C • NOVEL DATA PATTERN

Unknown Data. Immediate Classification. No Policy Required.

- Agent encounters a sensitive data pattern not previously defined in policy
- Autonomous classification applied: pattern analyzed in context
- Decision rendered based on transfer context and authorization scope
- No analyst escalation required — enforcement executed in-band
- New pattern registered for ongoing protection without manual rule authoring

What the Numbers Actually Mean

The operational metrics from this deployment are not performance benchmarks. They are proofs of concept for a fundamentally different risk posture. Each figure represents a structural displacement of human-mediated control by autonomous enforcement.

Deployment milestone	45 min <i>from initiation to first protected state</i>
Ontology setup	2 hrs <i>initial configuration before production enforcement</i>
Repositories protected	75 <i>at deployment — without custom policy authoring</i>
Analyst escalations displaced	Structural <i>enforcement executes without alert-review workflows</i>

BOARD TRIGGER STATEMENT

If this is true, continuing to operate a policy-based data protection model in a high-volume transaction environment is not a risk decision. It is the absence of one.

The transition to autonomous data protection is not a question of capability. It is a question of whether your organization's risk tolerance accounts for what a manual system structurally cannot do.

NEXT STEP

Evaluate Autonomous Data Protection for your environment.

Request a technical demonstration and controlled proof-of-value assessment.

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