Margin calculation Engine

A solution for Cleared and Un-cleared Derivatives

Amsterdam, October 2013
Razor: Credit & Market Risk Management.
SOLA: Surveillance, Clearing & Settlement

100% owned by the MAPLE Consortium July 2012.

TMX, C$3bn Balance Sheet
Regulations

EMIR  Dodd-Frank  IOSCO  BCBS

Arrangements

Central clearing  Bilateral agreements

Requirements

Variation Margin  Initial Margin
Adaptable, Configurable

Broad asset/instrument coverage

Scenario based simulation framework

A risk framework for margin calculations

Robust analytics for cleared & non-cleared OTC
Initial Margin Calculations

- Range of standard methodologies for margin computation
- Configurable options for implementing approved internal models
- What-if capability for pre-deal margin assessment
- Cross-product and netting capability
Business Benefits

IM/VM Calculation & Simulation
In real-time

- Minimizes post-trade dispute & reconciliation costs
- Reduces Margin/collateral overheads
- Enhances control and decision making
- Improves the efficiency and timeliness of processes
IM calculations:
Supports a comprehensive range of methods and models

- Historical VaR
- Monte Carlo VaR
- Bootstrapped VaR
- Stressed VaR
- Expected Shortfall
- Risk arrays

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Margin Scenario Array (SPAN-like) calculated in Razor

Input via Collateral Management System
Each portfolio calculation automatically generates trade-contribution level data.

Margin Scenario Array (SPAN-like) calculated in Razor.
Information easily transferred to third party systems

Each portfolio calculation automatically generates trade-contribution level data
Information easily transferred to third party systems

Standard Razor Risk functions include powerful analytics to facilitate economic assessment and portfolio bifurcation decisions.
Easily imported into third party tools e.g. COLLINE to provide access to Razor’s IM calculation engine.

Standard Razor Risk functions include powerful analytics to facilitate economic assessment and portfolio bifurcation decisions.
Results transfer into third party solutions just as easily.

Powerful Razor Risk functions provide real-time analytics which are easily read.
Any Counterparty or organisation hierarchies fully supported

Ensures that the correct CSA’s and segregation rules are applied
All OTC/ETD Trade types and instruments covered
Market data curves and all relevant inputs supported to provide valuations/calculations for all OTC/ETD Margin and Market Risk/Credit Risk Analytics
• Incremental Risk Charge
• Margin and Collateral pricing
• Counterparty Exposures (PFE)
• Netting & Collateral off-setting
• What-if Analysis
• Intra-day updates
• Limits & Excess Management
• Monte Carlo and MtM methods

• Real Time
• Cross Asset classes
• Internal and external models
• Basel 2 and 3, SII (P1, 2, 3)
• Portfolio Effects
• Correlation Effects
• EVA, CVA, IMM

• GUI, tailored layouts and dashboards
• Full trade level drill - down
• Aggregation to (any) required levels
• Real-time and time series reporting

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• High availability for 24x7x365, BAU risk monitoring
• Trading Risk, Greeks, Sensitivities
• Default Management: Rapid availability of hedge equivalents to aide close out
• Scenario analysis
• Accurate and rapid/Real Time reporting

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• Stress testing
• Scenario & Sensitivity Analysis
• Initial & Variation Margining
• HS VaR, MC VaR
• SPAN + other arrays
• Back testing
• Intra-day Market data updates

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• Real Time
• Limits, thresholds and alerts
• Workflow support
• Scenario Analysis
• Stress testing
• Back testing

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Razor Risk
TMX Technology Solutions