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CDM: The Road to Adoption

CDM Use Cases | February 2025

Introduction

The Common Domain Model (CDM) is an open-source model hosted by the Fintech Open-Source Foundation (FINOS)[1]. It is a standardised, machine-readable, and machine-executable model that represents financial products, trades in those products, and the lifecycle events of those trades[2].

The model delivers a standardised framework designed to enhance the efficiency and interoperability of financial services, particularly in the context of regulatory reporting and data management. As the CDM provides common definitions and structures for financial data and processes, it plays a crucial role in building resilience, reducing risks, and improving efficiency within financial markets and institutions.

Hosted by FINOS and developed through their Community Specification[3] open governance process, the CDM is an open market standard available to all. Maintained by financial professionals and trade associations (ICMA, ISDA and ISLA[4]), the standard is continually being expanded and improved by the financial community.

The document outlines some of the ways the CDM can be utilised by the financial industry to improve, amongst other things, trade efficiency, regulatory compliance and collateral management. We believe that the use cases and benefits of the CDM described in this paper will help address much of the evolving landscape within securities lending and foster more effective and stable financial markets.

Using existing applications of the CDM we are able to illustrate each of the benefits on the next page.

How the CDM Improves Financial Markets

RESILIENCE

By providing a freely available market standard for the representation of data and processes, the CDM reduces the risk of errors and discrepancies that can arise from using multiple formats and definitions for different purposes and different service providers. Institutions using the CDM are able to develop robust contingency frameworks to manage operational risk by ensuring that all third parties can access and utilise the same data effectively. In the event of a significant market disruption institutions can more easily utilise alternative services or applications so as to minimise disruption to critical services. This substantially improves market resilience.

TRANSPARENCY

Through standardised reporting frameworks, the CDM brings consistent transaction representation, thus removing ambiguity, and making it easier for financial institutions to adapt to and meet existing and new regulatory obligations. The open-source nature of the CDM also provides regulators with full transparency over the code and governance of the model.

OPERATIONAL EFFICIENCY

Using workflows native to the CDM, institutions can utilise the model's data definitions and event functions to automate their processes, significantly reducing friction between systems and facilitating accelerated transaction processing. This standardisation and union of data, events and workflows within the CDM enhances interoperability between systems, which in turn promotes seamless data sharing and integration across different reporting regimes and all stakeholders.

DATA QUALITY

The machine-readable data and machine-executable functions in the CDM remove all bias and ambiguity in the data. Data quality is still the number one issue for both regulators and market participants. Reporting using the CDM allows automated and accurate risk assessments to be performed, giving an improved understanding of risk exposure, enabling firms and regulators to make informed decisions faster and mitigate potential risks sooner.

CDM in Practice

ACCELERATED SETTLEMENT

As settlement cycles shorten, the need for uniform protocols becomes more and more apparent. Firms need to streamline their operations and upgrade their infrastructure and applications to be able to meet regulatory and market settlement requirements.

New and innovative technologies like Distributed Ledger Technology (DLT) and tokenisation are the key to reaching (near) real-time or atomic settlement[5]. Technology can therefore allow institutions to adapt to faster moving markets, through more extensive use of automation and distributed processing.

However, without the standardisation of data and processes, investment in technology and infrastructure can only go so far. To fully realise the enormous potential of distributed processes and data on a digital ledger, participants must have a standardised framework[6] to manage these transactions.

Fully supporting the trade lifecycle, the CDM provides standard logic and definitions for settlement and transfers, not only of traditional assets, but also of digital assets. We are now seeing firms building their entire systems[7] upon the CDM, giving them an ecosystem that they can use for clearing[8] and settlement of real world and digital assets[9].

At the network level, the CDM offers a route to data interoperability across chains. Currently each network defines their own smart contracts, increasing the probability of issues occurring, leading to situations where the "Truth" on one network is not the same "Truth" as extolled by another network.

If the data and logic embedded in the CDM is tapped by smart contracts then we will achieve standardised processing at the program level, removing the possibility of different results from smart contracts that are designed to perform the same action on two different platforms.

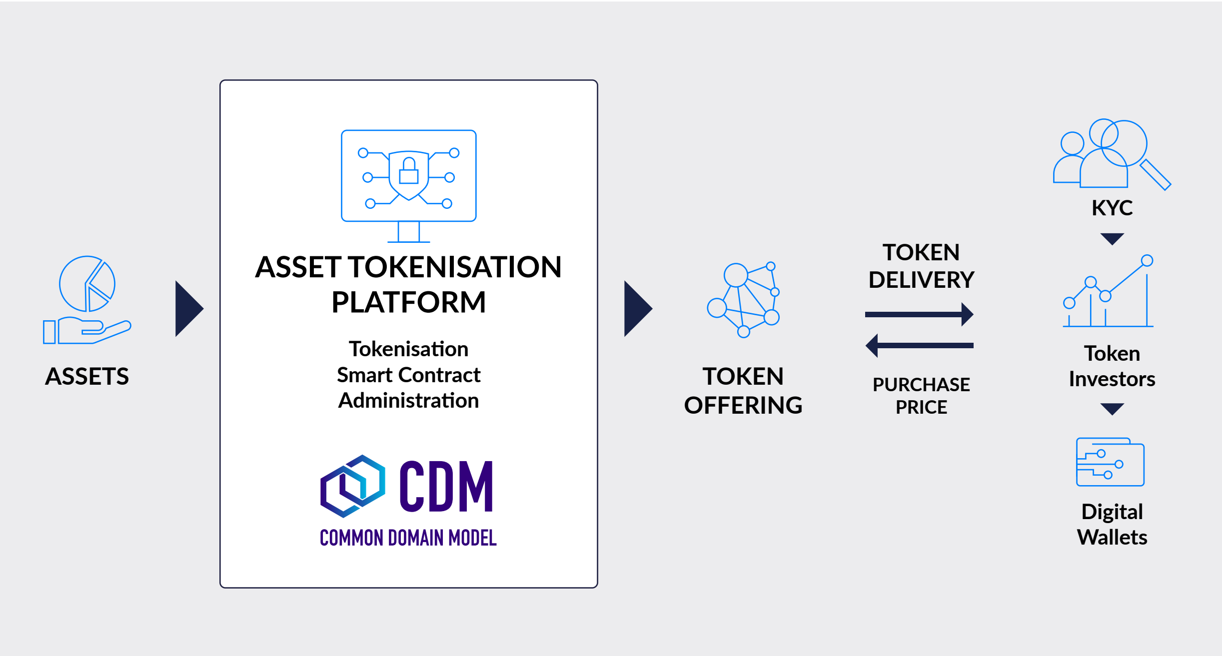

Figure 1: Asset Tokenisation using the CDM

Tokenisation is built upon these networks and smart contracts, meaning in commercial terms, tokenisation works on every level. It removes the need for intermediaries; speeds up transfers of ownership, enhancing collateral mobility and liquidity; lowers transaction costs through automation; and reduces risk through its basis on immutable and verifiable ledger records.

WHAT IS TOKENISATION

A token is a representation of an asset or bundle of rights that can be issued, traded, distributed and tracked on a blockchain. There are two main activities that are meant when the term tokenisation is used in securities markets at time of writing:

A) Tokenised Assets: tokens that represent ownership of an existing asset or bundle of rights, such as bonds, stocks, other types of securities, real estate, artwork, or even tractors. These tokens can be traded on a blockchain platform, providing increased mobility and fractional ownership.

B) Natively Digital Issuances: this involves creating tokens that represent ownership of a new security, such as equity or debt, that is natively digital and issued on a blockchain. These tokens can be sold in security token offerings (STOs), providing investors with a new way to participate in capital raising and ownership.

To maximise benefit from tokenisation, tokenised assets need to seamlessly traverse platforms, and the only way to do that is through the market agreeing and adopting a standard representation of these assets, along with robust legal documentation[10] to support them. This type of industry wide collaboration is in the bedrock of the CDM and has been cited as a key accelerant in driving the demand for asset tokenisation[11].

Through its standardised data and functions, the CDM significantly enhances the efficiency of settlement processing, leading to faster transaction execution through automation and reduced discrepancies and improved accuracy across participants. When combined with technology the CDM can make processes more reliable and facilitate faster and more efficient settlement.

WHAT IS A SMART CONTRACT

A smart contract is simply a piece of code, or a program, that automatically executes pre-defined actions upon certain conditions being met. Essentially, smart contracts represent automated versions of real-world contractual obligations[12].

HARMONISED REPRESENTATION OF COLLATERAL

Collateral is used across the industry to support trading, payments, clearing and settlement, and yet every organisation manages and represents it differently, whether this is in a bi-lateral or tri-party arrangement. ISLA has been working in conjunction with other trade associations to harmonise the representation of collateral, enabling organisations to use the CDM for enterprise-wide collateral management.

The CDM has become recognised by banks, vendors and agents for its ability to standardise the representation and processing of collateral across operations. The key areas the industry can benefit from using the CDM are in the fields of:

COLLATERAL MOBILITY

Having the right collateral in the right place at the right time is critical in today's markets. The CDM's clear definition of collateral and workflows improves liquidity by enhancing collateral movements and enabling easier reuse.

As referenced previously, the value proposition of tokenisation in collateral mobility is significant[13]. The asset representation and transfer processing in the CDM streamlines existing workflows while facilitating the creation and adoption of new products and services.

HAIRCUTS & MARGIN

Haircuts are used to provide risk mitigation against a drop in the market value of an asset used as collateral. Margin (Initial and Variation) is used to further reduce counterparty and credit exposure. These business-as-usual processes are a key part of collateral management and their optimisation is integral to the work being done in the CDM.

As pointed out by an implementer[14] of the CDM, using the standardised data and functions in the collateral arrangement reduces friction in the operational processes surrounding collateral management and collateral/margin disputes. This not only reduces costs and improves efficiency, but also offers more transparency over the status and risk exposure of the collateral.

COLLATERAL EFFICIENCY VS FRAGMENTATION

Collateral management has become increasingly important both at a micro and macroprudential level with organisations needing to adopt the right technology solutions to address operational risk, manage and monitor exposure, and have reliable and highly automated management processes.

During times of market stress, credit risk caused by market conditions can be mitigated by the ability to swiftly mobilise collateral, this ability being greatly improved through streamlined processes. Coupled with the use of standardised representations and functions to define haircuts, margins and workflows, exposure can also be managed more effectively.

Fragmentation of collateral efficiency occurs because collateral is represented, managed and processed differently by each organisation. This is further exacerbated by firms treating each trading domain, and even individual instruments, differently. This leads to market inefficiency and hampers liquidity.

The CDM provides a harmonised approach to collateral, enabling institutions to manage their entire collateral lifecycle at an enterprise level, facilitating a unified view of their collateral. When groups of institutions with common trading relationships using the CDM to represent their collateral functions, it provides greater transparency and efficiency at market level, potentially reducing systemic risk. Tri-party agents will service many of the same clients and a standard representation of the collateral held by triparty agents on behalf of their clients (both borrowers and lenders) would enable better cross-institution optimisation[15] and better mobility, essentially reducing fragmentation and improving efficiency.

As demonstrated above, the CDM delivers on all these areas of collateral management, which has resulted in its uptake by market participants to centrally manage collateral across securities lending, repo and derivatives.

DATA QUALITY FOR REGULATORY REPORTING

The criticality of reporting financial transactions to regulators cannot be understated. Without the timely and accurate delivery of data it would be impossible for policy makers to support market stability and integrity. As markets expand and new trading strategies emerge, regulators must retain visibility over market activities to facilitate the early identification of vulnerabilities and enforce the adoption of regulations to mitigate potential crises[16].

REGULATORY REPORTING PROCESS

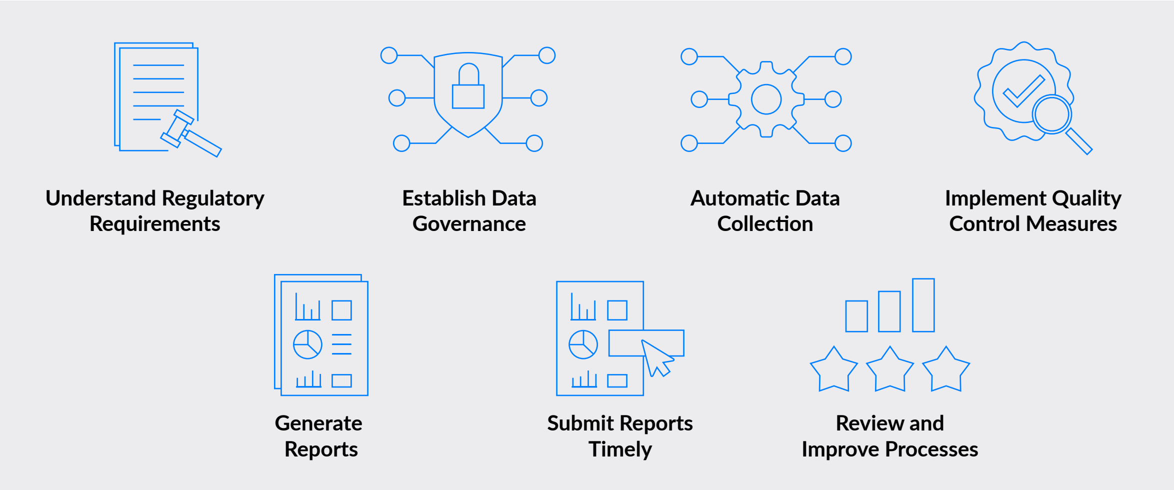

Figure 2: The combination of an increasing volume and cross-jurisdictional scope of regulations, data challenges, resource constraints, regulatory uncertainty, and strict deadlines makes conforming to new regulations a significant and complex undertaking for any organisation.

This backdrop was the inspiration for the Digital Regulatory Reporting[17] module (DRR), an extension to the CDM that utilises its standardised definitions to generate unambiguous transactional report data. This now supports multiple jurisdictions[18] and is in production at several major institutions who have already experienced cost benefits[19] from implementing an open market standard.

With new regulations and amendments proposed for the UK, US, EU, Japan, Hong Kong and Canada, there are demonstrable benefits to the regulatory authorities if participants in these markets adopt a common standard for data reporting. Using Securities Finance Transaction Reporting (SFTR)[20] as an example, which was mandated prior to the inception of CDM and DRR, we can see that reporting regimes that do not promote standard generation techniques can, and still do, suffer from inconsistent, malformed and mismatched data[21]. Clearly migration to DRR and the CDM for new and existing reporting offers significant benefits to the entire market.

At a technical level, the CDM utilises the JSON (Java Script Object Notation) format to represent financial objects, which has now been adopted as a transaction data reporting format after a recent review of regulatory technical standards[22] by ESMA (European Securities and Markets Authority).

In summary, the ISDA DRR initiative, which has the CDM at its core, has proven that standardisation can generate better quality data, the benefits of which can be leveraged to deliver more accurate transactional reporting to satisfy regulations from multiple jurisdictions. With an SFTR rewrite pending, as well as new reporting rules for SEC 10c-1a[23], the CDM is perfectly positioned to deliver high quality data in a time critical manner.

STANDARD REPRESENTATION FOR FINANCIAL LEGAL AGREEMENT DOCUMENTATION

Multiple agreement types exist in the financial markets as conventions and practices in each domain vary. This has led to specialised agreements being required in order to align with each market's standards and expectations. For example, securities lending is covered by the Global Master Securities Lending Agreement (GMSLA), repo by the Global Master Repo Agreement (GMRA) and derivatives by the ISDA Master.

Without these master agreements and associated annexes, it would not be possible for parties to have a clear understanding of their rights and obligations. Having these agreements in place is a fundamental requirement for market integrity.

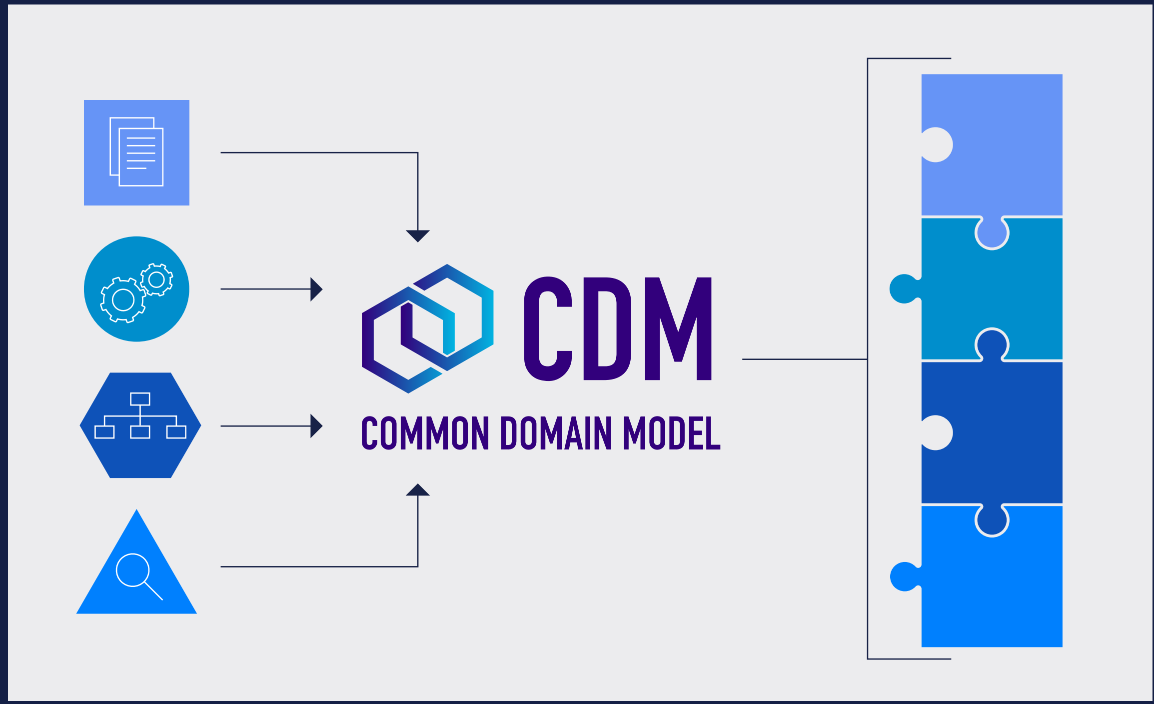

Figure 3: Highlights how the CDM provides a structured common representation of the legal clauses, terms and agreement elections.

Although each document has its own nuances, the CDM draws upon the commonalities across them to provide a representation of the operational aspects of the agreements. These common terms can then be decided and set within the representation of a trade, meaning that the legal constraints defined in the clauses of an agreement can be included along with the trade data.

Figure 4: The Representation of a Smart Contract

This integration of legal and trade data allows actions to be programmed (e.g. into smart contracts) which are executed when specific lifecycle events or scenarios are encountered, enabling an automated and instant reaction to counterparty or market events, reducing risk.

As the CDM is an industry-wide initiative, it offers institutions the opportunity to consolidate their documentation management using a single document definition. Several service providers have now taken advantage of this feature, offering the ability to import, export[24] and negotiate[25] contracts all using the CDM format.

The use of a common data standard for these agreements not only helps counterparties with dispute resolution and document maintenance, but will make it easier for the legal terms of agreements to be upheld, supporting market resilience and reduce the risk of market events. The standardised format provided by the CDM will thus also help banks and vendors meet their commitments under the Digital Operational Resilience Act (DORA).

OPTIMISATION OF PRE-TRADE PROCESSING

Pre-trade processing is a key part of the trade lifecycle. It can involve a large number of steps and processes, from credit assessment, compliance checking, capital allocation, liquidity assessment, as well as the actual trade negotiation, or order routing, trade affirmation and confirmation.

Recent studies[26] have shown that incorrect trade booking is a primary source of settlement failure. Common processing and functionality in the pre-trade cycle will enhance market efficiency, reduce costs and facilitate compliance with downstream regulatory obligations such as accurate transaction reporting.

The CDM was originally developed to alleviate post-trade issues[27]. It is clear however, that the CDM could equally be used to alleviate many of the problems occurring during pre-trade processing, which in turn can prevent those post-trade issues which are actually caused by sub-optimal pre-trade processing. The CDM not only provides workflows that can be used for trade execution[28], but also provides definitions for initial discovery and distribution of asset availability vis-á-vis broker demands. The use of the CDM in the pre- and post-trade workflow results in the standardisation of the full trade lifecycle starting from trade inception through to transaction reporting and ongoing collateral management.

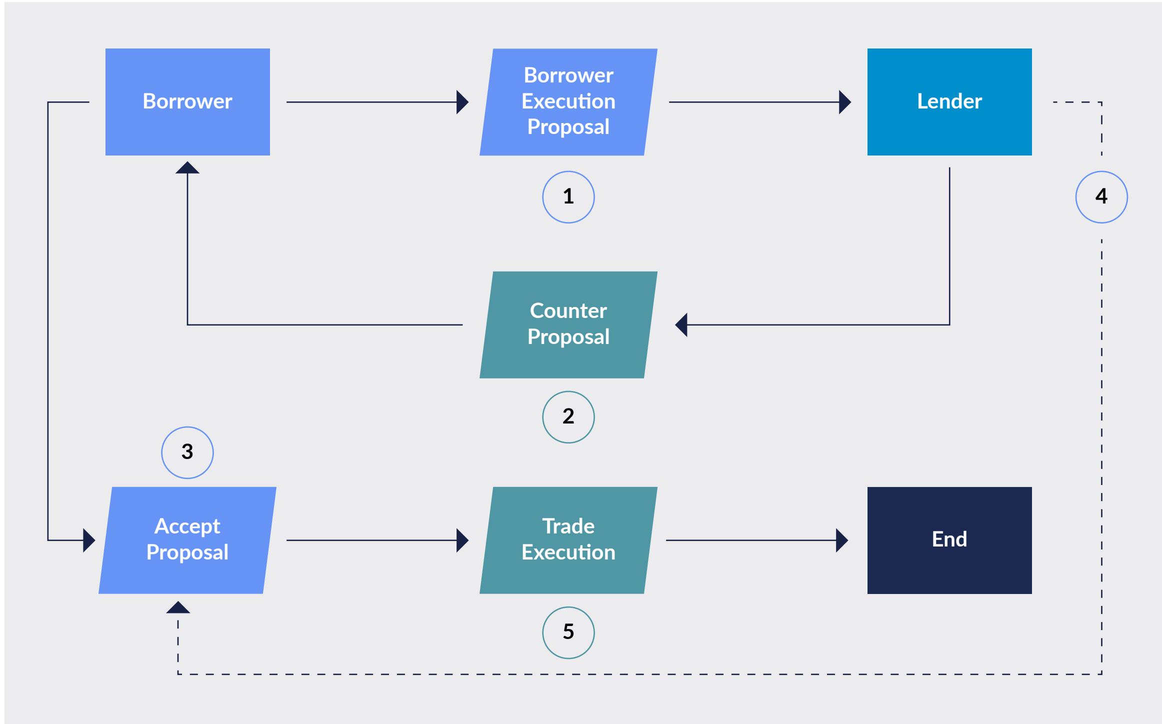

Figure 5: Workflow of a typical securities lending trade negotiation.

Firms are now using these definitions in production[29], proving that the CDM is not restricted to post-trade. It is a true end-to-end standard that can be used across the industry. As recent market outages[30] have taught us, the use of common standards for pre- and post-trade functions enhance an institution's resilience during severe market disruption by enabling firms to more effectively redeploy functionality to other solutions and/or providers that use the same standard.

Looking Ahead

The use cases outlined in this paper represent just a small number of the possible applications of the CDM within financial markets. To truly modernise legacy and resource-heavy processes, the industry paradigm must shift from each platform using bespoke translations to a unified approach. IT developments from today must incorporate the CDM to ensure everything is CDM compliant. If the CDM is not adopted, it is likely that a number of alternative standards will vie for contention, leading to bottlenecks and high long-term costs.

The open-source nature of the model means its application is limitless, offering the unique opportunity to transform everything from regulatory reporting to pre- and post-trade processing. Furthermore, as the industry becomes digitised through tokenisation and digital cash, having a foundational standard like the CDM is essential. By streamlining fundamental processes, the CDM can foster greater innovation, enabling participants to focus on accelerating the development of market solutions for the future.

ISLA Contacts

Adrian Dale
Head of Regulation & Markets

Adrian joined ISLA in January 2019 as Head of Regulation & Markets group. In this role, he manages the associations work on regulation, technology, and market practices of the EMEA Securities Lending markets.

Adrian has over 30 years of experience in financial services including diverse roles in product development, business analysis, IT development, trading, and operations at BNP Paribas, Barclays and BNY. Prior to joining ISLA Adrian was head of product development for SFTR at IHS Market.

Chris Rayner
Senior Associate – Market Infrastructure & Technology

Chris joined ISLA in February 2022 as a Senior Associate – Market Infrastructure & Technology within the Regulation, Digital & Market Practice group.

In this role he is responsible for supporting the Association's important work on development of securities lending products within the Common Domain Model (CDM). The CDM is a standard codified representation of transactions, events, agreements and processes, and is a key initiative to digitally transform the industry. Chris is also the chair of our CDM working group.

Prior to ISLA, Chris held a role as a Software Engineer Specialist at FIS, with a track record of over 25 years of successful delivery in the financial services industry.

Sources

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1. The Fintech Open Source Foundation is part of the Linux Foundation
2. As described on the CDM microsite
3. FINOS host several Open Standard projects
4. www.icmagroup.org
4. www.isda.org
4. www.islaemea.org

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5. Conclusion from Regulated Settlement Network Proof of Concept in December 2024 showed advantages of adopting shared ledgers and technology
6. Report by World Economic Forum (WEF) stated that data standardisation is key to promoting adoption of DLT
7. Fragmos Chain use CDM for OTC derivatives processing
8. Digital Asset and ISDA working in conjunction with UBS and ASX to use CDM and DAML for clearing
9. Tokenovate use CDM to standardise processing of tokenised assets

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10. ISLA and ICMA release Digital Asset Annex to the GMSLA and GMRA
11. Article by McKinsey forecasts that regulations and standardisation could double the rate of adoption for tokenised assets
12. ISLA Digital Asset Technology in Brief: Smart Contract

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13. 2024 Study suggests that Tokenisation could free up $100bn of collateral
14. Vermeg explain their use of CDM for collateral management

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15. 2021 Report by Euroclear in conjunction with BNY

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16. Research suggests that proactive regulations will reduce the probability of market crises
17. ISDA Digital Regulatory Reporting
18. Additional region specific regulations will be added to DRR in 2025 and beyond
19. As stated by J.P. Morgan at the 2024 OSFF event
20. Complexity and ambiguity of SFTR framework made implementation hard
21. Analysis shows invalid SFTR data still being submitted 4 years after the July 2020 go live
22. ESMA amendment to RTS 24 in October 2024
23. US SEC ruling in October 2023

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24. ARK 51, part of DRS, use the CDM for margin documentation analysis
25. Smart Communications support CDM format for contract negotiation and distribution

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26. Firebrand Research report March 2024 cited by Euromoney
26. MarketsMedia
27. Report by Deloitte in 2019 stating that the use of DLT with the CDM for post trade processes could result in an estimated 50-80% cost saving in post trade infrastructure
28. Explored by the ISLA Trading Working Group
29. Announced at 2024 CDM Showcase by Trading Apps
30. Cyber attack on EquiLend forced NGT, a key securities finance trade matching platform, to be out of operation for a protracted period of 2 weeks

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FIGURES

Figure 1. QIDS Venture Partners: How Does Asset Tokenization Work?

Figure 2. Safety Culture - Understanding Regulatory Reporting for GRC Management

Figures 3 & 4. CDM & ISLA Clause Library Integration Video

Figure 5. ISLA Common Domain Model: A Framework for Event Negotiation

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About ISLA

The International Securities Lending Association (ISLA) is a leading non-profit industry association, representing the common interests of securities financing market participants across Europe, Middle East, and Africa (focusing primarily on securities lending and borrowing (SLB) activity). Its geographically diverse membership of over 200 firms includes institutional investors, asset managers, custodial banks, prime brokers and service providers.

Working closely with the industry, as well as national, regional, and global regulators and policy makers, ISLA advocates for, amongst other things, the importance of securities lending to the broader financial services industry. It supports both the Global Master Securities Lending Agreement (GMSLA) legal framework, including the Title Transfer and Securities Interest over Collateral variants, as well as the periodical enforceability and security enforcement across global jurisdictions.

Through member working groups, industry guidance, consultations and first-class events, ISLA plays a pivotal role in the creation and promotion of market best practices and processes, thought leadership, standards for legal frameworks, and securities lending guides and related documents.

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