

# MARS Collateral Management: Make the right call.



Bloomberg Terminal

Risk & Valuations

**Bloomberg**



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# Manage collateral, minimize complexity.

The wave of reform that followed the 2008 financial crisis has placed increased emphasis on collateral and highlighted the vitally important role it plays in the market. The amount of collateral required has increased significantly, as has the range of products and market participants covered.

The Bloomberg Terminal® gives you a powerful tool to manage these constantly evolving changes and mitigate counterparty credit risk. MARS Collateral Management is an automated, end-to-end solution that delivers everything you need to manage and monitor exposures and positions and take control in a changing regulatory landscape.



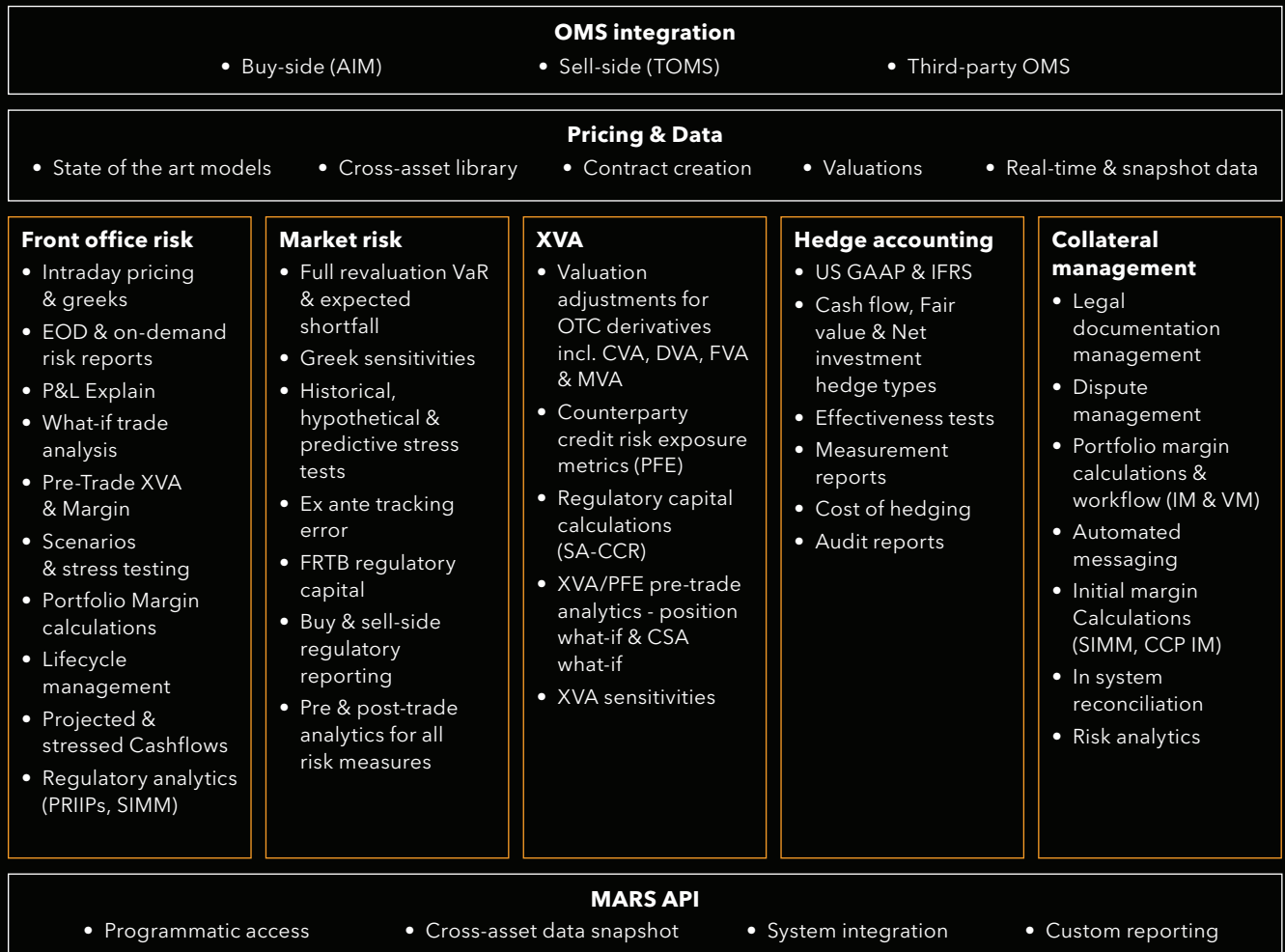
## Broad product coverage

If you can price a product on the Bloomberg Terminal®, you can manage its associated collateral. With product coverage across multiple asset classes, including equities, fixed income, commodities and FX, MARS Collateral covers the vast majority of derivatives.

## Powerful analytics

Leveraging the power of Bloomberg market data, front-office pricing calculators and communication tools, MARS Collateral contains an extensive suite of metrics including configurable IB, collateral risk and an in-system reconciliation tool.

## Bloomberg Multi-Asset Risk System (MARS)



# Navigate a changing industry.

Posting high-quality assets such as cash and bonds as collateral against derivatives exposures is a long-standing credit mitigation technique used by most sell-side and larger buy-side firms. In the lightly-regulated derivatives space, collateral management was carried out in silos as a back-office function. Since the introduction of regulation designed to increase transparency and reduce systemic risk in the financial industry, firms have begun to consolidate their operations with the aim of managing their collateral process more holistically and efficiently.

## Post-crisis challenges

The transition has been accompanied by sizeable challenges, with firms required to address new questions over where their collateral is held, how it can be optimized, what action to take when they do not have eligible collateral immediately to hand

and how to independently calculate their derivative and collateral valuations using market-standard pricing models. Bloomberg's MARS Collateral Management solution directly addresses these issues.

	Challenge	Bloomberg solution
<b>Technology</b>	BCOL <GO> has a built-in reconciliation tool, RSTN <GO>, that allows users to perform a proactive portfolio reconciliation to prevent or solve disputes as well as for regulatory purposes.	Calculates, aggregates and displays margin calls across products and legal entities.
<b>Volume</b>	Total outstanding collateral in the market is expected to dramatically increase.	Segregates collateral positions by agreement in distinct portfolios to ensure accurate record keeping.
<b>Frequency</b>	The number of margin calls is expected to significantly increase.	Enables you to: <ul style="list-style-type: none"> <li>• Manage collateral agreement details</li> <li>• Define the frequency and timing of margin calls</li> <li>• Monitor all margin events</li> <li>• Automatically send and receive margin calls via an electronically generated message</li> </ul>
<b>Tracking</b>	Firms must have a holistic view into their inventory to ensure proper allocation and optimization of collateral.	Allows you to track your exposures, collateral positions and agreement terms in real-time. If a counterparty defaults, you know exactly how much collateral you hold for recovery.

# Access powerful functionality.

MARS Collateral Management is a multi-product, multi-asset collateral management and straight-through processing hub, incorporating powerful tools such as Bloomberg RecStation, RSTN <GO>, for portfolio reconciliation, Bloomberg data for risk analytics and AcadiaSoft technology for electronic messaging. All these tools are fully integrated into the Bloomberg Terminal and its wider suite of risk management solutions.

Component	Functionality
Legal Entity & Documentation Manager LEDO <GO>	<ul style="list-style-type: none"> <li>LEDO allows users to enter and monitor terms and conditions of their legal collateral agreements (e.g., CSAs)</li> </ul>
Exposure Management BCOL <GO>	<ul style="list-style-type: none"> <li>Independent valuations for both initial and variation margin (regulatory compliant)</li> <li>Netting set creation</li> <li>Bloomberg reference data to value collateral</li> </ul>
Margin and Dispute Management	<ul style="list-style-type: none"> <li>Margin call management</li> <li>Eligibility and sufficiency monitoring</li> <li>Dispute management</li> </ul>
Portfolio Reconciliations	<ul style="list-style-type: none"> <li>Proactive portfolio reconciliations</li> </ul>
Electronic Messaging	<ul style="list-style-type: none"> <li>Automated communication of margin calls via AcadiaSoft or email (MSG)</li> </ul>

## Legal entity management

Legal Entity Details

1) Details
2) Contacts
3) Counterparty Map

Short Name*	DEMO 1 CPTY	Entity Type*	Counterparty
Entity Id*	LEI	213800509DEMOC4ABC80	
Legal Name*	DEMO COUNTERPARTY PLC		
Industry	Banks	Country of Incorp.	GB
Counterparty Risk	Normal		
Credit Rating	Moody's	S&P	Fitch
Long Term	Ba1	BBB-	BBB+
Short Term	NP	A-3	F2

\*Required Field

1) Save
Cancel

### Legal Entity Details LEDO <GO>

Manage your legal entities on LEDO using up-to-date entity information such as LEI, legal name, industry and credit rating.

## Legal documentation management

1) Export to Excel		2) Contact		Legal Documentation Manager (DEMO)	
1) Legal Entities		1) Collateral Agreements			
Groupings		1) Bulk Mode	1) Add	Show Additional Columns	
Business Line	Agreement Name	Principal	Counterparty	Status	Business Line
OTC (5)				ALL	ALL
OTC Cleared (1)	2) DEMO 1 CPTY	Demo Principal	DEMO 1 CPTY	Active	OTC
TBA (1)	2) DEMO 2 CPTY	Demo Principal	DEMO 2 CPTY	Active	OTC
Status	2) DEMO 3 CPTY UMW	Demo Principal	DEMO 3 CPTY	Active	OTC
Active (6)	2) DEMO 4 CPTY	Demo Principal	DEMO 4 CPTY	Active	OTC
Inactive (1)	2) DEMO 5 CPTY - CLRD	Demo Principal	DEMO 5 CPTY - CLRD	Active	OTC Cleared
	2) DEMO 6 CPTY (TBA)	Demo Principal	DEMO 6 CPTY	Active	TBA
	2) DEMO 7 CPTY	Demo Principal	DEMO 7 CPTY	Inactive	OTC

### Collateral Agreement Details

LEDO stores all terms relevant to margin management – valuation and timings; thresholds and regulatory compliant independent amounts/initial margins; eligibility criteria and interest terms; product coverage.

## Margin call management

Views		Actions		Settings		Contact		Multi Asset Risk System: Collateral (DEMO)	
1) Margin		1) Dispute		1) Interest		1) Reconciliation			
2) Summary		2) History							
Hide Filters		Reset Filters		New Events		Pending Events		Event Actions	
Event Type	Agreement	Event Type	Mgn. Type	Status	Ccy	Call Amt.	Exposure	Collateral	
Cpty. Call	4) DEMO 1 CPTY	Cpty. Call	VM	Open	GBP	-6,100,000	-6,092,780	0	
No Action	4) DEMO 2 CPTY	No Action	VM	Open	USD	0	1,682,769	1,723,526	
Prin. Call	4) DEMO 3 CPTY ...	No Action	VM	Open	EUR	0	0	0	
	4) DEMO 4 CPTY	Prin. Call	VM	Open	EUR	1,420,000	2,166,668	754,244	
Margin Type	4) DEMO 5 CPTY ...	Cpty. Call	VM	Open	USD	-281,290	-884,984	-603,695	
Prin. IM	4) DEMO 5 CPTY ...	Cpty. Call	Prin. IM	Open	USD	-153,672		-750,000	
VM	4) DEMO 6 CPTY ...	Prin. Call	VM	Open	USD	300,000	295,396	0	
Hide positions		Exposure		Collateral					
Clear Filters		Asset Type	Currency	Notional	Market Value	Mkt Val Base Ccy	Portfolio		
Totals (6)						-6,092,780.12			
=FX (1)						-9,765.86			
LGBPUSD		Option	GBP	-1,000,000	-9,765.86		DEMO PORTFOLIO		
=Interest Rate (5)						-6,083,014.26			
-/SWAP 2.65 11/23/20		Swap	USD	-50,000,000	-3,124,162.28	-2,521,511.38	DEMO PORTFOLIO		
-/SWAP 2.65 11/23/20		Swap	USD	-50,000,000	-3,124,162.28	-2,521,511.38	DEMO PORTFOLIO		
-/SWAP 2.50 06/23/21		Swap	USD	10,000,000	715,500.92	577,480.79	DEMO PORTFOLIO		
-/SWAP 1.66 11/10/20		Swap	USD	-150,000,000	-2,869,169.56	-2,315,706.75	DEMO PORTFOLIO		
-/SWAP 1.53 10/06/20		Swap	USD	100,000,000	865,115.17	698,234.46	DEMO PORTFOLIO		

### Collateral Call Management

Use BCOL to manage your day-to-day margin call process, including sending margin calls, booking collateral, managing disputes and interest payments.

## Trade management

Views - Actions - Settings - Contact Multi Asset Risk System: Collateral (DEMO)

1) Margin 2) Dispute 3) Interest 4) Reconciliation

5) Summary 6) History

Hide Filters

Reset Filters

New Events Pending Events 7) Event Actions 8) Bulk Mode

Event Type	Agreement	Event Type	Mgn. Type	Status	Ccy	Call Amt.	Exposure	Collateral
Cpty. Call	3) DEMO 1 CPTY	Cpty. Call	VM	Open	GBP	-6,100,000	-6,092,780	0
No Action	2) DEMO 2 CPTY	No Action	VM	Open	USD	0	1,682,769	1,723,526
Prin. Call	2) DEMO 3 CPTY ...	No Action	VM	Open	EUR	0	0	0
	4) DEMO 4 CPTY	Prin. Call	VM	Open	EUR	1,420,000	2,166,668	754,244
Margin Type	5) DEMO 5 CPTY ...	Cpty. Call	VM	Open	USD	-281,290	-884,984	-603,695
Prin. IM	6) DEMO 5 CPTY ...	Cpty. Call	Prin. IM	Open	USD	-153,672		-750,000
VM	7) DEMO 6 CPTY ...	Prin. Call	VM	Open	USD	300,000	295,396	0

Hide positions

Exposure Collateral

Asset Type	Currency	Notional	Market Value	Mkt Val Base	Ccy Portfolio
Total					
FX					
EURUSD					
Interest Rate					
SWAP 2.00 05/08/20					
SWAP 1.19 08/29/19					
SWAP 1.19 08/10/19					
SWAP 1.00 05/12/20					
IRS 2.17 11/14/21					

Expand All Collapse All

Swap Manager (SWPM)

Copy "/SWAP 2.65 11/23/20"

1) /SWAP 2.65 11/23/20 Swap

2) /SWAP 2.50 06/23/21 Swap

3) /SWAP 1.66 11/10/20 Swap

4) /SWAP 1.53 10/06/20 Swap

9) Actions 10) Products 11) Views 12) Info 13) Settings 14) Swap Manager

15) Solver (Premium) 16) Load 17) Trade 18) CCP 19) Send to EMIR 20) ID SL451VPT

21) Main 22) Details 23) Curves 24) Cashflow 25) Resets 26) Scenario 27) Risk 28) CVA 29) Matrix

Deal Fixed Float Swap Counterparty DEMO 1 CPTY Ticker / SWAP Properties

Swap SL451VPU Receive Leg 2: Float Pay SL451VPV

Leg 1: Fixed 50MM USD Notional 50MM USD

Leg 2: Float 50MM USD Notional 50MM USD

Effective 11/16/2015 Effective 11/16/2015

Maturity 11/23/2020 Maturity 11/23/2020

Coupon 2.650528 Index US0002H

Pay Freq SemiAnnual Spread 3M 0.000 bp

Day Count 301/360 Leverage 1.00000

Calc Basis Money Mkt Latest Index 0.81711

Market Leg 1: NPV 53,050,167.86 Leg 2: NPV -50,090,826.86

Accrued 611,092.96 Accrued -88,520.25

Premium 104.88 Premium -100.00

DV01 20,188.82 DV01 -194.53

Valuation Results Par Cpn 1.409267 Premium 4.87353 PW01 21,936.93

Principal 2,436,767.29 BP Value 591.86820 DV01 19,994.29

Accrued 522,573.71 Gamma (1bp) 9.07

NPV 2,959,341.00

### Seamless integration

BCOL provides direct links to trading systems, which allows you to access details of specific collateralized trades without having to open a new screen.

## Communications management

Views - Actions - Settings - Contact Multi Asset Risk System: Collateral (DEMO)

1) Margin 2) Dispute 3) Interest 4) Reconciliation

5) Summary 6) History

Hide Filters

Reset Filters

New Events Pending Events 7) Event Actions 8) Bulk Mode

Event Type	Agreement	Event Type	Mgn. Type	Status	Ccy	Call Amt.	Exposure	Collateral
Cpty. Call	3) DEMO 1 CPTY	Cpty. Call	VM	Open	GBP	-6,100,000	-6,092,780	0
No Action	2) DEMO 2 CPTY	No Action	VM	Open	USD	0	1,682,769	1,723,526
Prin. Call	2) DEMO 3 CPTY ...	No Action	VM	Open	EUR	0	0	0
	4) DEMO 4 CPTY	Prin. Call	VM	Sent	EUR	1,420,000	2,166,668	754,244
Margin Type	5) DEMO 5 CPTY ...	Cpty. Call	VM	Open	USD	-281,290	-884,984	-603,695
Prin. IM	6) DEMO 5 CPTY ...	Cpty. Call	Prin. IM	Open	USD	-153,672		-750,000
VM	7) DEMO 6 CPTY ...	Prin. Call	VM	Open	USD	300,000	295,396	0

Hide positions

Exposure Collateral

Asset Type	Currency	Notional	Market Value	Mkt Val Base	Ccy Portfolio
Totals (6)					
FX (1)					
EURUSD					
Interest Rate (5)					
SWAP 2.00 05/08/20					
SWAP 1.19 08/29/19					
SWAP 1.19 08/10/19					
SWAP 1.00 05/12/20					
IRS 2.17 11/14/21					

Clear Filters

Margin Event Details

Field	Value
Principal	Demo Principal
Counterparty	DEMO 4 CPTY
Event Type	Prin. Call
Status	Sent
Margin Type	VM
Valuation Date	11/09/16
Base Currency	EUR
Exposure	2,166,668
Principal IA	0
Counterparty IA	0
Threshold	0
Credit Support Amt.	2,166,668
Total Collateral Held	754,244
Settled Collateral	754,244
Collateral in Transit	0
Total Requirement	1,412,424
MTA	50,000
Rounding	10,000
Call Amount	1,420,000

Close

Margin call from Bloomberg L.P. to Bloomberg

From Collateral Testing (BLOOMBERG/ 731 LEX)

To Collateral Testing (BLOOMBERG/ 731 LEX)

Principal: Bloomberg L.P.

Counterparty: Bloomberg Tradebook (Bermuda) Ltd.

Valuation Date: November 9, 2016

Base Currency: EUR

Principal Exposure: 2,166,668

Principal IA: 0

Counterparty IA: 0

Counterparty Threshold: 0

Credit Support Amount: 2,166,668

Collateral Held by Principal: 754,244

Total 1,412,424

MTA: 50,000

Rounding: 10,000

Final Call Amount: 1,420,000

Payable to: Bloomberg L.P.

### Seamless messaging

Connect to counterparties and internal colleagues through BCOL, using MSG, IB, FTP and automated margin messaging.



## Portfolio reconciliation

Actions		Settings		Collateral Management Workflow				
10 Margin	12 Dispute	13 Interest	14 Reconciliation					
Hide Filters								
Reset Filters		Collateral Agreement	RSTN TEST CPTY	Valuation Date	08/29/16			
Pair Status		Pair Status	NPV Status	Deal Id	Submitter	Asset Class	Notional	Market Value
Unmatched	10	41) Unmatched	N/A	SPRR061W	CoPrincipal	CDS	10,000,000	251,770
Matched	22	42) Unmatched	N/A	SPRS0VGY	CoPrincipal	CDS	10,000,000	-577,239
Manual	4	43) Unmatched	N/A	ES5598591	EcPrincipal	Equity	10,000	40,268
		44) Unmatched	N/A	ES5598613	EcPrincipal	Equity	50,000	1,787,595
NPV Status		45) Unmatched	N/A	ES5598613	EcPrincipal	Equity	50,000	1,787,595
Unmatched	22	46) Unmatched	N/A	ES5598613	EcPrincipal	Equity	50,000	1,787,595
N/A	10	47) Unmatched	N/A	ES5598604	EcPrincipal	Equity	97,154	-521,300
Matched	4	48) Unmatched	N/A	ES5598604	EcPrincipal	Equity	97,154	-521,300
Asset Class		49) Unmatched	N/A	OPTFYR35	CuPrincipal	FX	1,000,000	31,937
CDS	2	50) Unmatched	N/A	TRDREF139	Counterparty	FX	-1,250,000	-22,467
Equity	6	51) Matched	Matched	OPTFYR28	CuPrincipal	FX	-10,000	-2,766
FX	8	52) Matched	Matched	TRDREF137	Counterparty	FX	10,000	2,940
Interest Rate	20	53) Matched	Unmatched	OPTFYR32	CuPrincipal	FX	-5,000,000	-240,916
		54) Matched	Unmatched	TRDREF132	Counterparty	FX	5,000,000	300,428
Submitter		55) Matched	Matched	OPTH2LR9	CuPrincipal	FX	-1,000,000	-91,427
Counterparty	14	56) Matched	Matched	TRDREF141	Counterparty	FX	1,000,000	90,119
Principal	22	57) Matched	Unmatched	SL1T3K5U	CoPrincipal	Interest Rate	10,000,000	257,952
		58) Matched	Unmatched	TRDREF140	Counterparty	Interest Rate	-10,000,000	-351,748
		59) Manual	Unmatched	SL451PNP	CoPrincipal	Interest Rate	50,000,000	1,284,288
		60) Manual	Unmatched	TRDREF127	Counterparty	Interest Rate	-50,000,000	-1,705,892
		61) Matched	Unmatched	SL451PNS	CoPrincipal	Interest Rate	35,000,000	899,427

### Portfolio reconciliation

Integrated portfolio reconciliation tool that allows the user to quickly identify and manage any discrepancies between the user's and their counterparty's portfolios.

## Identify & communicate mismatches

Views		Actions		Settings		Multi Asset Risk System: Collateral			
10 Margin	12 Dispute	13 Interest	14 Reconciliation	RecStation Trade Details					
Hide Filters									
Reset Filters		Pair Status : Matched. NPV Status : Unmatched.							
Pair Status		Match Exceptions							
Unmatched		Field Name	Principal Value	Counterparty Value	Tolerance	Match	Text	Market Value	
Matched		Market Value	-2,489	2,940	10			-444,539	261,179
Manual								-33,490	-3,490
NPV Status		Field Name	Principal Value	Counterparty Value					
Unmatched		Principal	Bloomberg L.P.	Bloomberg SEF LLC	2,587				
N/A		Counterparty	Bloomberg SEF LLC	Bloomberg L.P.	465,907				
Matched		End Date	05/23/2020	05/23/2020	568,559				
		Trade Date	05/24/2016	05/24/2016	-9,809				
		Valuation Date	11/09/2016	11/09/2016	305,864				
Asset Class		Notional	-10,000	10,000	970,833				
CDS		Currency	XAU	XAU	142,936				
Common		Asset Class	FX	FX	159,057				
Equity		Asset Type	Option	Option	-94,321				
Interest		Market Value	-2,489	2,940	351,748				
		Mkt Val Base Ccy	-3,177,193	3,968,286	-2,489				
Submitter		00ZC402L06	5493003IUYOH354SNS58	2,940	2,940				
Counterparty		H254SNS58	5493003R56MDN7C407106	-275,406	300,428				
Principal				3,339	-22,467				

**Test User**

Thursday, November 10, 2016

Test User 2

10:49:34

PTC: RecStation

Principal Name: Bloomberg L.P.

Counterparty Name: Bloomberg SEF LLC

Status: Matched

Asset Class: FX

Product Type: Option

Notional: -10000

FIFV RSTN DTS MATCHID=OPTFYR28 Curncy\_20161109 <GO>

Test User 2

10:49:34

Please check the details of this trade

### Identify & communicate mismatches

Communicate reconciliation results with counterparties and internal colleagues using the built-in IB messaging tool.

# Connect to a holistic solution.

MARS Collateral is built on Bloomberg’s Multi-Asset Risk System risk engine, providing a truly holistic, one-stop solution for collateral management. MARS consolidates positions from individual securities pricers, such as SWPM, OVME, OVML, CDSW and DLIB, into easy-to-manage portfolios. The MARS pricing engine calculates the valuations on these positions, enabling users to run many different types of risk calculations and analytics.

Valuations are fed to MARS Collateral at a portfolio level and then run through a comprehensive margin calculation process, netting valuations and collateral positions at the collateral agreement level. Users are provided with an event workflow to easily send and receive margin calls, track disputes, settle interest and reconcile their positions with counterparties. The entire, end-to-end process takes place on the Bloomberg Terminal – eliminating the need to log-in to and manage several disparate applications.

**MARS Collateral Management connects you to:**

**Real-time data**

- Derivative and collateral positions are valued with accurate and up-to-date data
- All exposures and positions are calculated using market-leading Bloomberg data, avoiding the need to buy-in and integrate external resources

**Your documentation**

- Collateral documentation is captured field-by-field to ensure accurate calculation of margin calls
- LEDO <GO> holds collateral eligibility criteria and haircut schedules, thresholds, minimum transfer amounts and initial margin requirements

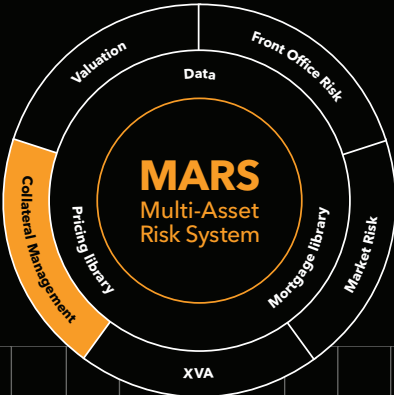
**The market**

- Auto-filled Bloomberg legal entity information and agency credit ratings in LEDO <GO> help provide real-time mitigation of credit risk
- Gain direct access to the latest market data, company news CN <GO> and trading systems (e.g., Swap Manager, SWPM <GO>)

**The financial community**

- Communicate with internal colleagues and external counterparties via Bloomberg’s chat and email tools, IB and MSG
- Easily add trade information to an IB chat and send it to internal or external parties, the so-called ‘Security Pill’ feature

**MARS Multi-Asset Risk System**



The Multi-Asset Risk System provides consistent and consolidated valuation, product lifecycle analysis, market risk, counterparty risk and collateral management.

MARS is powered by Bloomberg’s world-class pricing library, market data and mortgage cash flow engine and enables front-office, risk and collateral professionals to analyze their trading and investment portfolios, mitigate risk and prepare for the unexpected.

## Bloomberg Valuations

OTC derivatives	Cleared swaps	TBA	Repo	Listed derivatives
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## Bloomberg Collateral Management

Legal document manager		Collateral positions		
Margin calculator				
Margin management	Collateral optimization	Full asset inventory	Risk analytics	Reporting



## Electronic messaging



Custodian/CSD



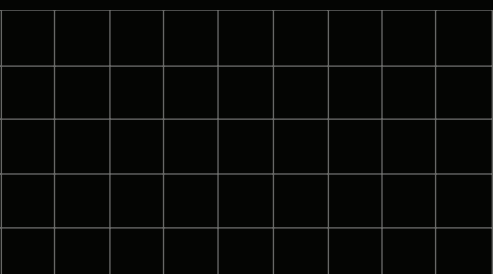
Reconciliation



Counterparty

### Learn more

To learn more about Bloomberg's risk solutions, visit **RISK <GO>** on the Bloomberg Terminal or contact us at [riskinfo@bloomberg.net](mailto:riskinfo@bloomberg.net).



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## Take the next step.

For additional information,  
press the <HELP> key twice  
on the Bloomberg Terminal®.

**Beijing**  
+86 10 6649 7500  
**Dubai**  
+971 4 364 1000  
**Frankfurt**  
+49 69 9204 1210

**Hong Kong**  
+852 2977 6000  
**London**  
+44 20 7330 7500  
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+91 22 6120 3600

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+1 212 318 2000  
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