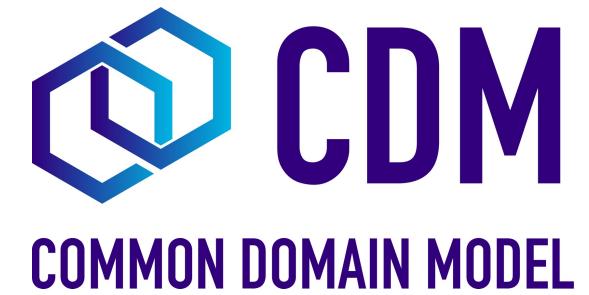


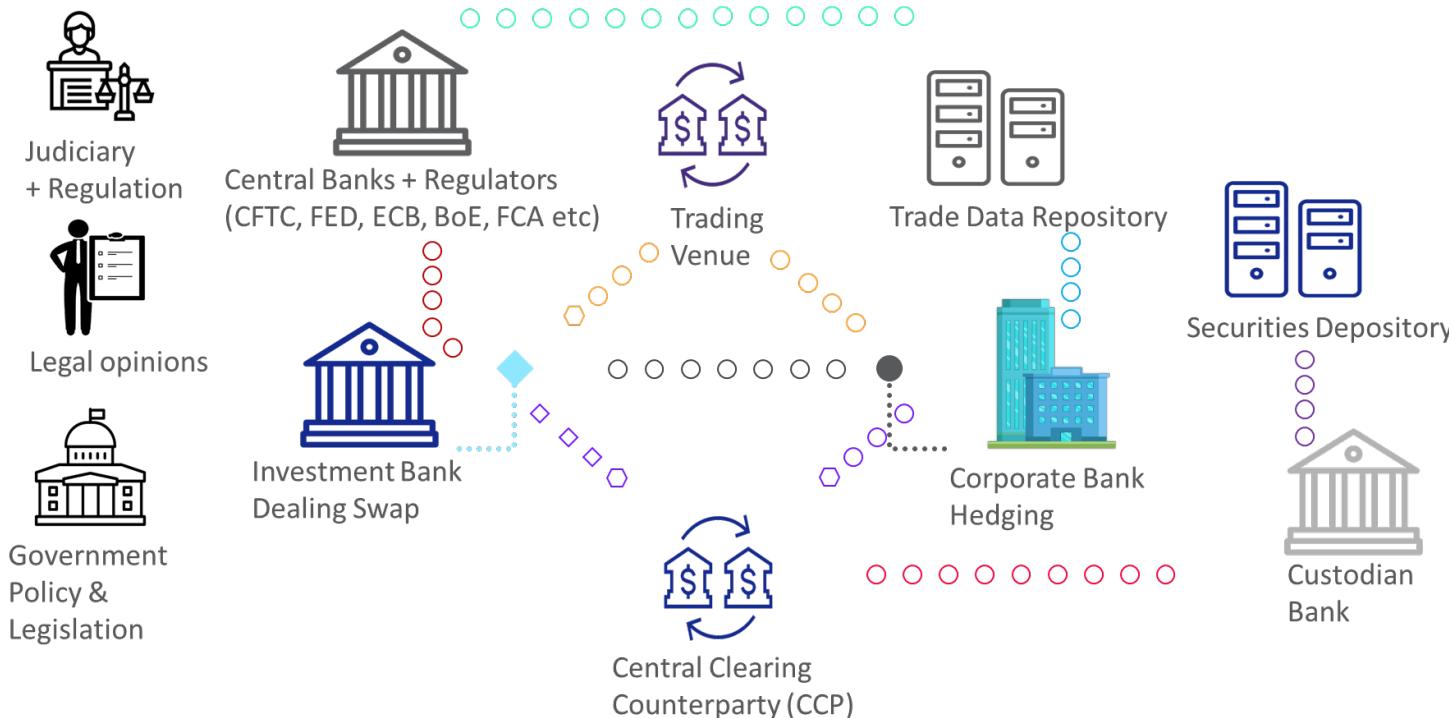
# Common Domain Model- An Overview

July 2024



# Catalyst for Change- Current Market Structure Challenges

All parties store trade data in different formats & make lifecycle changes to these records inconsistently



What is the true “truth” at any point in time?

**Differences in booking models lead to real world events in those models producing different outcomes:**

- **Reconciliation breaks**
- **Valuation differences**
- **Collateral disputes**
- **Reporting mismatches**
- **Operational inefficiency**
- **Settlement failures**
- **Barriers to automation**

# What is the CDM?

The Common Domain Model (CDM) is a standardised, machine-readable and machine-executable blueprint for how financial products are traded and managed across the transaction lifecycle.

## Dimensions of the CDM:

Product	Definitions of tradeable products qualified by their economic terms
Event	Data structures to represent the lifecycle events of financial transactions
Legal Agreement	Digital representation of the legal agreements that govern transactions
Process	Translates the technical standards that support those industry processes into a standardised machine-readable and machine-executable format
Reference Data	Reference data components that are specifically needed to model the other dimensions
Mapping	Mapped to a set of alternative data representations including FIX, FpML, ISO20022

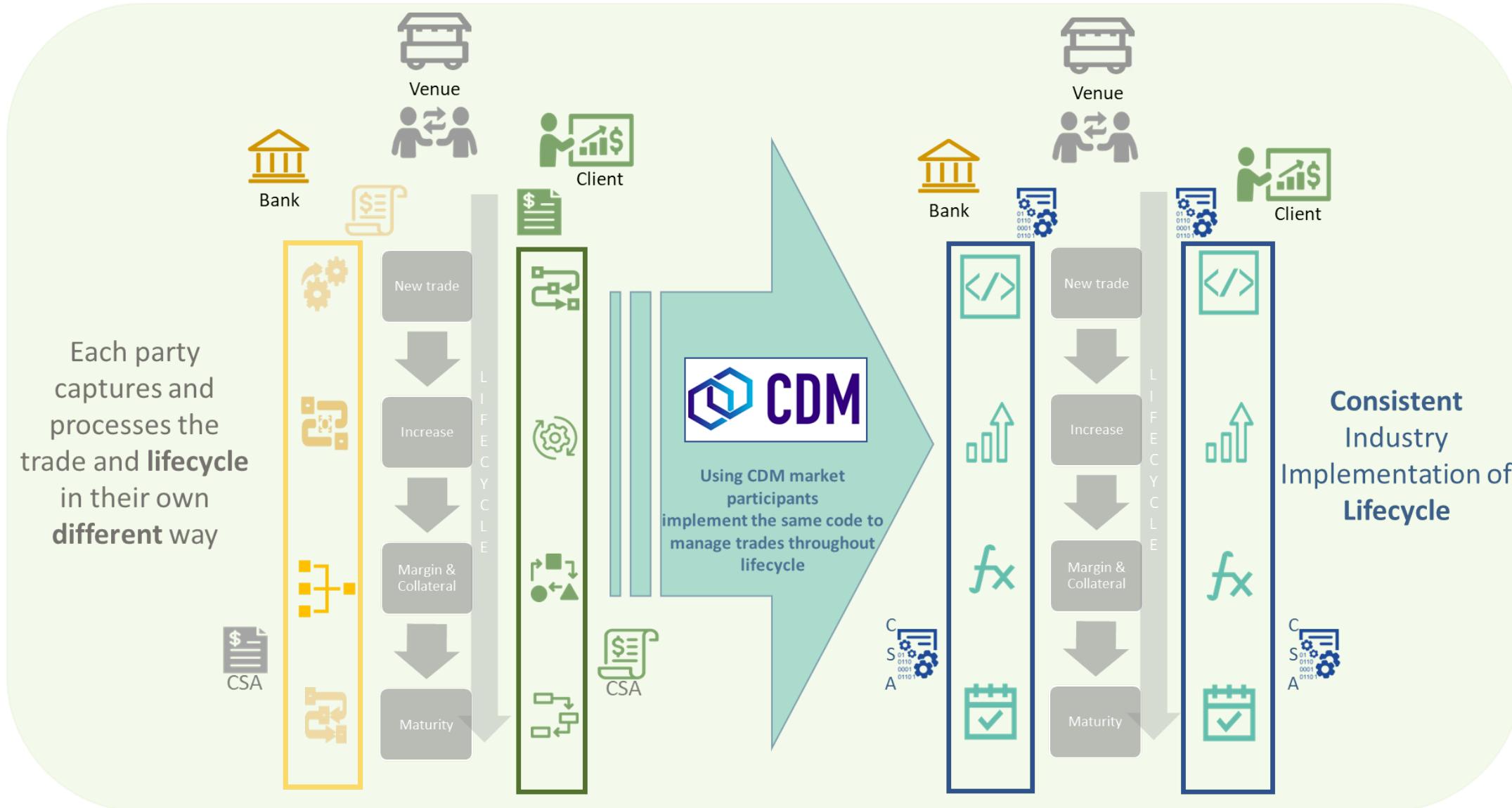
The CDM is **NOT** an application in and of itself, but can be implemented within one  
**Composability** allows for re-use of components for efficiency

# CDM vs. FpML

While both CDM & FpML are standards, they can and will co-exist

- CDM is not a data format for messaging or storage, it is a logical model describing relationships between pieces of data
- CDM can be expressed in various forms including XML, JSON and other standard formats such as FpML, FIX & ISO20022 for exchange and storage of information
- FpML does not define standards for event and workflow processing, CDM prescribes the validation logic to express these more specifically

# Benefits- Consistency of representation



# Core Benefits

## Efficiency

**Enhance interoperability, reduce reconciliations and promote straight-through processing**

## Transparency

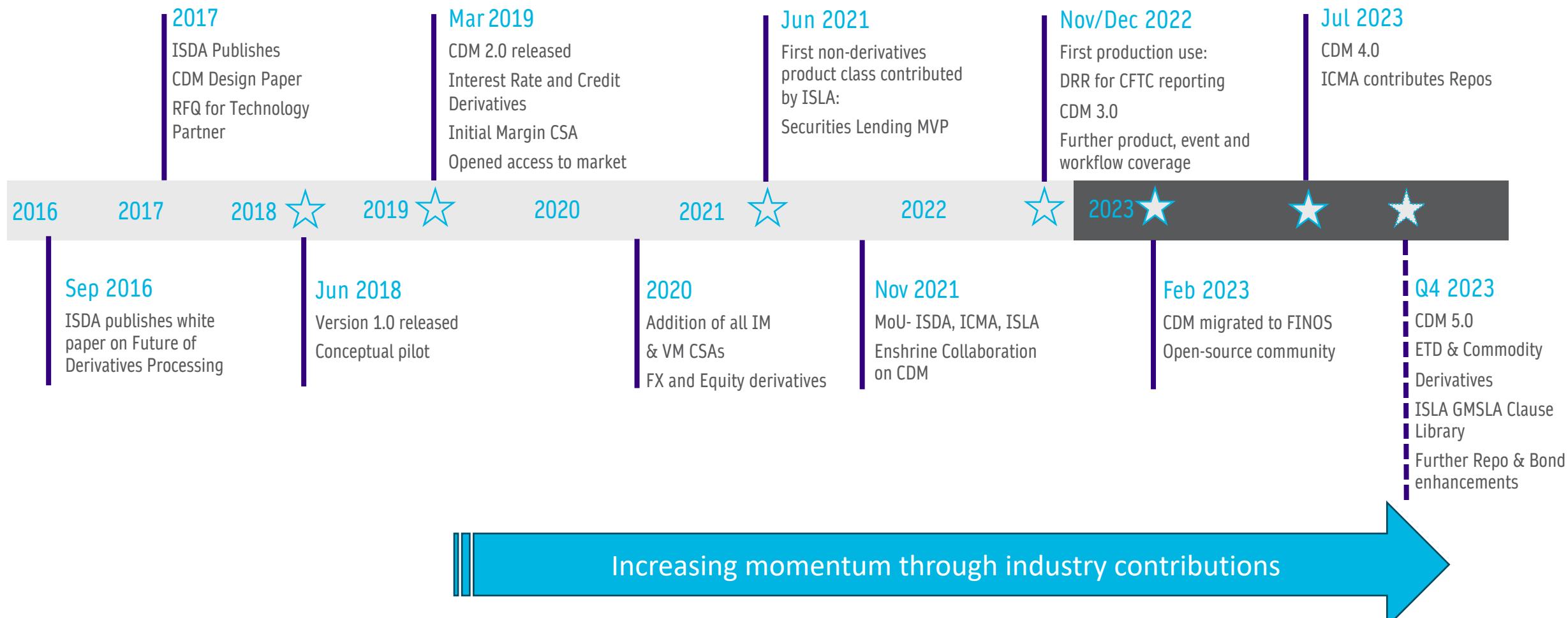
**Promote transparency and alignment between regulators and market participants**

## Accelerated Innovation

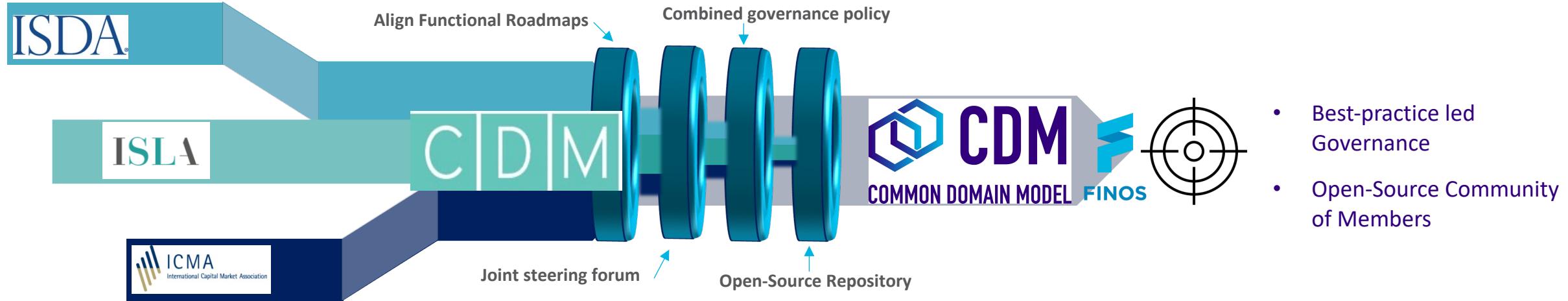
**Create an environment for innovation in financial markets**

- A mutualised free open-source standardised digital blueprint** on how to represent financial transactions, performance and business events.
- Extensible** to compose financial instruments by assembling reusable components. Already covers robustly derivative and securities financial transactions.
- Scalable** as event-driven model that encapsulates primitive components that will de facto make the fabric of complex business and operational processes.
- Operational and functional** to codify the contract mechanics and business logic of legal agreements.
- Unambiguous** in digitising functionally complex business and regulatory logic into code.
- Directly approachable** as published in both **human readable and machine executable languages**.
- Implementable across several strategic uses cases** in capital markets for better automation and greater consistency e.g. Trade management systems, clearing, digital documentation, collateral managements, regulatory reporting.

# History of the CDM



# Trade Association Collaboration



**Associations are collaborating towards the same future goal, to benefit the whole industry**

- An open-source model mutualises cost of development between TAs and contributing firms while retaining best practice governance
- MoU in 2021 enshrined collaboration publicly
- Working groups were opened to each others' members
- TAs appointed FINOS to provide a repository with a view to fostering the growth of an open-source community for the CDM, with migration completed early 2023

# Product Coverage

The scope of contractual products in the current model are summarized below:

- **Interest rate derivatives:**

- Interest Rate Swaps (incl. cross-currency swaps, non-deliverable swaps, basis swaps, swaps with non-regular periods, ...)
- Swaptions
- Caps/floors
- FRAs
- OTC Options on Bonds

- **Credit derivatives:**

- Credit Default Swaps (incl. baskets, tranche, swaps with mortgage and loans underliers, ...)
- Options on Credit Default Swaps

- **Equity derivatives:**

- Equity Swaps (TRS, PRS, single name/index/basket, VarSwap, VolSwap, Dispersion, Correlation, Dividend Swap)
- Options & Forwards

- **Foreign Exchange derivatives:**

- FX Swap, Forward, NDF, Options

- **Commodity derivatives:**

- Swaps, options, swaptions

- **Exchange Traded derivatives**

The use of common elements allow for representation of multiple types of products and events in the trade workflow with minimal incremental work. Thus, this coverage list does not represent an exhaustive list of all possible combinations of elements or events

# Product & Event Coverage

The scope of contractual products and events in the current model are summarized below:

- **Securities Lending:**

- Single underlier, cash collateralised, open/term security loan

- **Repurchase Agreements:**

- Open Term, Fixed Term, Fixed Rate, Floating Rate

- **Events:**

- Allocation, Re-allocation
- Cash, Security transfers, DVP settlement
- Clearing events
- Compression
- Increase and decreases/returns
- Novations- full, partial
- Terminations- full, partial
- Renegotiation
- Reset
- Execution
- Stock Split
- Index Transition
- Determination of corporate action and credit events

The use of common elements allow for representation of multiple types of products and events in the trade workflow with minimal incremental work. Thus, this coverage list does not represent an exhaustive list of all possible combinations of elements or events

# Legal Document Coverage



ISDA Documentation	CDM	ISDACreate	ISDACreate/ CDM Compatible
<b>INITIAL MARGIN</b>			
2016 ISDA IM CSD (English Law)			x
2016 ISDA IM CSA (NY Law)			x
2016 ISDA IM CSA (Japanese Law)			x
2018 ISDA IM CSA (NY Law)			
2018 ISDA IM CSD (Eng Law)			
2019 ISDA Bank Custodian CTA			
2019 ISDA Bank Custodian SA (NY Law)			
2019 ISDA Bank Custodian SA (Eng Law)			
2019 ISDA Bank Custodian SA Luxembourg Law			x
2020 ISDA Bank Custodian SA Belgium Law			x
2016 Euroclear SA (Bel Law)			x
2017 Euroclear CTA (NY Law)			x
2017 Euroclear CTA (Eng Law)			x
2018 Euroclear CTA (Eng Law)			x
2018 Euroclear CTA (NY Law)			x
2018 Euroclear SA (Bel Law)			x
2019 Euroclear CTA			
2019 Euroclear SA (Bel Law)			x
2016 Clearstream CTA (Eng Law)			x
2016 Clearstream CTA (NY Law)			x
2017 Clearstream SA (Lux Law)			x
2016 Clearstream SA (Lux Law)			x
2019 Clearstream CTA			
2019 Clearstream SA (Security-provider) (Lux Law)			
2019 Clearstream SA (Security-taker) (Lux Law)			

ISDA Documentation	CDM	ISDACreate	ISDACreate/ CDM Compatible
<b>VARIATION MARGIN</b>			
2016 ISDA CSA (VM) (Loan - Japanese Law)		x	x
2016 ISDA CSA (VM) (Security Interest - New York Law)			x
2016 ISDA CSA (VM) (Title Transfer - English Law)			x
2016 ISDA CSA (VM) (Title Transfer - French law)		x	x
2016 ISDA CSA (VM) (Title Transfer - Irish law)		x	x
1994 ISDA Credit Support Annex VM (Security Interest - New York Law)	In Development		x
1995 ISDA Credit Support Annex VM (Title Transfer - English Law)	In Development		x
1995 ISDA Credit Support Annex (Security Interest - Japanese Law)	x	x	x
1995 ISDA Credit Support Deed (Security Interest - English Law)	In Development		x
<b>ISDA MASTER AGREEMENT</b>			
1992 ISDA Master Agreement	See below		x
2002 ISDA Master Agreement	See below		CP details only
Automatic Early Termination ("AET")			x
Address for Notices			x
Dated as of Date			x
Credit Support Provider			x
Credit Support Document			x
Governing Law			x
Specified Entity			x
Termination Currency			x

ISLA have also contributed their Clause Library and Taxonomy for the GMSLA 2000/2010

# Roadmap 2024



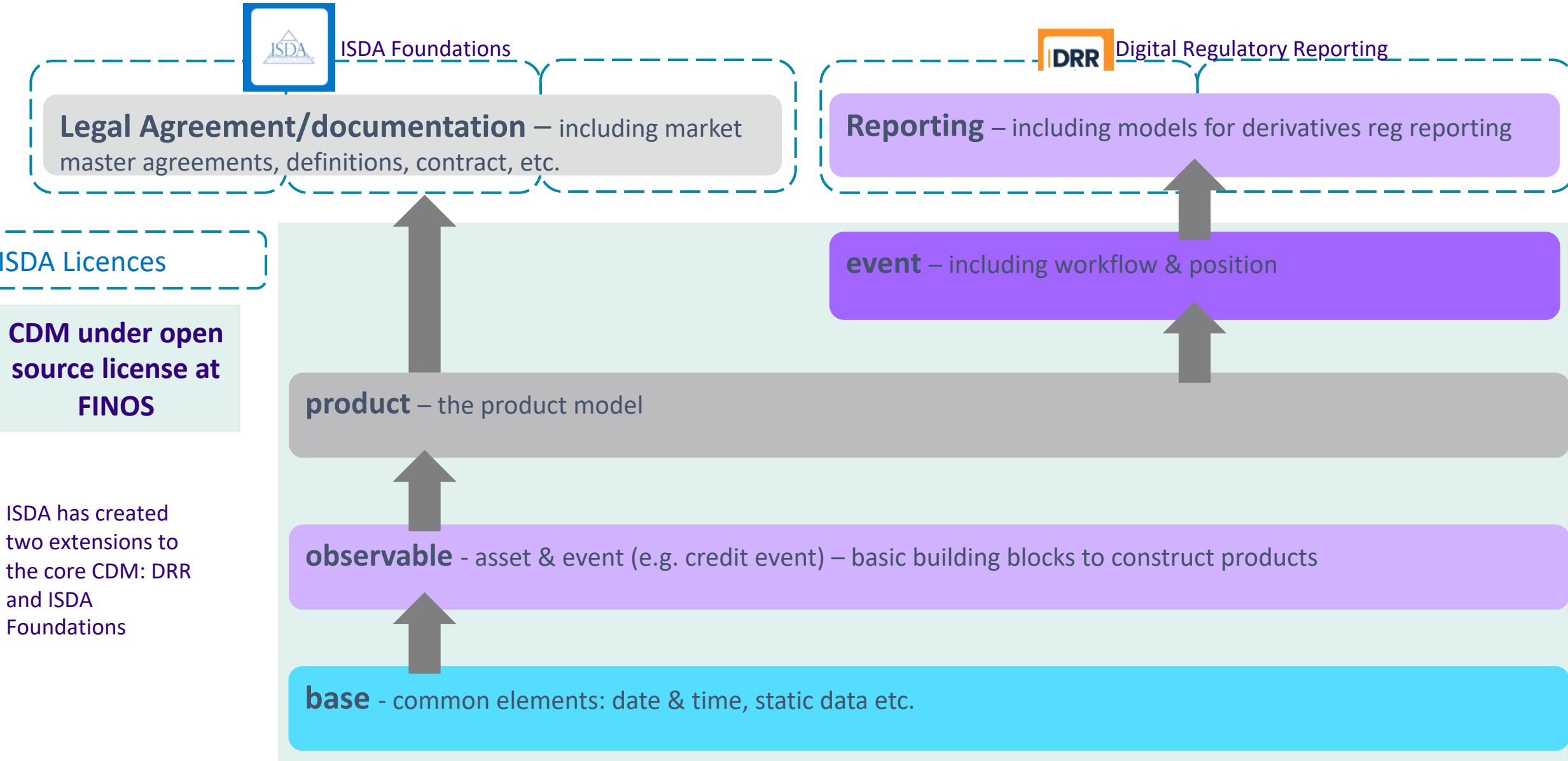
	Title/Topic	Chair	Q1	Q2	Q3	Q4	
Working Groups	Steering WG	David Shone, ISDA	- Complete governance updates	- Annual Review of governance- end June - Establish release schedule and process			
	Technical Architecture WG	Chris Rayner, ISLA	- Release build process moves to Github Actions	- Release build process moves to Github Actions -- Redesign Testing Process - Vision Statement - Prioritise initiatives	'- Serialisation Phase 1 begins - Ref data list management phase 1/2- TBC	- Serialisation Phase 1 complete - Ref data list management phase 3 TBC	
	Contribution Review WG	Rotating- trade associations	- Establish Release management process/bed in resources: Release Manager & Engineer - Release approval & review	- Release approval & review	- Release approval & review	- Release approval & review	
	-->Cross-product Modelling	N/A	- Product model changes: -- Asset & Observable refactoring [supports structured products and strategic fix for sec finance qualifications] -- Define product with contractdetails -- Redesign Product Qualification to separate economic qualification from product qualification	- Product model changes: -- Asset & Observable refactoring [supports structured products and strategic fix for sec finance qualifications]	'- Product model changes: -- Harmonise date/timestamp		
	Collateral WG	Vernon Alden-Smith, ISDA	- Extend ECS model - Repo collateral extension	Ongoing adoption support & WG prioritised items			
	Securities Lending WG	Chris Rayner, ISLA	Ongoing adoption support and WG prioritised items				
	Derivatives Product and Business Event WG	David Shone, ISDA	- Migrate to FINOS governance umbrella - Option payout refactoring (ETD/OTC) - Product enhancements driven by DRR - Member modelling proposals: Equity Swaps	- Member modelling proposals	- Member modelling proposals	- Member modelling proposals	
	Structured Products WG	Jean-Baptiste Ziade, Fragmos Chain	Ongoing structured product enhancements & WG prioritised items				
	ICMA Repo/Bonds WG	Gabriel Callsen, ICMA	Ongoing adoption support & WG prioritised items				
	Securities Finance Reg Reporting?	TBC					
	ISDA Legal Agreement WG	Vernon Alden-Smith, ISDA Ciaran McGonagle, ISDA	- Analyse and develop framework for remaining 20 clauses of legacy CSA agreements - Model 10 clauses of legacy CSAs analysed in 2023	Analyse and develop framework for remaining 20 clauses of legacy CSA agreements	Complete legacy CSAs in CDM and create test data	Complete legacy CSAs in CDM and create test data	
	ISDA DRR	Eleanor Hsu, ISDA Tabish Ahmed, ISDA	- DRR 4.0 Release: Complete coverage EMIR and JFSA - FCA dev complete target 30th March	- EMIR /JFSA Compliance Dates [1st/29th April] - ASIC & MAS dev complete target	- FCA compliance date- 30th Sept	- ASIC/MAS Compliance date- 21st October	

# Roadmap 2024

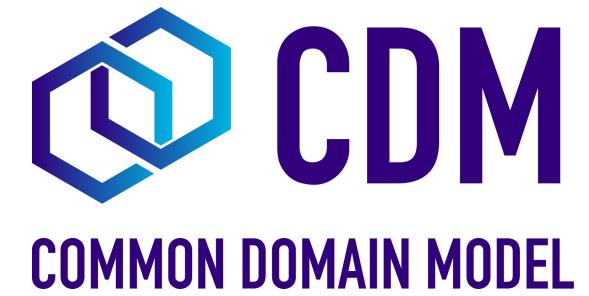


	Title/Topic	Chair	Q1	Q2	Q3	Q4
Adoption Support Framework	Documentation		<ul style="list-style-type: none"> <li>- Onboard shared documentation resource</li> <li>-Model Documentation: Securities Lending Use Cases</li> </ul>	<ul style="list-style-type: none"> <li>- Model documentation: Pre-trade securities lending user guide</li> </ul>	<ul style="list-style-type: none"> <li>- Model documentation: GMSLA user guide</li> </ul>	
	Website		<ul style="list-style-type: none"> <li>- All agreed governance updated on FINOS website</li> </ul>	<ul style="list-style-type: none"> <li>- Addition of recorded demos</li> </ul>	<ul style="list-style-type: none"> <li>- Consistency and accuracy exercise- website/github</li> </ul>	
	Support material		<ul style="list-style-type: none"> <li>- Consistently branded overviews</li> </ul>	<ul style="list-style-type: none"> <li>- Collateral getting started guide</li> <li>- Training course development</li> <li>- Tiered overviews</li> <li>- Business case templates</li> <li>- Reference implementations</li> </ul>	<ul style="list-style-type: none"> <li>-Expand getting started guides to other use cases</li> <li>- Develop certification/award system?</li> </ul>	
	Events		<ul style="list-style-type: none"> <li>- CDM Showcase London Feb 28</li> <li>- Informa Trade &amp; Transaction reporting Conf- 5th March</li> </ul>	<ul style="list-style-type: none"> <li>- London OSFF - June 26</li> <li>- ISDA AGM Tokyo 16-18th April</li> <li>- ISLA Annual Conf Geneva 18-20 June</li> </ul>	<ul style="list-style-type: none"> <li>- New York OSFF - Sept 30, Oct 1</li> </ul>	<ul style="list-style-type: none"> <li>- ISLA Post-Trade- Oct TBC</li> </ul>

# ISDA Extensions to CDM



## Use Cases

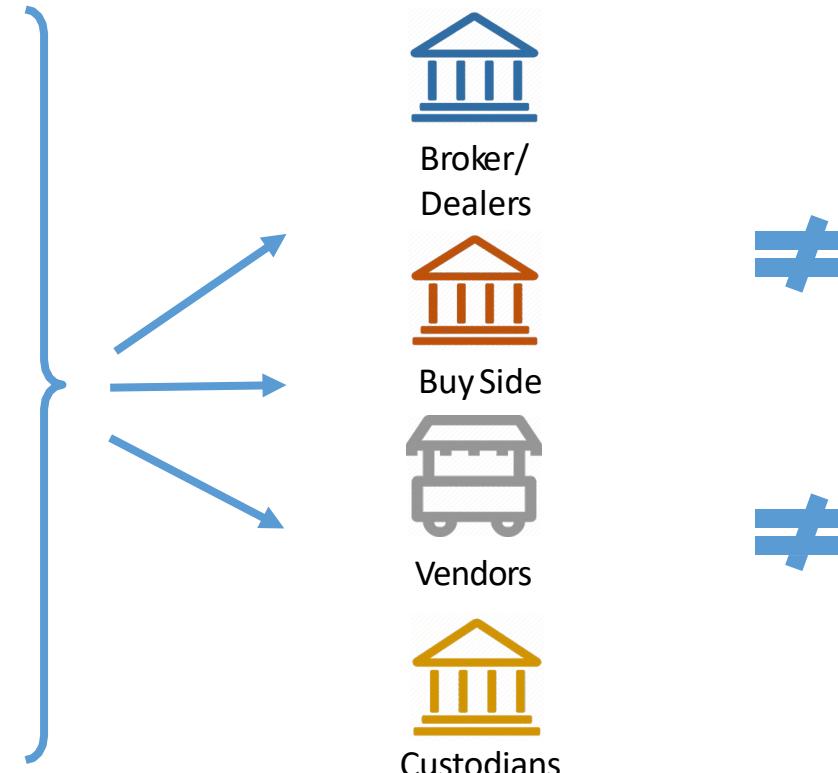


# Collateral - Today's Challenge

Guidelines outlined under BCBS/IOSCO and Basel III were translated by each regulatory regime spearheading collateral management as a key function in capital markets for both bilateral and cleared OTC. Compliance has increased processing volumes significantly and will continue to do so, the need for automation in collateral management processing. The industry is faced with many challenges which has led to fragmented implementations and operational inefficiencies.

## INDUSTRY PARTICIPANTS

- Calculation Dependencies**
- Margin Monitoring
- Margin Allocation
- Documentation
- Collateral Segregation
- Establishing Custody Accounts
- Eligibility Schedules
- Risk Control
- Optimisation
- Regulatory Compliance
- Reconciliation
- Dispute Management
- Efficient Settlement



- Lack of industry standards - Every industry participant left to implement their own version
- Loss of inter-operability between solutions
- Pervasive reconciliation issues and other operational inefficiencies

# Collateral- Documentation Model Representation 2020/2021



## ISDA COMMON DOMAIN MODEL (CDM) COLLATERAL DOCUMENTATION SUPPORTED

Q1/Q2 2020 Modelling of all IM including New Generation documents and elections found to negotiate in ISDA Create.

[Request an ISDA Create Demo](#)

Q3 2020 Additional Variation Margin(VM) Documentation

Now CDM offers digital representation of 30 Collateral documents covering over 100 unique election structures

[Access to the ISDA CDM portal](#)



### INITIAL MARGIN DOCUMENTS Published 2016 – 2019

ISDA X 10  
ISDA Clearstream X 7  
ISDA Euroclear X 8

2016 ISDA IM CSD (English Law)
2016 ISDA IM ISDA CSA (NY Law)
2016 ISDA IM CSA (Japanese Law)
2018 ISDA IM CSA (NY Law)
2018 ISDA IM CSD (Eng Law)
2019 Euroclear CTA
2019 Euroclear SA (Bel Law)
2019 Clearstream CTA
2019 Clearstream SA (Security-provider) (Lux Law)
2019 Clearstream SA (Security-taker) (Lux Law)
2019 ISDA Bank Custodian CTA
2019 ISDA Bank Custodian SA (NY Law)
2019 ISDA Bank Custodian SA (Eng Law)
2019 ISDA Bank Custodian SA Luxembourg Law
2020 ISDA Bank Custodian SA Belgium Law
2018 Euroclear CTA (Eng Law)
2018 Euroclear CTA (NY Law)
2018 Euroclear SA (Bel Law)
2016 Clearstream CTA (Eng Law)
2016 Clearstream CTA (NY Law)
2017 Clearstream SA (Lux Law)
2016 Clearstream SA (Lux Law)
2017 Euroclear CTA (NY Law)
2017 Euroclear CTA (Eng Law)
2016 Euroclear SA (Bel Law)

### VARIATION MARGIN DOCUMENTS Published 2016

ISDA Publications X 5

2016 ISDA CSA for (VM) (Loan - Japanese Law)
2016 ISDA CSA for VM) (Security Interest - New York Law)
2016 ISDA CSA for (VM) (Title Transfer - English Law)
2016 ISDA CSA for (VM) (Title Transfer - French law)
2016 ISDA CSA for (VM) (Title Transfer - Irish law)

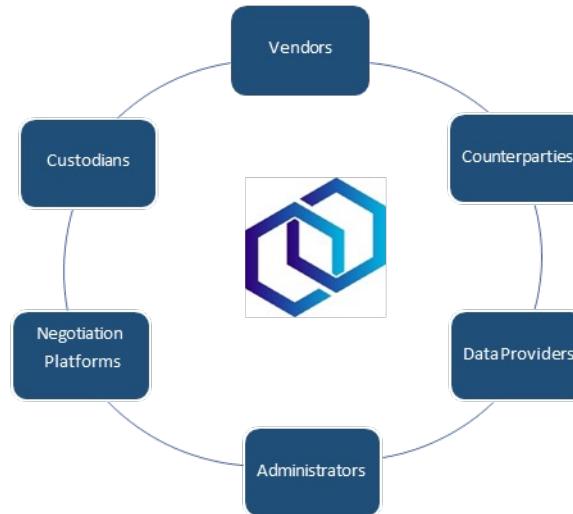
# Collateral- Benefits of CDM Standard Documentation

ISDA®  
create

IM CSA  
Negotiated  
between  
parties



Standard Representation Promotes Interoperability, Transfer of Clean Data and STP



Institutions can exchange CDM Standard for Documents including Eligibility Data to drive Collateral Processes

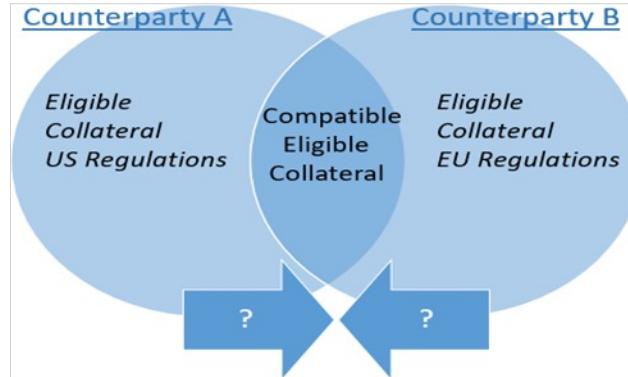
## Use Cases and Benefits

- Fewer Reconciliations, Translations
- Shorter Processes
- Reduced Negotiation Timeframes
- Improved Onboarding
- Decreased Settlement Risks
- Cost Effective
- Secure transfer of information
- Mitigates Margin Disputes
- STP from Negotiation to Settlement
- Produces Clean Auditible data
- Facilitates Digitizing Legacy Data
- Matching counterparty
- Standards for Eligibility Data
- Advance Optimization Processing
- Improved Custodian Services and Interoperability
- Advanced processing of Contract Amendments

# Collateral- ECS Challenges – No Standard Data Format

Challenges are observed today with constructing, negotiating and expressing ECS, many of these originate from lack of common data standards and the inability to connect process events.

- Observation of different regulations, agreeing on compatible eligible assets
- Challenges of collateral identity and categorization
- Understanding Asset economic identity to apply regulatory haircuts and confirm eligibility
- No common standards in place for representation of key features
- Currently no data standard used within documentation to describe the elements for eligible collateral – many versions observed:



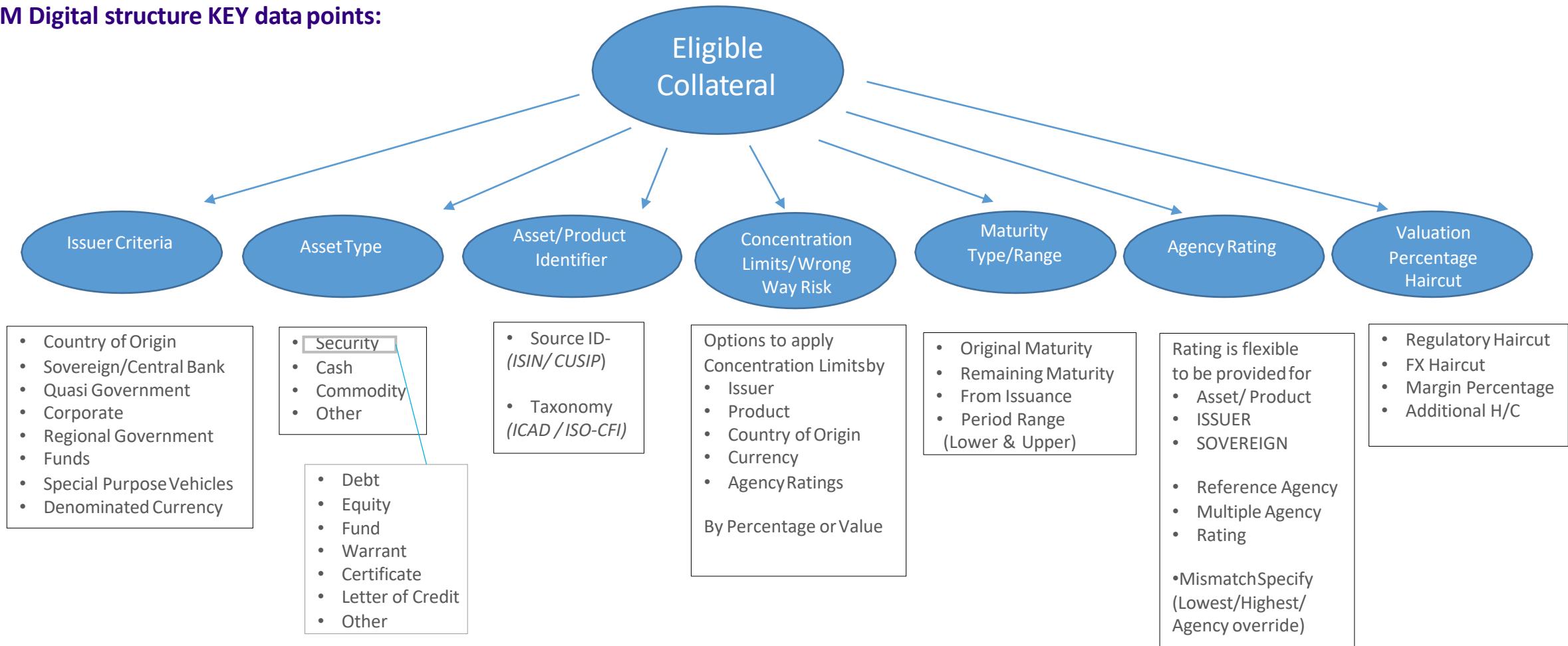
	Items of Eligible Collateral (IM) and Eligible Currencies	[In respect of Party A's posting obligation]	[In respect of Party B's posting obligation]	[Valuation Percentage]
(A)	[ ]	[ ]	[ ]	[ ]%
(B)	[ ]	[ ]	[ ]	[ ]%
(C)	[ ]	[ ]	[ ]	[ ]%
(D)	[ ]	[ ]	[ ]	[ ]%
[FX Haircut Percentage]		[In respect of Party A's posting obligation: [8]%, unless the Eligible Collateral (IM) is denominated in the Termination Currency specified with respect to Party B under the Agreement (including, without limitation, pursuant to this Annex), in which case, 0%).]		
[Termination Currency] <sup>10</sup>		[In respect of Party B's posting obligation: [8]%, unless the Eligible Collateral (IM) is denominated in the Termination Currency specified with respect to Party A under the Agreement (including, without limitation, pursuant to this Annex), in which case, 0%).]		
With respect to Party A: [ ].				
With respect to Party B: [ ].				
In relation to a calculation pursuant to Section 6(e)(ii)(2) in respect of an Early Termination Date resulting from a Termination Event where there are two Affected Parties: [ ].				

(ii) Eligible Collateral.					
Remaining Maturity					
	One (1) year or under	More than one (1) year up to and including five (5) years	More than five (5) years up to and including ten (10) years	More than ten (10) years	
ICAD Code					
GA-CA-GOV					
CA-TBILL	98%	N/A	N/A	N/A	
CA-BOND	97%	97%	95%	93%	
CA-RRB	98%	96%	94%	92%	
GA-US-GOV					
US-TBILL	98%	N/A	N/A	N/A	
US-TNOTE	98%	97%	95%	93%	
US-TBOND	98%	97%	95%	93%	

Eligibility criteria				
Order	Field	Oper	Value	Outcome
1	Security Types	=	Bond, Equity	Accepted
2	Counterparty Own Issue	=	Yes	Not eligible
3	Asset Types	=	Cash	Not eligible
4	Bond Risk Profiles	=	Sovereign, Agency, Structured, Corporate, Convertible bond	Accepted
5	IM asset class, EU	=	C, D, E, F, G, H, I, J, K, L, N, Q-NF, Q-FI	
	IM asset class, US	=	2, 3, 4, 5, 6, 7, 8, 9, 10	Eligible
Final outcome			If none of the above criteria have been met:	Not eligible
Haircut criteria				
Group	Order	Field	Oper	Value
1	1	Security Currency	Not in	EUR
		IM asset class, EU	=	C, D, E, H, I, J, K
	1	Time To Maturity Security	=<	12 Months
		Applied Rating	=	AAA LT, AA LT, AA LT, AA- LT
		IM asset class, EU	=	C, D, E, H, I, J, K
	2	Time To Maturity Security	>	12 Months
		Time To Maturity Security	=<	60 Months
		Applied Rating	=	AAA LT, AA LT, AA LT, AA- LT
		IM asset class, EU	=	C, D, E, H, I, J, K
	2	Time To Maturity Security	>	60 Months
		Applied Rating	=	AAA LT, AA LT, AA LT, AA- LT
		IM asset class, EU	=	C, D, E, H, I, J, K
	2	Applied Rating	=	A+, A, A-, BBB+
		Time To Maturity Security	=<	12 Months
Concentration limits				
Limit Type	Limit	Granularity	Field	Oper
Max	15.00 % 10,000,000.00 EUR	Per UPI	IM asset class, EU	=
				F, G, L, N, Q-NF
				Contract Collateral Basis

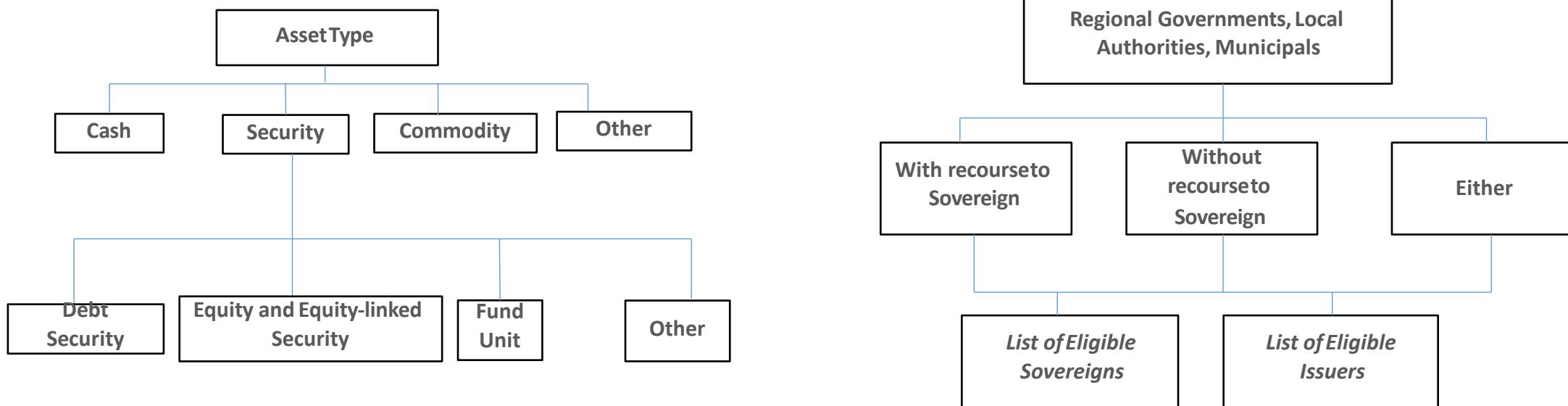
# Collateral- Eligible Collateral Schedules

## CDM Digital structure KEY data points:



# Collateral- Structure to define Asset Types and Identify Issuers

ISDA CDM will offer the flexibility to identify collateral asset types, with particular focus on securities, as most common form found in collateral schedules. However, this can be extended to cover many other assets.



With the functional flexibility to capture detail of its identity including specific issuer name and use of common identifiers

Other issuer types include:

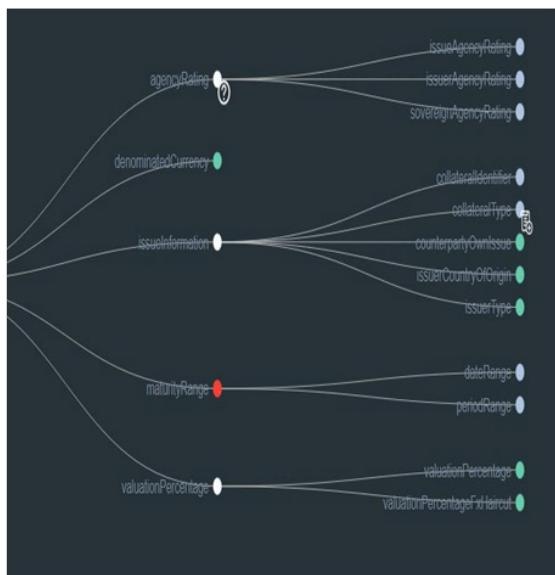
- Sovereign Central Banks
- Corporate
- Supranational Debt
- SPV and Funds

# Collateral- CDM Eligibility Schedules Representation

CDM offers standard data references points required for many industry forms of ECS. The structure enables consistent expression of data with the ability to apply various include/exclude rules and complex concentration limits. ISDA has demonstrated translation of several ECS provided by members into digital output

## CDM Digital Data Representation:

- Collateral Issue Information
- Collateral Asset Type
- Collateral Maturity Range
- Agency Rating
- Valuation Percentage
- Include/ Exclude Rules
- Concentration Limits



CSA Free Format Eligible Collateral Schedule

	Items of Eligible Collateral (IM) and Eligible Currencies	[In respect of Party A's posting obligation]	[In respect of Party B's posting obligation]	[Valuation Percentage]
(A)	[ ]	[ ]	[ ]	[ ]%
(B)	[ ]	[ ]	[ ]	[ ]%
(C)	[ ]	[ ]	[ ]	[ ]%
(D)	[ ]	[ ]	[ ]	[ ]%
[FX Haircut Percentage]				
[In respect of Party A's posting obligation: [8]%, unless the Eligible Collateral (IM) is denominated in the Termination Currency specified with respect to Party B under the Agreement (including, without limitation, pursuant to this Annex), in which case, 0%.]				
[In respect of Party B's posting obligation: [8]%, unless the Eligible Collateral (IM) is denominated in the Termination Currency specified with respect to Party A under the Agreement (including, without limitation, pursuant to this Annex), in which case, 0%.]				
With respect to Party A: [ ].				
With respect to Party B: [ ].				
[Termination Currency] <sup>10</sup>				
In relation to a calculation pursuant to Section 6(e)(ii)(2) in respect of an Early Termination Date resulting from a Termination Event where there are two Affected Parties: [ ].				

CDM Digital Data Representation



```
"product" : [ {  
    "collateralProductType" : [ {  
        "productType" : "CASH"  
    } ],  
    "denominatedCurrency" : [ {  
        "value" : "USD"  
    } ]  
},  
"valuationPercentage" : {  
    "valuationPercentage" : 1  
},  
,  
"product" : [ {  
    "maturityRange" : {  
        "lowerBound" : {  
            "inclusive" : true,  
            "period" : {  
                "period" : "Y",  
                "periodMultiplier" : 1  
            }  
        }  
    },  
    "maturityType" : "REMAINING_MATURITY",  
    "productIdentifier" : [ {  
        "productTaxonomy" : [ {  
            "taxonomySource" : "ICAD",  
            "taxonomyValue" : "US-TBILL"  
        } ]  
    } ]  
},  
"valuationPercentage" : {  
    "valuationPercentage" : 0.995  
}
```

# Collateral- Eligible Collateral Schedules

An Eligible Collateral Schedule is represented in the CDM through the specification of criteria that can be used to “filter” whether a piece of collateral is eligible or not.

Asset Type – is used to specify criteria related to the nature of the asset, such as its type (cash, equity, debt, etc), country of origin or denominated currency

Issuer Type – is used to specify criteria related to the issuer of the asset, such the type of issuer (government, corporate, etc), specific issuer name, or agency rating

Treatment – is used to specify the valuation percentage, any concentration limits and whether the criteria specify inclusion or exclusion conditions

The combination of these terms allows a wide variety of eligible collateral types to be represented and can be applied across industry use cases for OTC, Securities Lending, Repo, Cleared and ETD.s

Solving problems for Global Banks, Custodians, Data Providers, Vendors and connecting solutions.

Standard data for Eligible Collateral information facilitates DLT, Smart Contract and technology to be built to add further efficiencies to processes

# Collateral- CDM Object Builder

REGnosys on behalf of ISDA have developed a user interface (UI) this allows you to create CDM Eligible Collateral schedule information using drop down functions. The user can create, import, share or inspect in CDM JSON and view in a tabular format. The Object Builder will be contributed to FINOS in 2023

CDM Object Builder

CDM 4.0.0-dev.25

Builder Viewer

Select root type  
+ EligibleCollateralSchedule Represents a set of criteria used to specify an eligible collateral schedule.

EligibleCollateralSchedule

- + criteria EligibleCollateralCriteria (1..\*)
- + asset AssetCriteria (0..\*)
  - assetCountryOfOrigin string (0..\*) US +
  - + collateralAssetType AssetType (0..\*)
    - assetType AssetTypeEnum (1..1) Security
    - securityType SecurityTypeEnum (0..1) Debt
  - + maturityRange PeriodRange (0..1)
    - + lowerBound PeriodBound (0..1)
      - + period Period (1..1)
    - + upperBound PeriodBound (0..1)
  - + issuer IssuerCriteria (0..\*)

criteria	asset	assetCountryOfOrigin				US
		collateralAssetType			assetType	
maturityRange	lowerBound	period	period		SECURITY	DEBT
			periodMultiplier			Y
	upperBound	period	period		Y	1
issuer	issuerType	period	periodMultiplier			5
			periodMultiplier		CORPORATE	CORPORATE
	valuationTreatment	isIncluded	haircutPercentage			true
treatment	valuationTreatment	isIncluded	haircutPercentage		0.004	0.004

```
[{"criteria": [{}], "asset": [{"assetCountryOfOrigin": [{"value": "US"}]}, {"collateralAssetType": [{"assetType": [{"SECURITY": null}], "securityType": [{"DEBT": null}]}]}, {"maturityRange": [{"lowerBound": {"period": [{"Y": null}]}, "upperBound": {"period": [{"Y": null}], "periodMultiplier": 1}}]}]}
```

```
[{"upperBound": {"period": [{"period": [{"Y": null}]}]}, "periodMultiplier": 5}, {"issuer": [{"issuerType": [{"CORPORATE": null}]}]}, {"treatment": {"isIncluded": true, "valuationTreatment": {"haircutPercentage": 0.004}}}]}
```

The UI can be used for predefined common eligibility profiles to import and edit and producing industry compatible consumable data output. The current UI gives the user the ability to also validate and construct many version of eligible collateral as CDM data and has the scope to be development further and built into services for use cases beyond collateral

## Commitment to CDM Integration: Digital Documentation



**2021/22** – Technical Integration work with ISDA Create completed, and CDM standard format IM documentation available via Create API



**2019- 2023** – Continued support and input on CDM Collateral related representations  
**Focus** – VM & IM CSA, CSD and IM CTA, ISDA Master. Support CDM build for Legacy VM CSA  
**Q3 2024** – Analysis phase



**VERMEG**

**2021/22** – Workshops to assess compatibility, first-stage mapping and analysis for IM CSA  
**H2 2023** – Development in COBRA for CDM IM CSA ingestion to COLLINE  
**Q1 2024** – CDM connector (IM CSA) released to production in COLLINE ready for client use  
**Q2 2024** - Ongoing discussions with clients to deploy connector into production.



**For Calypso Solution:**  
**2022** – Mapping to CDM IM CSA representation completed and validated using test data  
**2023** – Testing import/export using data uploader tool; version 1 competed  
**2024** – Extend document coverage to Legacy VM



**2023** - Representation mapping and analysis for supporting selected CSA types feed in CDM format completed. Focus shifted to ECS for H1 2024  
**H2 2024** – Continue analysis and mapping to prepare for ingestion status. Potential to connect to service providers able to support CDM



**2023** – Mapping for CDM IM CSA coverage completed to deliver integration into Murex (CDM vs MX.3) First version of CDM agreement import available (without eligibility schedule and legacy fields)  
**2024** – Extend upon IM CSA CDM availability with mapping for Legacy CSAs once delivered to CDM



**Logical Construct**

**Focus** – CDM for representing IM, VM, Legacy CSA and Master Agreement data  
**2022/23** – Investigation into ability to round trip CDM data between Lyncs and ISDA Create for IM CSA  
**2024** – Ensure compatibility of CDM with internal model for Legacy VM CSA inc complex clauses. Production status/timeline dependent on clients interested in using CDM

## Commitment to CDM Integration: Eligible Collateral Representation



**2019- 2023** – Continued support and input on CDM Collateral related representations  
**Focus** – Eligible Collateral and concentration attributes (in legacy/regulatory CSA/CTA docs and Triparty ECS. Ability to compare and reconcile eligible collateral and concentration representations from any CMS or Collateral service providers  
**Q3 2024** – Analysis phase

CLOUDMARGIN

**Focus** – Delivery of an ingestion mechanism for all Eligibility terms in CDM format  
**H2 2023 / 2024** – Integration analysis completed in 2023, including workshops held with CDM. ECS mapping exercise in progress, to enable complex eligibility terms ingestion into CloudMargin in CDM format



**Focus** – Build CDM translator for Eligible Collateral terms for 2- way client transfer via API  
**2021/2** – Phase1 ECS representation mapping analysis completed  
**2022/23** – Stage 2 technical mapping into application import/export functionality  
**2023/24** – Functionality release pending launch; dependent on connecting firms to support CDM



**2024** – Extension for Eligible Collateral in 2024, internal effort to re-build eligibility model leveraging CDM foundational structure



**2024** – Focus on Collateral Eligibility Schedules and continued support through CDM working groups with model development



**2022/23** – Continued support, input to workshops and contribution to CDM Eligible Collateral terms/conditions  
**2024** – Analysis for integration and model mapping of collateral eligibility terms, and pilot test with connecting client for POC.



**2024** – As part of the full representation of legal agreement, the CDM Eligible Collateral schedule use case would be in scope for clients wishing to connect using CDM. Logical Construct will continue to support through CDM working groups



**For Calypso Solution:**  
**Focus** – Redesign eligibility framework to extend clients options to include a CDM compliant version  
**2024** - Analysis for CDM Eligible Collateral model started



**Focus** - Integrated CDM collateral data into FIA Tech's Databank collateral schema, allowing for interoperability for end users consuming this data  
**H1/2024** - Establish mappings between FIA Tech's collateral schema and corresponding fields in CDM; FIA Tech to produce new file format which integrates CDM mappings daily

# Collateral- CDM Margin Call / Positions / Balances and Exposure

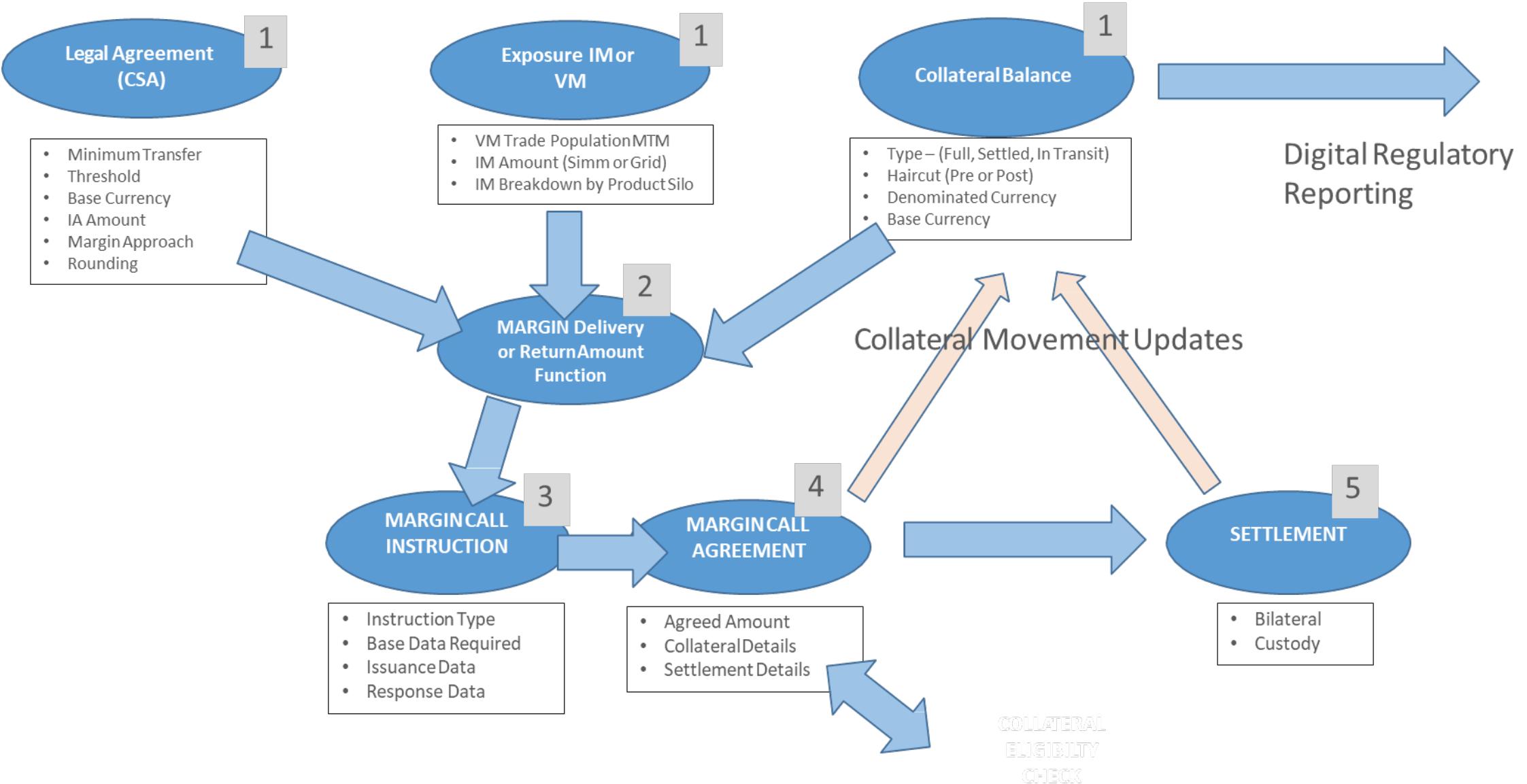
Data to support the Collateral Margin Call process and its related components for Collateral Balance , Collateral Positions and Exposure are now represented in the CDM.

A foundational structure to support the data required for the margin call process including:

- Standard margin call action labels
- Base details for margin call data types and attributes to support unique features for issuance and response
- Collateral positions and ability to list collateral assets for responding to margin demands and for information purposes
- Collateral balance data requirements and aggregate values for margin call data and reporting



# Collateral- Margin Call connection to other CDM components



# Collateral- Processing Standards in CDM- What next?



## 2023/2024 - CDM Collateral Initiatives

### Objectives:

#### Documentation Extensions:

1995 VM CSA

ISDA Master Agreement

Amendment Agreements

Support Adoption of CDM Documentation and ECS into Production Environments of External Platforms

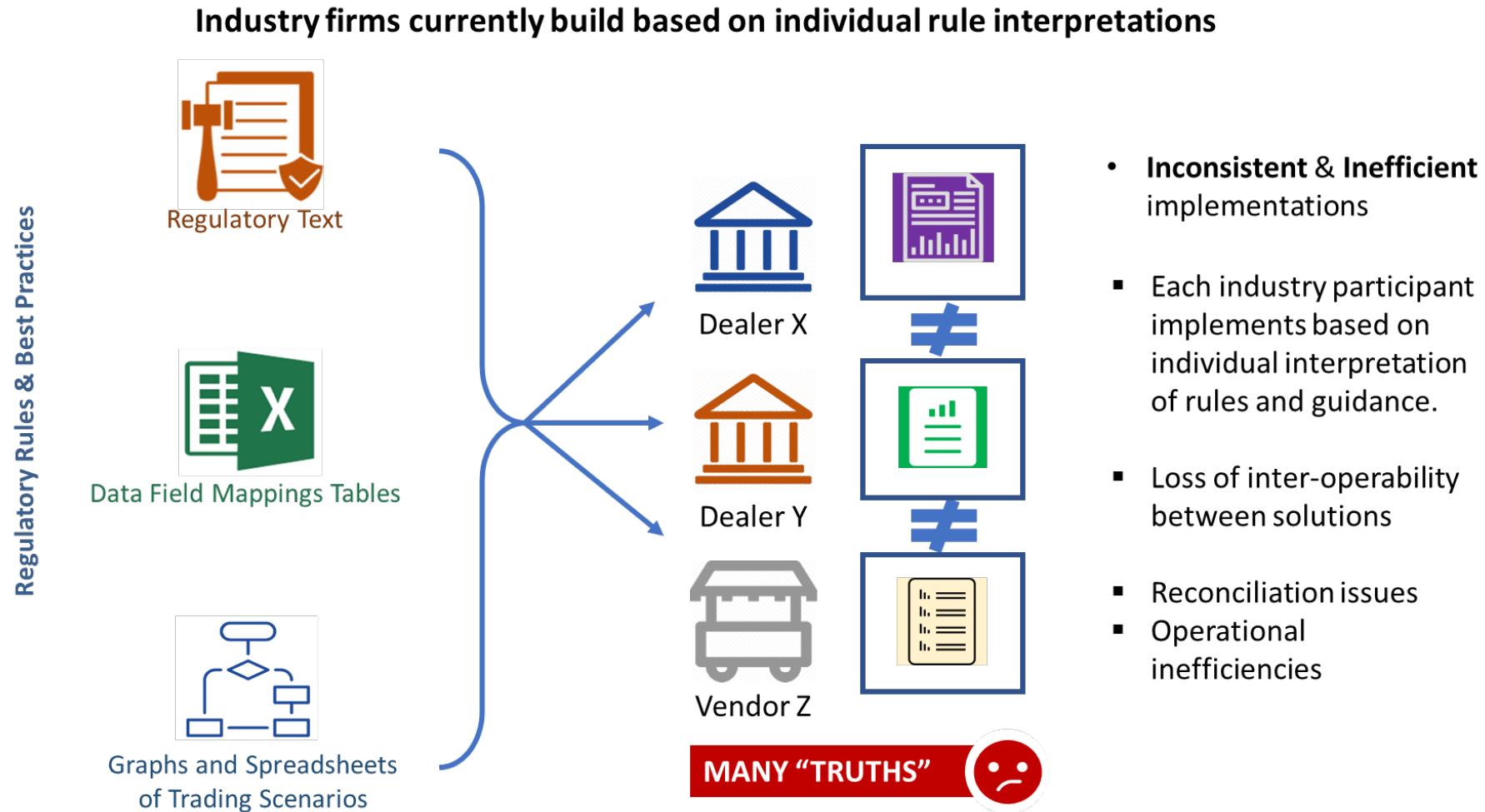
Validate CDM Data Structure for Margin Call Issuance and Response Standards

Engage with Members for Support and Adoption

Collaboration with other Trade Associations to extend CDM

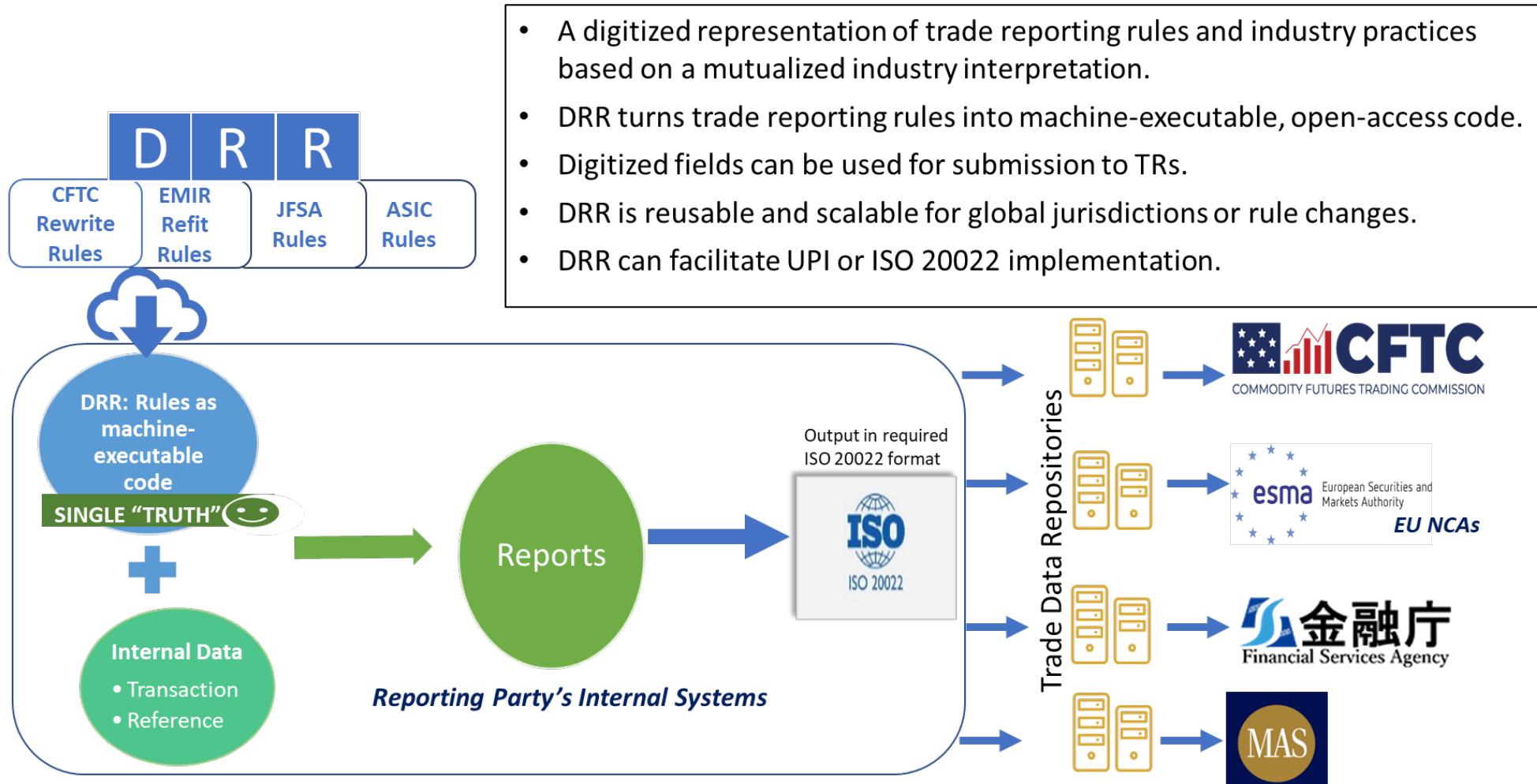
Repo and Securities Lending Collateral Process

## Trade Reporting Rule Implementation Today



# Digital Regulatory Reporting

## Trade Reporting Rule Implementation Using the DRR



## Trade Reporting Rule Implementation Using the DRR

### Mutualize regulatory reporting compliance effort

- Rule interpretations and compliance effort is spread across the industry

### Gives you an unambiguous rule interpretation

- Reflects rules, guidance and industry best practices in an unambiguous way within the DRR model

### DRR is open-access and increases transparency

- The DRR will be accessible to regulators and market participants

### Defines core regulatory reporting ruleset only once

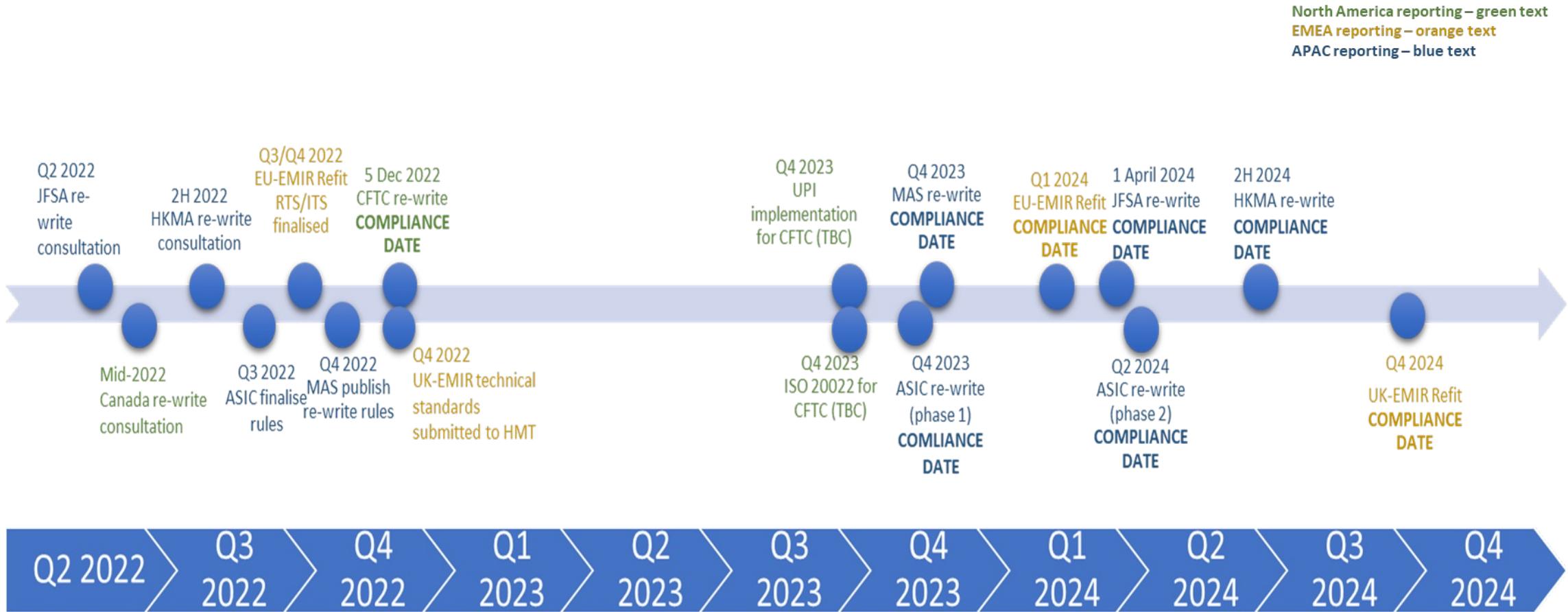
- Thereafter, only incremental efforts are required to extend the DRR model to other jurisdictions and future changes to reporting rules
- And such updates will be delivered through centralized DRR model changes

### Significant resource and cost savings

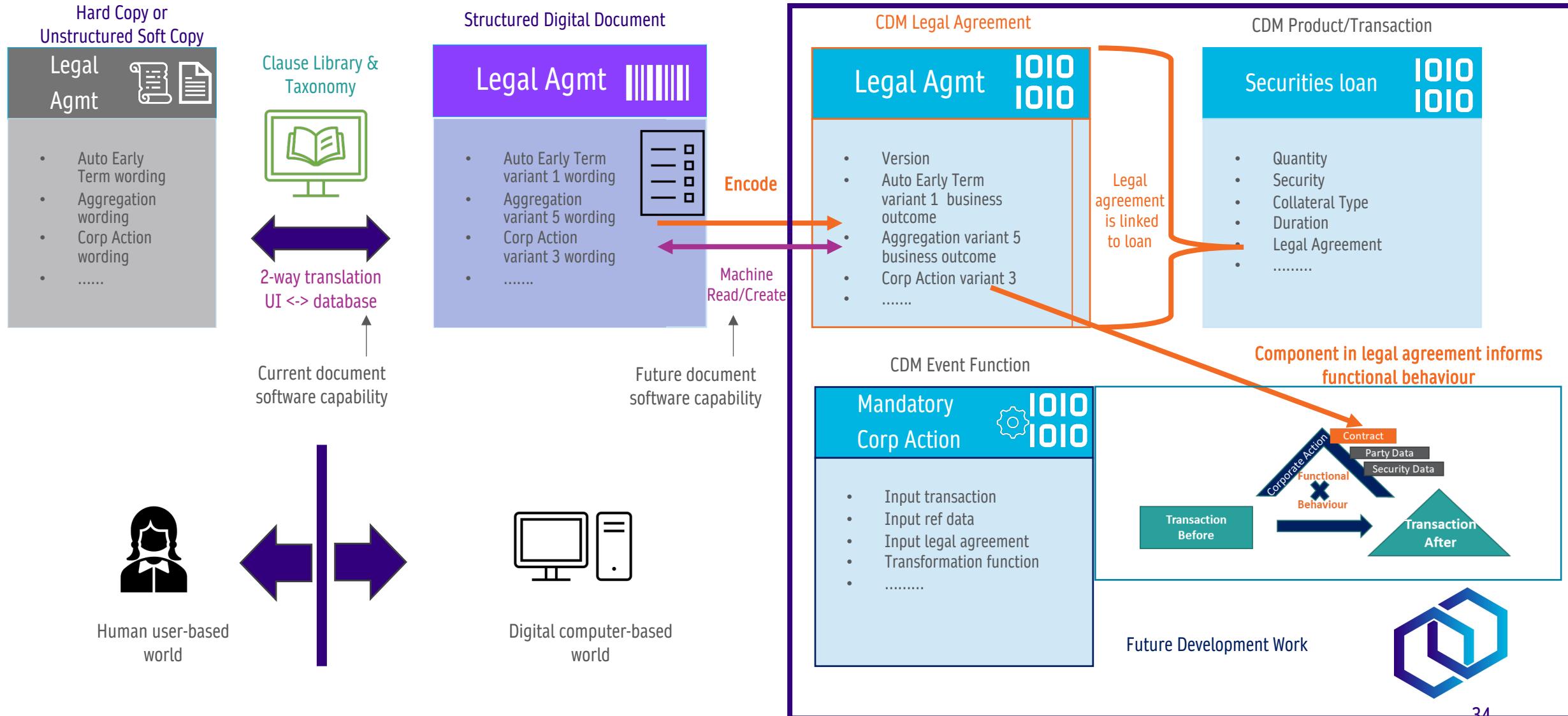
- Through the mutualized effort, firms leveraging DRR using the CDM will reap significant compliance, reporting and implementation project savings

# Digital Regulatory Reporting

## DRR Roadmap

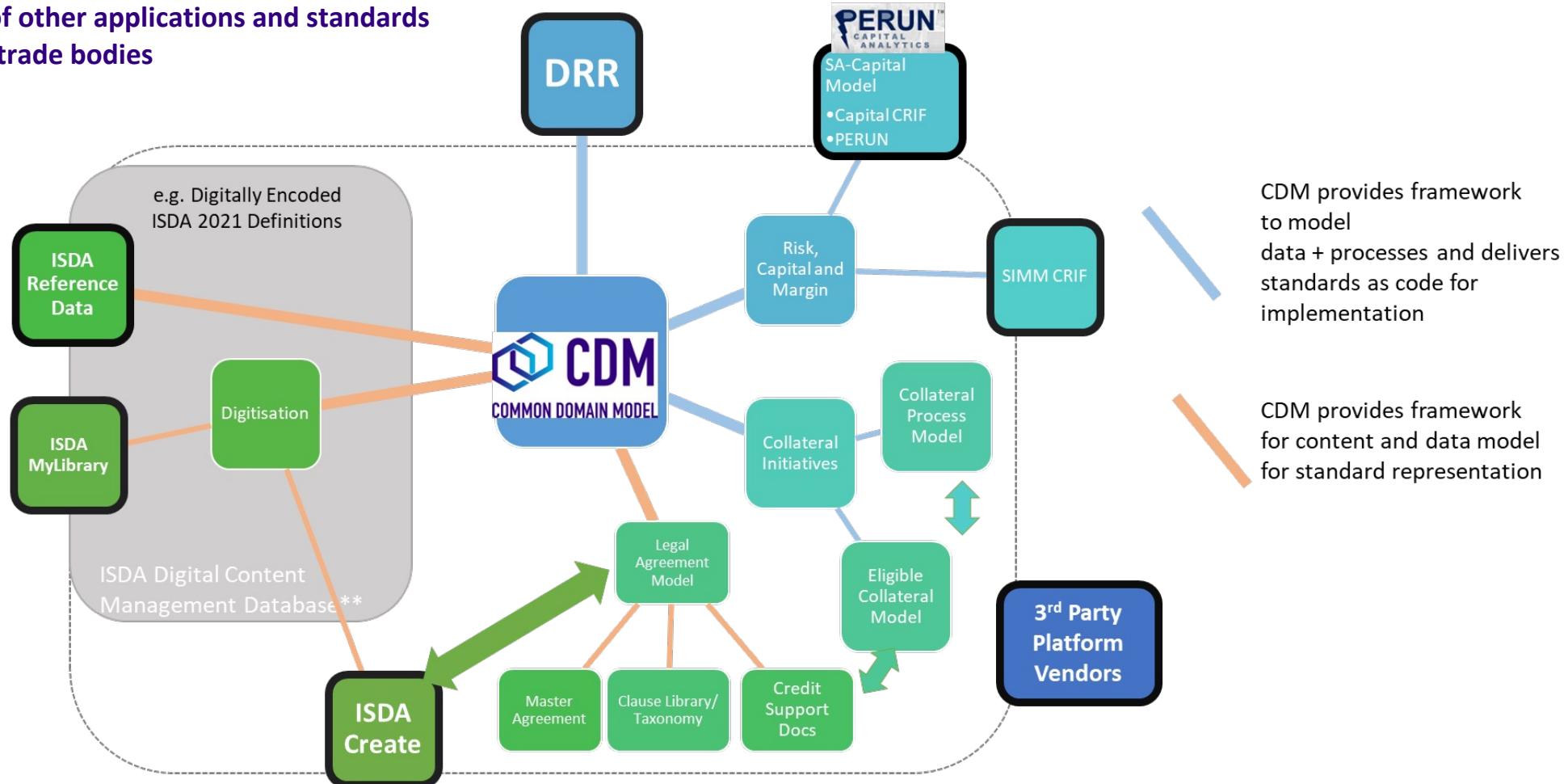


# Integrating CDM and Legal Agreements



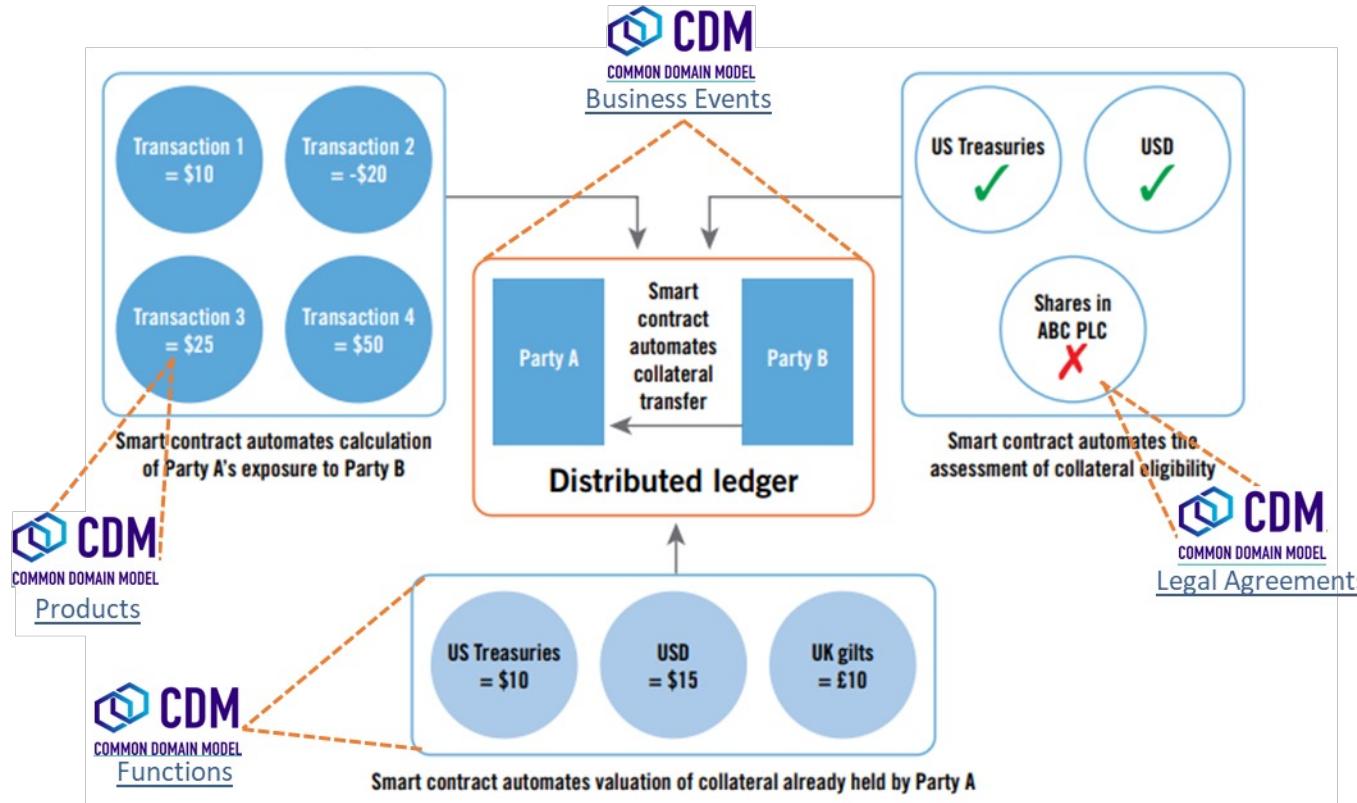
# Further Use Cases: Ecosystem

CDM presents opportunities to interact with entire eco system of other applications and standards provided by trade bodies



# Further Use Cases: Smart contract technology support

**Use case:** Aid the consistent and robust implementation of smart derivatives contracts applications and related upcoming technologies



- Many collateral processes such as:
  - The valuation of exposure and margin requirements;
  - Assessing collateral eligibility;
  - Exchange and return of collateral assets,
  - use conditional logic and could benefit from increased automation.
- This example provides an illustration of a potential smart derivatives contract construct that is designed to automate certain aspects of the collateral management process.

# Further Use Cases

Integration with CRIF standard for FRTB, SIMM, and SA-CVA reporting

Transcribe legally prescribed functional clauses from ISDA Def into machine readable and human readable codified functions

Facilitate more efficient re-use of data e.g. data template for large volume of increases of an Equity portfolio swap

Set a standard for the efficient digitalisation of collateral related margin process

Assert and mutualise the standardised encoding and capacity for implementation of legal clauses supporting the life cycle events of derivative transactions.

Express the CCP clearing handbook book that regulates the registration and clearing of a transaction into a machine readable and executable code that can be automatically generated.

Support more consistent implementation of market infrastructures processes such as clearing in tally with upcoming new innovative technologies (DLT, Cloud, Smart Contract, etc)

Match and store consistent trade representations that feed in “real time” FO trading systems using DLT and detect inconsistencies if any.

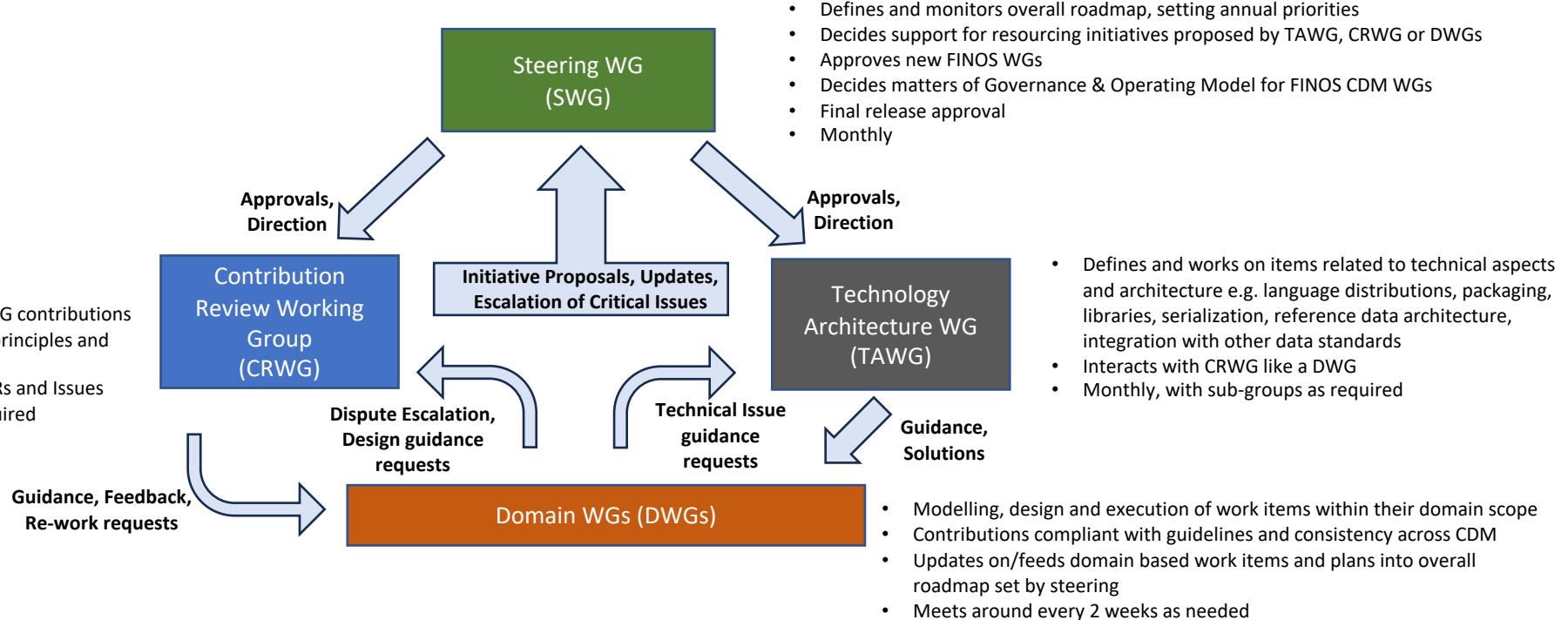
Aid the standardized representation of SSIs

Get Involved



# How to get involved- Community Structure

- Assembles releases
- Initial release proposal approval
- Arbitrates disputes arising from DWG contributions
- Guardians and enforcers of design principles and guidelines
- Triage and facilitates long-dated PRs and Issues
- Fortnightly, with sub-groups as required



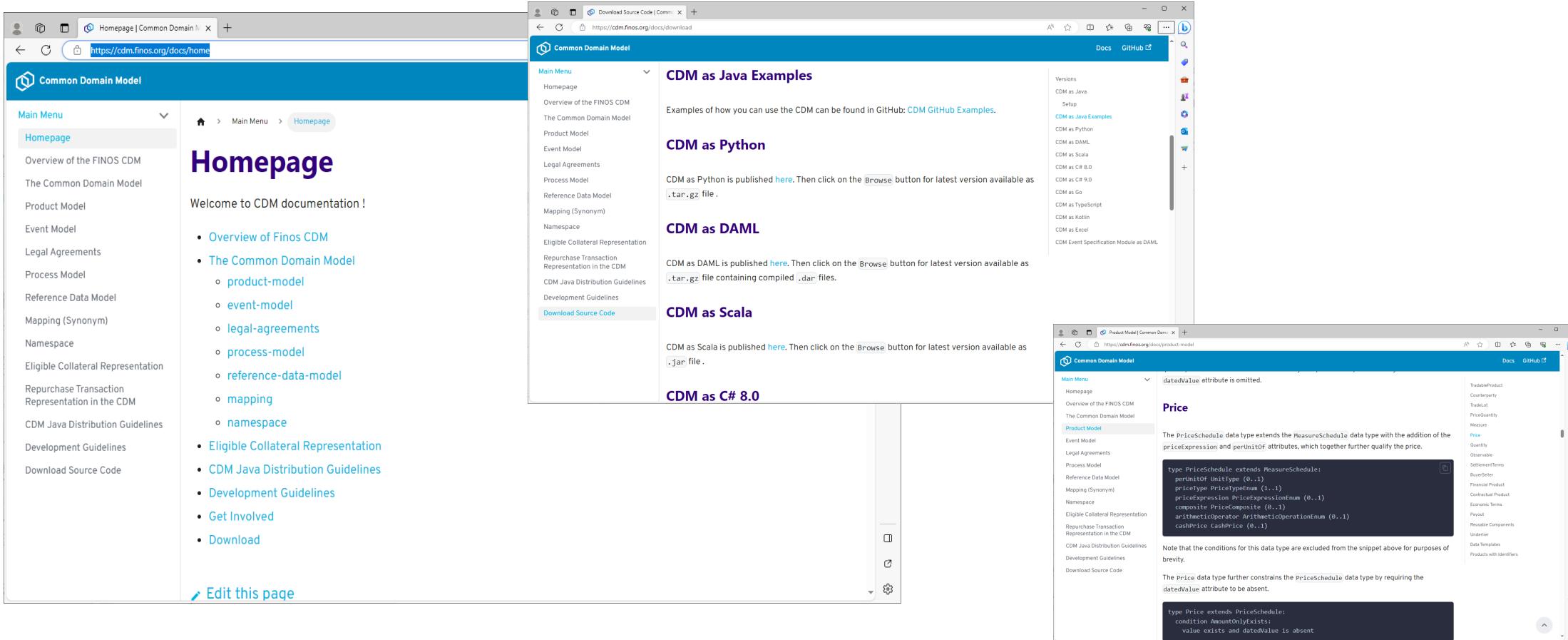
## List of DWGs & their Scope as at Mar 24:

- Collateral- *Collateral schedules & processes*
- Repo & Bonds- *Repo & bond products*
- Securities Lending- *Securities Lending*
- Derivatives Products and Business Events (DBPE)- *Derivatives products of a non-structured/exotic nature*
- Structured Products- *Structured & Exotic Derivatives*
- DRR Peer Review- *Digital Regulatory Reporting (Derivatives regimes)*
- ISDA Legal Agreements- *ISDA Legal Agreement modelling*

[FINOS groups](#)
[ISDA WGs](#)
[ISLA WGs](#)
[ICMA WGs](#)

# How to get involved

Info hub for FINOS including user documentation downloadable distributions: [Homepage | Common Domain Model \(finos.org\)](https://cdm.finos.org/docs/home)



The screenshot displays two browser windows side-by-side. The left window shows the FINOS CDM homepage (<https://cdm.finos.org/docs/home>) with a sidebar menu and a main content area featuring sections like 'Welcome to CDM documentation!', 'Overview of Finos CDM', and 'Get Involved'. The right window shows a detailed page titled 'CDM as Java Examples' (<https://cdm.finos.org/docs/download>). This page includes a sidebar with links for various language distributions (Java, Python, DAML, Scala, C#, Go, TypeScript, Kotlin, Excel, and Event Specification Module) and a main content area with sections for 'CDM as Java Examples', 'CDM as Python', 'CDM as DAML', 'CDM as Scala', and 'CDM as C# 8.0'. The 'CDM as Java Examples' section contains a snippet of Java code for the `PriceSchedule` class. The rightmost portion of the screenshot shows another part of the documentation, likely a 'Product Model' page, with a sidebar and a main content area containing a snippet of Java code for the `Price` class.

**CDM as Java Examples**

Examples of how you can use the CDM can be found in GitHub: [CDM GitHub Examples](#).

**CDM as Python**

CDM as Python is published [here](#). Then click on the [Browse](#) button for latest version available as `.tar.gz` file.

**CDM as DAML**

CDM as DAML is published [here](#). Then click on the [Browse](#) button for latest version available as `.tar.gz` file containing compiled `.dar` files.

**CDM as Scala**

CDM as Scala is published [here](#). Then click on the [Browse](#) button for latest version available as `.jar` file.

**CDM as C# 8.0**

```
datedValue attribute is omitted.
```

**Price**

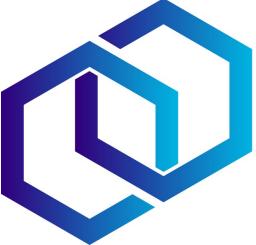
The `PriceSchedule` data type extends the `MeasureSchedule` data type with the addition of the `priceExpression` and `perUnitOf` attributes, which together further qualify the price.

```
type PriceSchedule extends MeasureSchedule:  
    perUnitOf UnitType (0..1)  
    priceType PriceTypeEnum (1..1)  
    composite PriceComposite (0..1)  
    arithmeticOperator ArithmeticOperationEnum (0..1)  
    cashPrice CashPrice (0..1)
```

Note that the conditions for this data type are excluded from the snippet above for purposes of brevity.

The `Price` data type further constrains the `PriceSchedule` data type by requiring the `datedValue` attribute to be absent.

```
type Price extends PriceSchedule:  
    condition AmountOnlyExists:  
        value exists and datedValue is absent
```



# CDM

## COMMON DOMAIN MODEL

The Common Domain Model is brought to you by:

