FFERM™ RISK INTELLIGENCE PLATFORM

Credit Union Edition

Purpose-built for federally-insured credit unions

Regulated by: NCUA | FinCEN | FFIEC | CFPB

Patent Pending | Version 4.0 | August 2026

Platform Overview

The FFERM™ Risk Intelligence Platform — Credit Union Edition is an AI-powered intelligence overlay purpose-built for federally-insured credit unions. It enhances your existing credit union GRC system (Ncontracts, Quantivate, OnSpring, LogicManager, or Jira Cloud) with machine-learning analytics and regulatory intelligence tailored to cooperative governance structures, NCUA examination standards, and CAMEL rating frameworks.

Delivering a 22–35× performance improvement over manual processes, the Credit Union Edition transforms BSA/AML compliance, enterprise risk assessment, and governance maturity from periodic burdens into continuous, examination-ready programs.

The Patent-Pending Four-Factor Methodology

Compounding (C)
How risk effects build and amplify over time — captures cascading, systemic, and time-amplified exposures.

Severity (S)
Impact level and financial/operational consequences of the risk materializing.

Likelihood (L)
Probability of the risk occurring — aligned to institutional history and sector benchmarks.

Predictability (P)
How foreseeable the risk is. Inverse-weighted: lower predictability = higher risk score. Captures black swans.

H/L convention. High is high-risk for Compounding, Severity, and Likelihood; Predictability is inverted — *low* predictability is high-risk. The 16 binary patterns run from the worst case (HHHL) to the best case (LLLH), each mapping 1:1 to a risk archetype and one of four risk zones. The composite score is the **FFERM Risk Index (FRI)**.

BSA/AML Compliance Assessment — Credit Unions

Automated evaluation of the credit union's BSA/AML program against FinCEN requirements (31 CFR Chapter X) and NCUA BSA examination procedures — scored across NCUA's five-pillar framework (NCUA Letter 22-CU-04).

Pillar / Component	Scope
Pillar 1 — BSA Officer & Board Oversight	BSA/AML Compliance Officer designation and board-level oversight specific to cooperative governance structures.
Pillar 2 — Policies, Procedures & Controls	Written BSA/AML policies, procedures, and internal controls aligned to NCUA examination procedures.
Pillar 3 — Staff & Board Training	Ongoing BSA training for staff and board members — scope, frequency, and documentation.
Pillar 4 — Independent Testing	Supervisory committee or third-party independent testing aligned to NCUA requirements.
Pillar 5 — MIP & CDD/EDD	Member Identification Program and Customer Due Diligence / Enhanced Due Diligence — tailored to credit union member relationships, not commercial banking customers.
Transaction Monitoring & Reporting	SAR filing history and status. CTR monitoring. OFAC sanctions screening. High-risk member identification and enhanced due diligence controls.
Regulatory Alignment	FinCEN CDD Rule (31 CFR Chapter X). NCUA Letters to Credit Unions and examination guidance. CAMEL Compliance component correlation — BSA gaps mapped to rating impact.

Banking Regulatory Intelligence (NCUA-Adapted)

The same FFIEC Call Report integration and stress testing infrastructure as the Banking Edition, adapted for NCUA examination standards and credit union capital frameworks.

Module Component	Capability
FFIEC Call Report Integration	CDR REST API connection. Quarterly import of balance sheet, income statement, capital ratios, asset quality, and liquidity metrics. Institution search by RSSD ID.

Stress Testing	Nine-quarter capital trajectory projections under four scenarios (Baseline, Severely Adverse, Funding Stress, Rate Shock). Non-linear stress curves. Stress capital buffer calculation with pass/fail determination.
CAMELS Assessment (NCUA-Adapted)	Six-component ratings aligned to NCUA examination standards. Management double-weighted per regulatory guidance. Composite rating with automatic identification of areas of concern.
FFIEC-to-FFERM Correlation	13 financial metrics auto-correlated to the FFERM Four Factors. The AI Risk Advisor incorporates capital ratios and CAMELS results into all strategic recommendations.

GRC Integration Layer — Credit Union Platform Bridge

FFERM integrates natively with the four GRC platforms most widely deployed across the credit union sector. Rather than replacing these investments, FFERM operates as an intelligence overlay — bidirectionally syncing analytics, FFERM scoring, and NCUA-aligned intelligence.

Platform	Integration Method & Scope
Ncontracts	OAuth 2.0 or API key. Risk register, vendor management, audit management, and compliance tracking — the most widely deployed GRC platform in the credit union sector.
Quantivate	API key. Enterprise risk management, BSA/AML workflows, compliance management, and policy management.
OnSpring	API key. Control testing, issue tracking, and internal audit plans.
LogicManager	API key + HMAC or OAuth 2.0. Enterprise ERM, audit management, and incident reporting.

Bidirectional Sync & Architecture

- **Pull GRC data** — import risks from your credit union GRC platform into FFERM for machine-learning analysis
- **Push FFERM insights** — send FFERM scores, anomalies, and NCUA-aligned analytics back to your GRC system
- **Automated scheduling** — hourly, daily, or weekly sync with conflict detection
- **Field mapping** — custom transformations to align FFERM and GRC field names
- **Conflict resolution** — use_fferm, use_grc, use_latest, or manual strategies with complete audit trails
- **Security** — credential management via secure environment secrets (never stored in the database), error isolation per connector, and abstract connector architecture for future platform extensibility

Analytical Foundation & Model Governance

FFERM is a quantitatively rigorous system, not a black box. The engine comprises **147 analytical implementations across eight categories**: 90 deterministic calculations, 9 true machine-learning models (3 supervised, 5 unsupervised, 1 reinforcement learning), 25 statistical methods, 8 financial and regulatory computations, 8 generative-AI components, and 7 agentic workflows. The deterministic core means every score is reproducible, decomposable, and explainable on examination.

Governance Element	Detail
Supervisory Alignment	Aligned to the Interagency Revised Model Risk Management Guidance — Federal Reserve SR 26-2, OCC Bulletin 2026-13, and FDIC FIL-15-2026 (April 17, 2026). Examiner-facing scope presented as 7 engines / 35 implementations across scope classes A through D.
Model Inventory Tiering	Tier 1: FRI, Dynamic Risk Score, control-failure prediction, regulatory pre-alert. Tier 2: Tail Score, Adjusted Risk Score, Interaction Index, culture metrics. Tier 3: Monte Carlo, PCA, drift analysis, sensitivity testing.
GenAI Controls	Generative-AI components operate behind a prompt and data firewall with human-in-the-loop review and a seven-year audit trail. GPT-based factor assessment feeds the FRI only after review; validation completed July 2026.
Validation Methods	K-fold cross-validation, sensitivity analysis, normality testing, and back-testing against the production risk population. Model validation artifacts are maintained separately from model development for independent-review defensibility.

Shared Platform Capabilities

The following enterprise-grade capabilities are included in every FFERM edition as standard components.

Four-Tier Analytics Framework
Descriptive → Diagnostic → Predictive →

AI Risk Advisor
Conversational executive advisory system.

ML-Powered Risk Intelligence
Isolation Forest anomaly detection,

Prescriptive. Risk distribution, ML anomaly detection, 6-month forecasting, scenario modeling, and budget optimization.

Analyzes the complete risk portfolio in real time and generates 4–6 personalized strategic recommendations per session, behind the GenAI control framework.

Interaction Index (IX), Tail Score for black swan identification, Monte Carlo simulation, and 10 ML-derived risk archetypes.

Risk Culture Intelligence Engine

Five proprietary metrics: Cultural Stability Tensor (CST), Culture Resilience Score (CRS), Culture Pulse Index (CPI), Bayesian Risk Sentiment (BRSI), and Issue Response Velocity (IRV) — plus control-failure prediction.

Risk Zones & Quadrants

Four multi-dimensional classification zones built from FFERM factor trios: Systemic Crisis, Gray Rhino, Traditional Risk, and Black Swan Detection — far beyond a 2D heat map.

Market Watch

The second platform pillar alongside Risk Intelligence. Macroeconomic, sector, peer, and climate exposure signals translated into FFERM factor adjustments — shared across all five editions.

Threat Intelligence Engine

AlienVault OTX integration with MITRE ATT&CK alignment. Ingests threats on a six-hour cycle and auto-maps them to the FFERM Four Factors — zero manual input required.

Enterprise Control Framework

Centralized control library with many-to-many junction architecture. High-reliance controls reduce residual risk 40%; medium 20%. Complete audit trail for regulatory production.

Risk Treatment Lifecycle

Full treatment management: Avoid, Transfer, Mitigate, Accept, Exploit. Planned → In Progress → Completed workflow with cost tracking, effectiveness ratings, and overdue alerts.

Prescriptive & Budget Optimization

Treatment ROI ranking with per-factor impact and confidence scoring, feeding a budget allocation optimizer that returns the funded treatment set maximizing risk reduction per dollar.

Governance Maturity Assessment

20-question evidence-based assessment across 10 dimensions. Produces a personalized FFERM Advancement Roadmap mapping platform features to each of five maturity stages.

Role-Based Delivery

Tailored dashboards for 16 institutional roles across the three-lines model, including a read-only Regulator/Examiner view whose framework switches with the edition.

Key Differentiators

NCUA-Specific Compliance Framework

NCUA Letter 22-CU-04 five-pillar alignment, Member Identification Program tracking, and CAMEL Compliance component correlation ensure direct NCUA examination readiness — not generic banking compliance adapted for credit unions.

Credit Union GRC Ecosystem Integration

Native connectors for Ncontracts, Quantivate, OnSpring, and LogicManager — the four platforms most widely used in the sector. No need to replace existing technology investments.

Cooperative Governance Alignment

Built for the governance structures, asset sizes, and member-relationship models unique to credit unions. Supervisory committee and board oversight features reflect cooperative regulatory requirements rather than commercial banking structures.

Platform Traction & Intellectual Property

Patent Pending

USPTO provisional applications filed covering the Four-Factor methodology, machine-learning implementations, the Risk Quadrant framework, and industry-specific intelligence modules, with non-provisional applications in preparation.

Production Validation — ServiceNow IRM

6,000+ enterprise risks ingested and 4,481 fully scored through the FFERM Four-Factor engine in live ServiceNow production — establishing enterprise-scale performance benchmarks in a real GRC environment.

700+ Newsletter Subscribers

The Risk Strategist newsletter provides ongoing thought leadership in enterprise risk economics, building a pre-qualified financial services risk professional audience.

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