

Crypto-assets, DLT and capital markets – ICMA's activities in the international debt capital markets

Presentation at ECB Operations Managers Group meeting

Gabriel Callsen, Director, ICMA

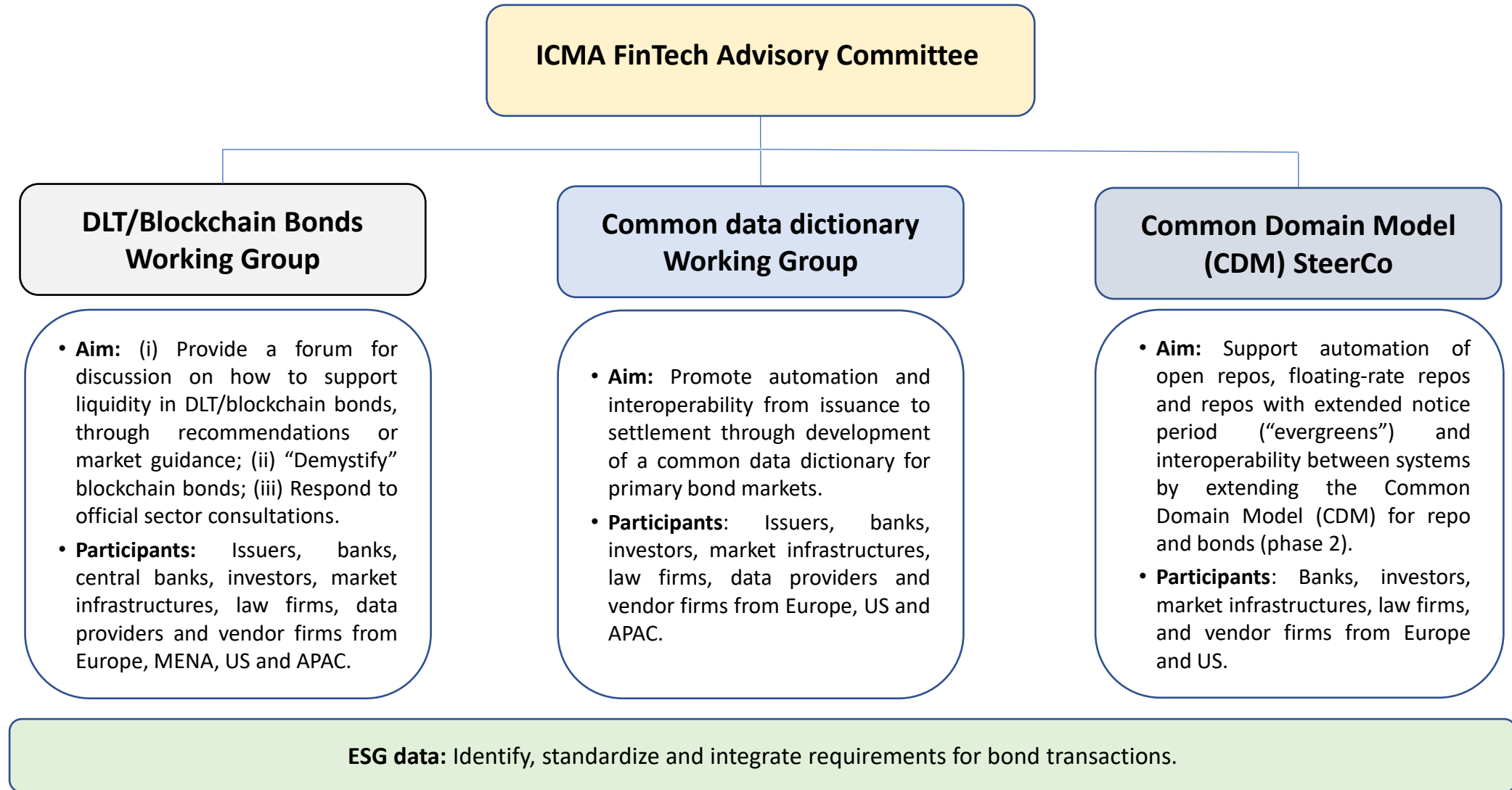
Agenda – Crypto-assets, DLT and capital markets – ICMA’s activities in the international debt capital markets

- 1) Introduction
- 2) What are the latest market developments?
- 3) What are the latest legislative and regulatory developments?
- 4) ICMA’s engagement on FinTech and digitalisation in the international debt capital markets
- 5) Q&A

1) Introduction

International Capital Market Association (ICMA)

- ICMA is a not-for-profit trade association, with offices in Zurich, London, Paris, Brussels and Hong Kong, that serves the needs of its wide range of member firms in global capital markets.
- Its membership of over 622 spans 65 jurisdictions includes all types of issuers, intermediaries and investors as well as central banks and other institutions who play an important role in the capital markets such as exchanges, trading platforms, clearing and settlement firms, rating agencies, software vendors, data providers and law firms.
- ICMA's market conventions and standards have been the pillars of the international debt market for over 50 years, performing a crucial central role in the market by providing industry-driven standards and recommendations including:
 - ICMA's Primary Market Handbook
 - ICMA's Secondary Markets Rules and Recommendations
 - Global Master Repurchase Agreement (GMRA) and ERCC Guide to Best Practice in the European Repo Market
 - Green Bond Principles (GBP), the Social Bond Principles (SBP), the Sustainability Bond Guidelines (SBG) and the Sustainability-Linked Bond Principles (SLBP).
- ICMA is a leading supplier of education programmes for financial markets at all levels and delivered in online self-study, live streamed and classroom-based formats. Many of the courses are certificated and are accredited by regulators and academic bodies.

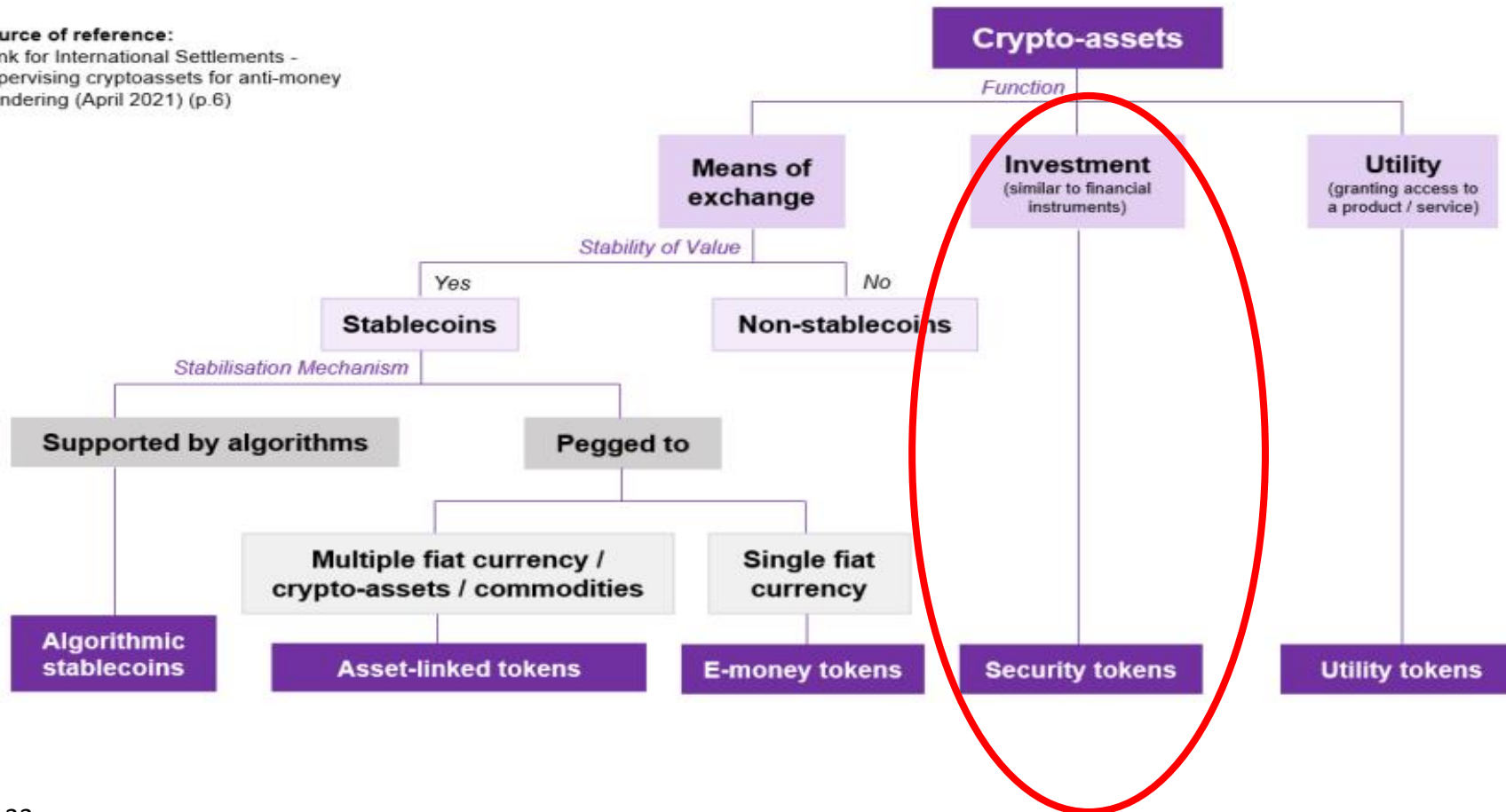


What are crypto-assets / virtual assets / digital assets?

- **Virtual asset:** a digital representation of value that can be digitally traded, or transferred, and can be used for payment or investment purposes. Virtual assets do not include digital representations of fiat currencies, securities and other financial assets that are already covered elsewhere in the FATF Recommendations. ([FATF recommendations, Updated March 2022](#))
- **Crypto-asset:** a type of private asset that depends primarily on cryptography and distributed ledger or similar technology as part of their perceived or inherent value. These are also referred to as cryptocurrencies. (FSB: [Crypto-asset markets: Potential channels for future financial stability implications](#), 2018). The EU's [proposed](#) Markets in Crypto-Assets (MiCa) regulation defines a crypto-asset more broadly as “a digital representation of value or rights which may be transferred and stored electronically, using distributed ledger technology or similar technology” (Art. 3-1 (2)). Examples include Bitcoin, Ether, Tether, Algorand and Stellar, amongst others.
- **Digital asset:** a digital instrument that is issued or represented through the use of distributed ledger or similar technology. This does not include digital representations of fiat currencies. (FSB: [Assessment of Risks to Financial Stability from Crypto-assets](#), 2022)
- **Native digital asset:** a security that is originally issued, recorded and kept in a DLT-based system. (ECB: [The use of DTL in post-trade processes](#), 2021)

Classification of crypto-assets

Source of reference:
Bank for International Settlements -
Supervising cryptoassets for anti-money
laundering (April 2021) (p.6)



2) What are the latest market developments?

DLT and tokenisation in bond markets

- The number of DLT-based transactions and experiments in bond markets continues to increase.
- ICMA's [tracker](#) of new FinTech applications lists more than 100 announcements, proofs of concept, or live transactions involving distributed ledger technology or blockchain.
- Use of DLT varies and depends on a range of factors (eg type of instruments, issuance method, current market practice, expected benefits, legal and regulatory requirements, level of maturity of capital market).
- Trend towards centralisation and interconnectivity between various stakeholders in the bond issuance chain.
- Key challenges include:
 - Legal and regulatory obstacles
 - Cash on ledger to enable DvP
 - Potential risk of fragmentation
 - Lack of broader market awareness

DLT in bond markets – Selected examples (i)

Primary markets

Secondary markets

Repo and collateral markets

Cross-cutting

4 November 2022 – HSBC announces Orion tokenisation platform for digital bonds issuance

HSBC announced that it will launch HSBC Orion – its new proprietary tokenisation platform that financial institutions and corporates will be able to use to issue digital bonds based on distributed ledger technology. The European Investment Bank (EIB) is currently exploring the possibility of issuing the market's first-ever GBP tokenised bond, for registration and issuance under Luxembourg law, using HSBC Orion.

HSBC Orion leverages blockchain technology as a 'single source of truth', whereby asset and settlement tokens sit natively and securely on the platform's ledger. Transactions occur by exchanging these tokens, achieving digital 'delivery versus payment'. HSBC intends to expand the use of HSBC Orion to other locations and asset classes in due course.

<https://www.gbm.hsbc.com/-/media/gbm/campaign/media-releases/announcing-hsbc-orion.pdf>

3 November 2022 - UBS AG launches digital bond publicly traded and settled on both blockchain-based and traditional exchanges

UBS AG priced its inaugural senior unsecured digital bond, a 375 million Swiss franc-denominated three-year bond with 2.33% coupon (ISIN: CH1228837865). The digital bond has the same instrument structure, legal status and rating as a traditional UBS AG senior unsecured note but is the first ever digital bond by a banking institution globally that will be listed, traded and settled on a regulated digital exchange. Through this bond, UBS enables investors, regardless of whether they have the blockchain infrastructure, to invest in a digital bond. This removes a hurdle on the way to adopt new disruptive technology that can make issuing bonds faster, more efficient and simpler.

The digital bond settles via SIX Digital Exchange (SDX) distributed ledger-based central securities depository (CSD) network through atomic settlement technology. Settlement via SDX CSD is instant and automatic and does not require a central clearing counterparty. Investors will have the ability to automatically settle and clear the UBS digital bond on either SDX CSD directly or on SIX SIS via the operational link which was formally announced on 3rd October 2022. The digital bond will be dual listed at SDX Trading and SIX Swiss Exchange and will be eligible for the Swiss Bond Index (SBI) alongside all other UBS AG senior unsecured notes which are listed on SIX.

<https://www.ubs.com/global/en/media/display-page-ndp/en-20221103-digital-bond.html?caasID=CAAS-ActivityStream>

DLT in bond markets – Selected examples (ii)

Primary markets	Secondary markets	Repo and collateral markets	Cross-cutting
-----------------	-------------------	-----------------------------	---------------

19 October 2022 – Israel’s Ministry of Finance and TASE prepare for the issuance of government bonds on a blockchain platform

The Accountant General and TASE Establish a Joint Team to Perform a Proof of Concept for the Issuance of government Bonds on a Blockchain Platform (DLT). The process will include a pilot issuance of digital government bonds by digital-asset technology leaders, VMware and Fireblocks. The PoC will include the digitalization of a new series of bonds and its issuance to the system participants. As part of the issuance, the leading banks, both international and local (primary dealers), will participate in a “live test”, during which they will be connected to a dedicated Blockchain system that will be developed by TASE and the select technology vendors. The acquired units of the new series will be issued into the e-wallets of the pilot participants. The issuance consideration, in digital currency, will be transferred from the e-wallets of the participants to a dedicated e-wallet by the State of Israel.

https://info.tase.co.il/Eng/about_tase/news/2022/Pages/PR_20221019.aspx

23 August 2022 - IDB Group and Davivienda Bank announced the issuance of Colombia’s first blockchain bond

The IDB Group — composed of the Inter-American Development Bank, IDB Invest and IDB Lab — and Colombia’s Davivienda Bank issued the first blockchain bonds in Latin America and the Caribbean, as a pilot project within Colombia’s regulatory innovation sandbox. This pilot is the first of its kind in the region. The processes of authorisation, initial registration, and subsequent cancellation of the bond’s registration in the National Registry of Securities and Issuers (RNVE), as well as the issue, trading, payment registration and compliance of the bond were done entirely on blockchain. This approach allowed the banks to test ways to streamline the process and bring down its costs over a complete trading cycle on the Colombian capital market.

The bond, underwritten in its entirety by IDB Invest, had a total issue size of COP\$110 million. It was purchased by IDB Invest through a transaction conducted on the LACChain blockchain network, the infrastructure enabled by IDB Lab as a regional public good. The pilot issue was carried out within “la Arenera” -- the sandbox of the Financial Superintendence of Colombia for testing innovations in financial technology (fintech). IDB Group provided logistical and regulatory support for the project. The Bank of the Republic of Colombia, which is the country’s central bank, and the Financial Superintendence of Colombia supervised the entire processes of the bond’s trading and compliance cycles. The experience of carrying out the first bond issue using blockchain in Latin America and the Caribbean showcases the benefits of new decentralized technologies like blockchain, increasing the efficiency of the region’s capital market, including secondary markets. The project lays the groundwork for promoting and encouraging the use of new technologies in finance for Colombia.

<https://www.iadb.org/en/news/idb-group-and-davivienda-bank-issue-colombias-first-blockchain-bond>

Note: For further information see ICMA’s New FinTech applications in bond markets [webpage](#). This overview is provided by ICMA for information purposes only. ICMA does not endorse any of those firms or solutions listed.

DLT in bond markets – Selected examples (iii)



2 November 2022 – MAS pilot conducts foreign exchange and government bond transactions against liquidity pools comprising of tokenised bonds and fiat currencies

Monetary Authority of Singapore (MAS) announced that the first industry pilot under MAS’ Project Guardian exploring potential decentralised finance (DeFi) applications in wholesale funding markets has completed its first live trades. Under the first industry pilot, DBS Bank, JP Morgan and SBI Digital Asset Holdings conducted foreign exchange and government bond transactions against liquidity pools comprising of tokenised Singapore Government Securities Bonds, Japanese Government Bonds, Japanese Yen (JPY) and Singapore Dollar (SGD). A live cross-currency transaction involving tokenised JPY and SGD deposits was successfully conducted. In addition, a simulated exercise was performed involving the buying and selling of tokenised government bonds.

DeFi enables financial transactions to be performed by entities directly with one another using smart contracts, without financial intermediaries. The live transactions executed under the first pilot demonstrate that cross currency transactions of tokenised assets can be traded, cleared and settled instantaneously among direct participants. This frees up costs involved in executing trades through clearing and settlement intermediaries, and the management of bilateral counterparty trading relationships as required in today’s over-the-counter (OTC) markets.

<https://www.mas.gov.sg/news/media-releases/2022/first-industry-pilot-for-digital-asset-and-decentralised-finance-goes-live>

DLT in bond markets – Selected examples (iv)



6 October 2022 - HQLA^x J.P. Morgan, Ownera and Wematch demonstrate a cross-ledger repo

HQLA^x, J.P. Morgan, Ownera and Wematch successfully demonstrated the technical feasibility of executing a delivery-versus-payment (DvP) repo transaction across two different distributed ledger technology (DLT) platforms at HQLA^x and J.P. Morgan. The demonstration showed how rights to securities, recorded in digital collateral records (DCRs) on the HQLA^x ledger, and digital cash, recorded at J.P. Morgan, could be recorded and transferred using two different DLT platforms. The simulated transaction was negotiated in the Wematch trading front-end. Ownera connected Wematch and the two distributed ledgers using the open-source FINP2P routing protocol, ensuring the visibility of assets in Wematch, and coordinating the DvP settlement across the HQLA^x and J.P. Morgan platforms.

<https://www.hqla-x.com/post/hqlax-j-p-morgan-ownera-and-wematch-demonstrate-a-cross-ledger-repo>

DLT in bond markets – Selected examples (v)



24 October 2022 – BIS, HKMA and UN prototype using blockchain, smart contracts and IoT to demonstrate feasibility of tokenised green bonds with MOIs

Project Genesis 2.0 is a collaboration between the BIS Innovation Hub's Hong Kong Centre, the Hong Kong Monetary Authority and the UN Climate Change Global Innovation Hub, with two consortia. Through the use of blockchain, smart contracts and the internet of things (IoT), Genesis 2.0 delivered two prototypes that demonstrate the technical feasibility of tokenised green bonds with mitigation outcome interests (MOIs) attached. These are de facto verified carbon credits recognised by either international, national or other verification mechanisms in line with the Paris Agreement. The MOIs are digitally tracked and automatically delivered to investors, through the use of distributed ledger technology and smart contracts, combined with IoT devices tracking the carbon credits at source. A legal term sheet for the bonds was contributed by King & Wood Mallesons.

The first prototype, developed by Goldman Sachs, Allinfra and Digital Asset, showcased a simulated solution for an end-to-end digital flow for institutional green finance. The straight through process via a distributed ledger technology platform was able to digitally track, deliver and transfer MOIs, in addition to tokenising the issuance of the green bond itself. It was able to achieve smart contract-based delivery of bonds and MOIs, and provided source data transparency enabled by IoT technology. The second prototype, developed by InterOpera in collaboration with Krungthai Bank, Samwoo and Sungshin Cement, was built on an interoperable host chain designed as part of a wider ecosystem. With a combination of blockchain, smart contract and application programming interface (API) technologies, it also digitally tracked, delivered and transferred MOIs throughout the full green bond life cycle.

<https://www.bis.org/publ/othp58.htm>

DLT in bond markets – Selected examples (vi)



5 October 2022 – SWIFT completes two experiments on interlinking CBDCs and tokenised asset platforms

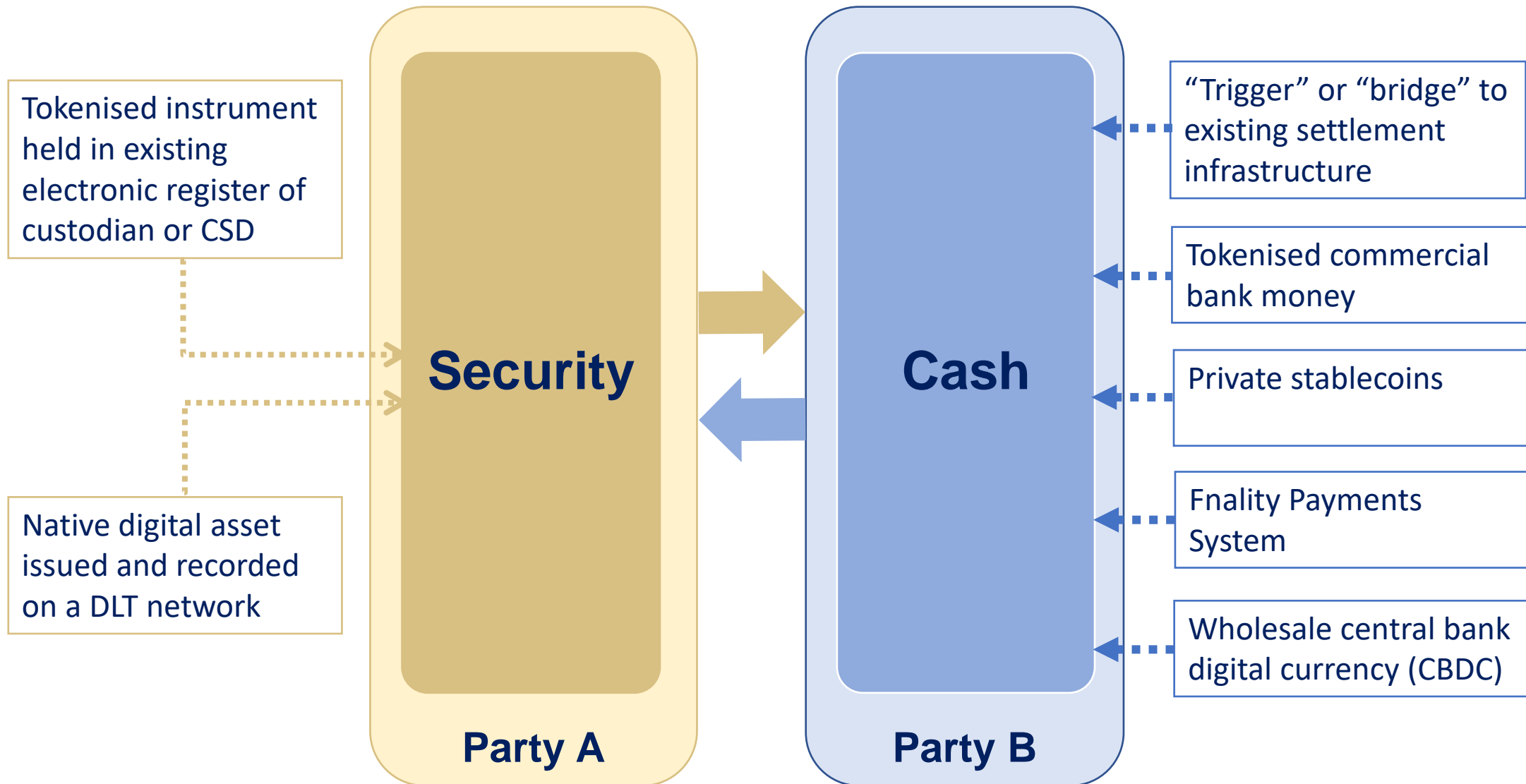
SWIFT has successfully shown that Central Bank Digital Currencies (CBDCs) and tokenised assets can move seamlessly on existing financial infrastructure – a major milestone towards enabling their smooth integration into the international financial ecosystem. The findings, from two separate experiments, solve the significant challenge of interoperability in cross-border transactions by bridging between different distributed ledger technology (DLT) networks and existing payment systems, allowing digital currencies and assets to flow smoothly alongside, and interact with, their traditional counterparts. This important step forward builds on SWIFT’s core capabilities and means that as CBDCs and tokens develop, they can be rapidly deployed at scale to facilitate trade and investment between more than 200 countries and territories around the world.

SWIFT, in collaboration with Capgemini, achieved CBDC-to-CBDC transactions between different DLT networks based on popular Quorum and Corda technologies, as well as fiat-to-CBDC flows between these networks and a real-time gross settlement system. The success showed that the blockchain networks could be interlinked for cross-border payments through a single gateway, and that SWIFT’s new transaction management capabilities could orchestrate all inter-network communication. 14 central and commercial banks, including Banque de France, the Deutsche Bundesbank, HSBC, Intesa Sanpaolo, NatWest, SMBC, Standard Chartered, UBS and Wells Fargo, are now collaborating in a testing environment to accelerate the path to full scale deployment.

Working in collaboration with Citi, Clearstream, Northern Trust, and SETL, its technology partner, SWIFT explored 70 scenarios simulating market issuance and secondary market transfers of tokenised bonds, equities and cash. It successfully served as a single access point to various tokenised networks and showed its infrastructure could be used to create, transfer and redeem tokens and update balances between multiple client wallets, as well as provide interoperability between different tokenisation platforms and existing account-based infrastructure.

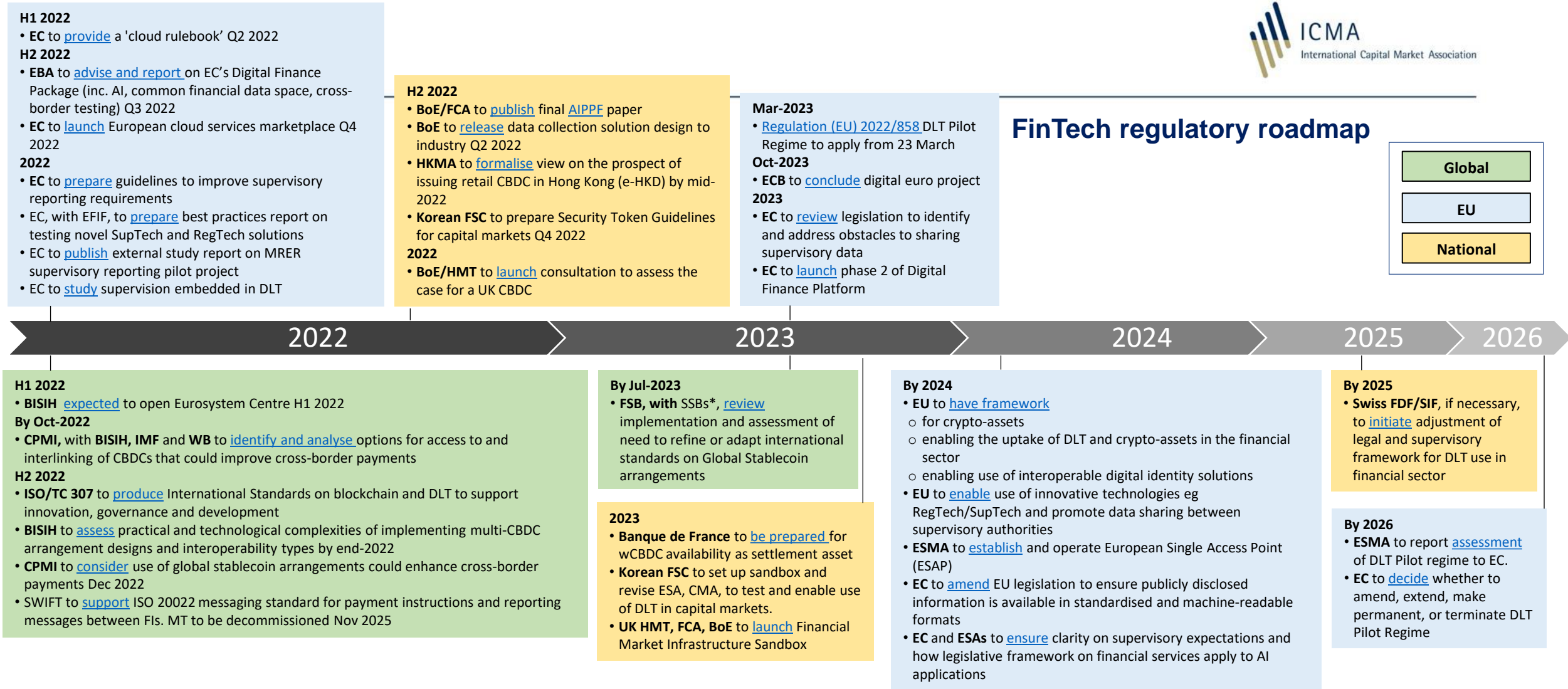
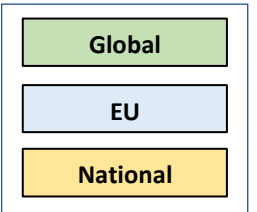
<https://www.swift.com/news-events/press-releases/ground-breaking-swift-innovation-paves-way-global-use-cbdcs-and-tokenised-assets>

Delivery vs payment (DvP) scenarios for DLT-based bonds



3) What are the latest legislative and regulatory developments

FinTech regulatory roadmap



Notes
*SSB: standard-setting bodies

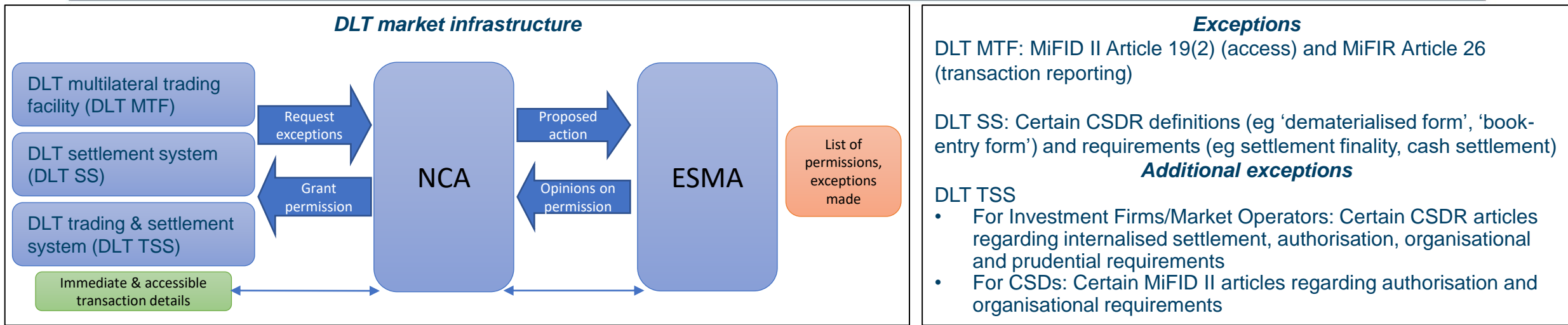
See also: [European Commission Digital Finance Package](#)

DLT in bond markets – Selected legislative and regulatory developments at national level

- **Spain:** On 12 September 2022, the Spanish draft bill for a new Securities Markets and Financial Services Act was made [public](#). The Bill includes new provisions on the use of distributed ledger technologies for the issuance and registration of securities.
- **US:** On 7 June 2022, U.S. Senators Kirsten Gillibrand and Cynthia Lummis [introduced](#) the [Responsible Financial Innovation Act](#) to create a regulatory framework for digital assets. Among other items, it calls upon the Federal Reserve Board of Governors to study how DLT may reduce risk for depository institutions.
- **India:** On 29 March 2022, the Securities and Exchange Board of India (SEBI) [issued](#) Operational Guidelines for Security and Covenant Monitoring using Distributed Ledger Technology (DLT).
- **Luxembourg:** On 21 January 2022, the CSSF [published](#) its whitepaper on DLT and blockchain, aimed at guiding professionals in the conduct of due diligence process related to DLT and use in the Luxembourg financial sector.

See further information in **ICMA's DLT Regulatory Directory** available [here](#).

EU DLT Pilot Regime



Instrument scope

- Shares
- **Bonds**, other forms of securitised debt, inc. depository receipts, and MMIs
- UCITS

Bond thresholds

- EUR 1 billion new issuance/recording size*
- EUR 6 billion total market value recorded**

Notes on thresholds

- NCAs may set lower thresholds
- *New issuance/recording threshold not applicable for corporate bonds with issuer market capitalisation < EUR 200 million
- **EUR 9 billion allowable post issuance/recording value for all DLT instruments

Sep 2020
DLT PR proposal in Digital Finance Package

Mar 2023
DLT PR to apply

2029
If extended, conclusion of DLT PR

Publication in Official Journal
Jun 2022

ESMA assessment on DLT PR
By Mar 2026

UK Financial Market Infrastructure (FMI) sandbox

FMI sandbox(es)

Background: [FSMB](#) enables HMT to set up sandboxes for FMI entities to test and adopt new technologies and practices for a limited period
Outcome: To determine whether/how enactments should apply to FMI activities

FMI entities

- Recognised CSD
- Operator of MTF
- Operator of OTF
- Recognised investment exchange (not an overseas investment exchange)
- Other persons as may be specified in the regulations

Provisions

FMI sandbox may provide for relevant enactments to:

- Not apply
- Be modified
- Be applied with / without modifications

For purposes of issuance, trading, settlement*

Relevant enactments

- Full list in clause 17(3) including:
- [CSDR](#), [MAR](#), [UK MiFIR](#)
 - [Settlement Finality Regulations 1999](#) (SFRs)
 - [Uncertificated Securities Regulations 2001](#) (USRs)
 - [FMSA 2000](#)

Permanent changes

- HMT may make sandbox provisions (as tested or with variations) permanent
- Provisions that amend, repeal, or revoke a relevant enactment subject to UK Parliamentary affirmative procedure

*Note: HMT to determine relevant sandbox provisions, activities, requirements, role of regulators, duration, and wind-down processes

Apr 2022
HMT, FCA, BoE FMI sandbox announcement

Q1 2023
Expected consultation period

Beyond H2 2023
HMT assessment report & potential permanent changes to enactments

Bill introduced to UK Parliament
Jul 2022

Introduction of FMI sandbox
Expected H2 2023

4) ICMA's engagement on FinTech and digitalisation in the international debt capital markets

ICMA's focus on FinTech and digitalisation

- 1) **Providing market intelligence** and horizon scanning
- 2) **Promoting best practice and common standards** to avoid fragmentation and drive interoperability
- 3) **Advocacy & regulatory engagement** to ensure effective outcomes for all market stakeholders in the international debt capital markets
- 4) **Education & Events** working together to raise awareness on relevant topics driving industry transformation

What are the lessons learnt from DLT-based bond transactions?

Take-aways from ICMA roundtable in February 2022 on lessons learnt from DLT-based bond transactions including issuers, banks, central banks, investors and market infrastructures:


- **Benefits:** DLT can enhance transparency and auditability, increase efficiency and ultimately funding costs, by reducing the need for reconciliation and removing intermediaries in the bond issuance process.
- **Challenges:** From an operational perspective, integration of DLT networks with legacy systems. Legal and regulatory fragmentation in relation to the treatment of digital securities registered by CSDs and private or public blockchains. Lack of CBDC to support settlement of digital assets. Convincing market stakeholders of (incremental) benefits.
- **Cost:** While the promise of DLT is to transact more efficiently and save costs in the long term, initial experimentation and implementation generates costs.
- **Market practice:** Atomic settlement is possible, but settlement cycles can be adjusted according to market practice and demand. Widespread adoption seems more likely in domestic markets with a smaller number of market participants compared to the international bond markets.

DLT Bonds Working Group – Bringing together the industry

Objectives:

- **Provide a forum for discussion on how to support liquidity in DLT bonds**, focusing on interoperability between different DLT networks as well as traditional market infrastructure, cash on ledger, legal and/or regulatory obstacles => **Provide market guidance**
- **Demystify DLT bonds => Publication of *FAQs on DLT and blockchain in bond markets***, available [here](#).
- **Maintain dialogue with regulators on relevant topics and respond to consultations:**
 - => See ICMA's [response](#) to the Eurosystem questionnaire on a wholesale digital Euro.
 - => See joint trade association [response](#) to BCBS second consultation on the prudential treatment of crypto-assets exposures.

Further information is available [here](#).



International Capital Market Association

Frequently Asked Questions on DLT and blockchain in bond markets

First published by the International Capital Market Association (ICMA) in September 2022.

This document is provided for information purposes only and should not be relied upon as legal, financial, or other professional advice. While the information contained herein is taken from sources believed to be reliable, ICMA does not represent or warrant that it is accurate or complete and neither ICMA nor its employees shall have any liability arising from or relating to the use of this publication or its contents, including any information on any third party website which may be referred to in this document.

Contents

Acknowledgements.....	2
Introduction	2
1. What is distributed ledger technology? What is blockchain?	2
2. What are virtual assets, crypto assets and (native) digital assets?	3
3. What is a Central Bank Digital Currency (CBDC)?	4
4. What are so-called stablecoins?	4
5. What are DLT bonds?.....	5
6. What is the difference between DLT bonds and traditional bonds, and how they are held?.....	6
7. How does DLT bond documentation generally differ from traditional legal bond documentation?.....	7
8. What is a (digital) token?.....	8
9. Are DLT bonds always on a DLT network or blockchain? Are there access restrictions?.....	8
10. Can DLT bonds reduce settlement risk?	8
11. How might DLT bonds change the issuance and lifecycle process?	8
12. How are payments made in relation to DLT bonds?	9
13. What is the Common Domain Model (CDM) for repo and bonds, and how does this fit in with DLT bonds?.....	10
14. What is ICMA's Common Data Dictionary initiative for primary bond markets, and how does it support DLT bonds?	11

Viewpoint on wholesale CBDC

Why a wholesale CBDC?

- **Next level automation** through programmability, reducing costs and fragmentation.
- **More efficient** securities settlement and post-trade processing, **reducing settlement fails**
- **Increase attractiveness** of capital markets and **facilitate funding** for real economy
- **Future proof** and **maintain control of currency** in light of the proliferation of 'stablecoins'.

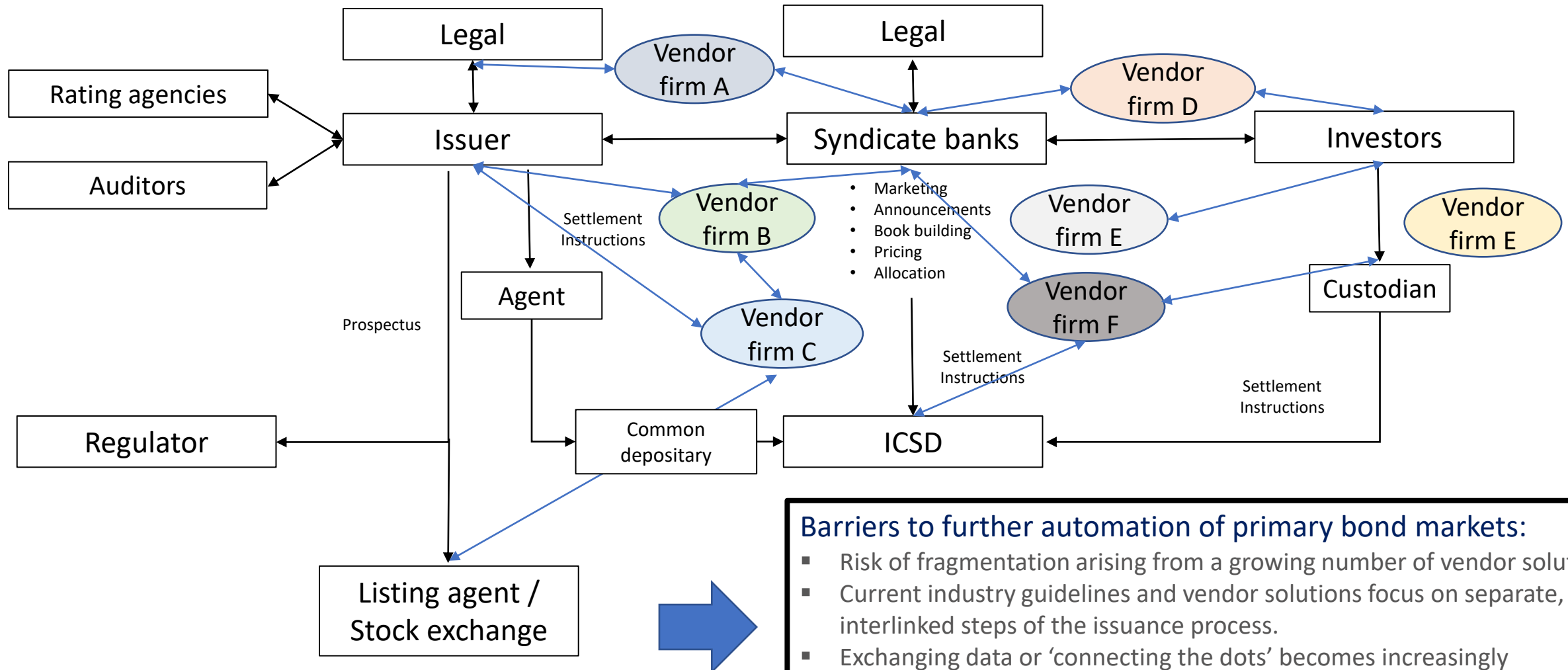
What are the key challenges?

- Deployment without causing market disruption and impacting financial stability.
- Implications for **monetary policy, bank funding, privacy** and **data protection**, and **CO2 footprint**.
- **Interoperability** between wholesale CBDC, retail CBDC and existing market infrastructure.
- **Cross-border inconsistencies** and **diverging definitions of CBDC**

What does ICMA recommend?

- Collaboration with the industry is critical to develop a roadmap and operating model.
- Resource allocation: Central banks and market stakeholders need to allocate resources in the short term.
- Communication: Clear communication and transparency on next steps are required for long-term success.

Common Data Dictionary initiative – Promoting STP and interoperability in primary bond markets



Barriers to further automation of primary bond markets:

- Risk of fragmentation arising from a growing number of vendor solutions.
- Current industry guidelines and vendor solutions focus on separate, but interlinked steps of the issuance process.
- Exchanging data or ‘connecting the dots’ becomes increasingly challenging between internal systems, vendor solutions, and market infrastructures.

Common Data Dictionary for primary bond markets at a glance

What is the CDD initiative?

In order to address barriers to further automation, ICMA launched the CDD initiative to create an agreed language to represent key bond characteristics.

The initial phase has built consensus to represent key economic terms, dates, and other information typically included in a vanilla bond term sheet (approx. 90 fields).

What are the benefits of the CDD?

Implementation of the CDD as a 'common language' is expected to:

- Promote straight-through-processing (STP) and interoperability, assisting firms involved during the issuance process and streamlining post-trade operations.
- Be vendor agnostic, facilitating the exchange of data between multiple solutions and systems.
- Lay a common foundation for leveraging new technologies, such as DLT.

Who is involved?

The initiative is led by a Working Group comprising a wide array of market participants active in the primary bond markets, including SSA issuers, banks, investors, law firms, market infrastructure and vendor providers.

What are next steps and how can you be involved?

The initial CDD scope in a machine-readable format is expected to be delivered by end-2022. All market stakeholders are welcome to get in touch and engage in the direction and development of the CDD.

ICMA CDD factsheet

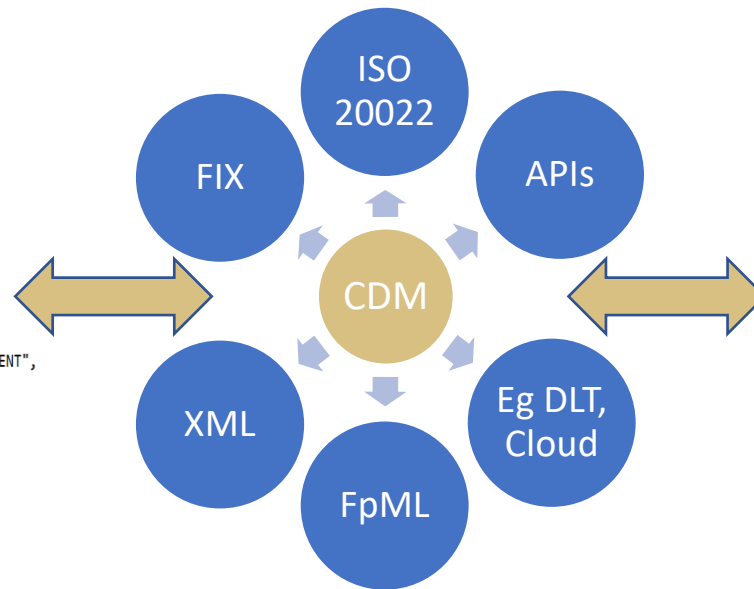


The slide displays a factsheet titled "ICMA Common Data Dictionary (CDD) Supporting automation in primary bond market". It includes the ICMA logo and a brief introduction to the initiative. The factsheet is organized into several sections: "Barriers to further automation of primary bond markets" (listing issues like lack of harmonization and inconsistent data), "What is the CDD initiative?" (explaining the goal of a common language), "What are the benefits of the CDD?" (listing STP, interoperability, and vendor agnosticism), "What is the initial focus?" (listing economic terms, dates, and issuer information), and "What are next steps and how can you be involved?" (stating the goal for end-2022 and inviting engagement). It also includes a "Resources" section with a link to the ICMA website and a "Contact us" section with a link to the CDD working group.

See also: [ICMA CDD Factsheet](#)

CDM for repos and bonds – Promoting interoperability and automation

```
"securityPayout" : [ {  
  "initialMargin" : {  
    "margin" : [ {  
      "haircut" : -0.04762  
    } ],  
    "marginType" : "CASH"  
  },  
  "meta" : {  
    "globalKey" : "2d51e4d8"  
  },  
  "repoDuration" : "TERM",  
  "securityLeg" : [ {  
    "buyerSeller" : {  
      "buyer" : "PARTY_1",  
      "seller" : "PARTY_2"  
    },  
    "deliveryMethod" : "DELIVERY_VERSUS_PAYMENT",  
    "meta" : {  
      "globalKey" : "c0fc2368"  
    },  
    "settlementAmount" : {  
      "amount" : 1292748.30,  
      "currency" : {  
        "value" : "USD"  
      }  
    }  
  }  
]
```



```
"securityPayout" : [ {  
  "initialMargin" : {  
    "margin" : [ {  
      "haircut" : -0.04762  
    } ],  
    "marginType" : "CASH"  
  },  
  "meta" : {  
    "globalKey" : "2d51e4d8"  
  },  
  "repoDuration" : "TERM",  
  "securityLeg" : [ {  
    "buyerSeller" : {  
      "buyer" : "PARTY_1",  
      "seller" : "PARTY_2"  
    },  
    "deliveryMethod" : "DELIVERY_VERSUS_PAYMENT",  
    "meta" : {  
      "globalKey" : "c0fc2368"  
    },  
    "settlementAmount" : {  
      "amount" : 1292748.30,  
      "currency" : {  
        "value" : "USD"  
      }  
    }  
  }  
]
```

CDM phase 1 (completed):

Firms can use the CDM to automate and streamline fixed-term repos:

- ✓ Trade execution
- ✓ Clearing
- ✓ Settlement

CDM phase 2 (Q1-2022 – Q1 2023):

Firms can use the CDM to streamline and automate lifecycle events and processes related to:

- ✓ Open repos
- ✓ Floating-rate repos
- ✓ Evergreens

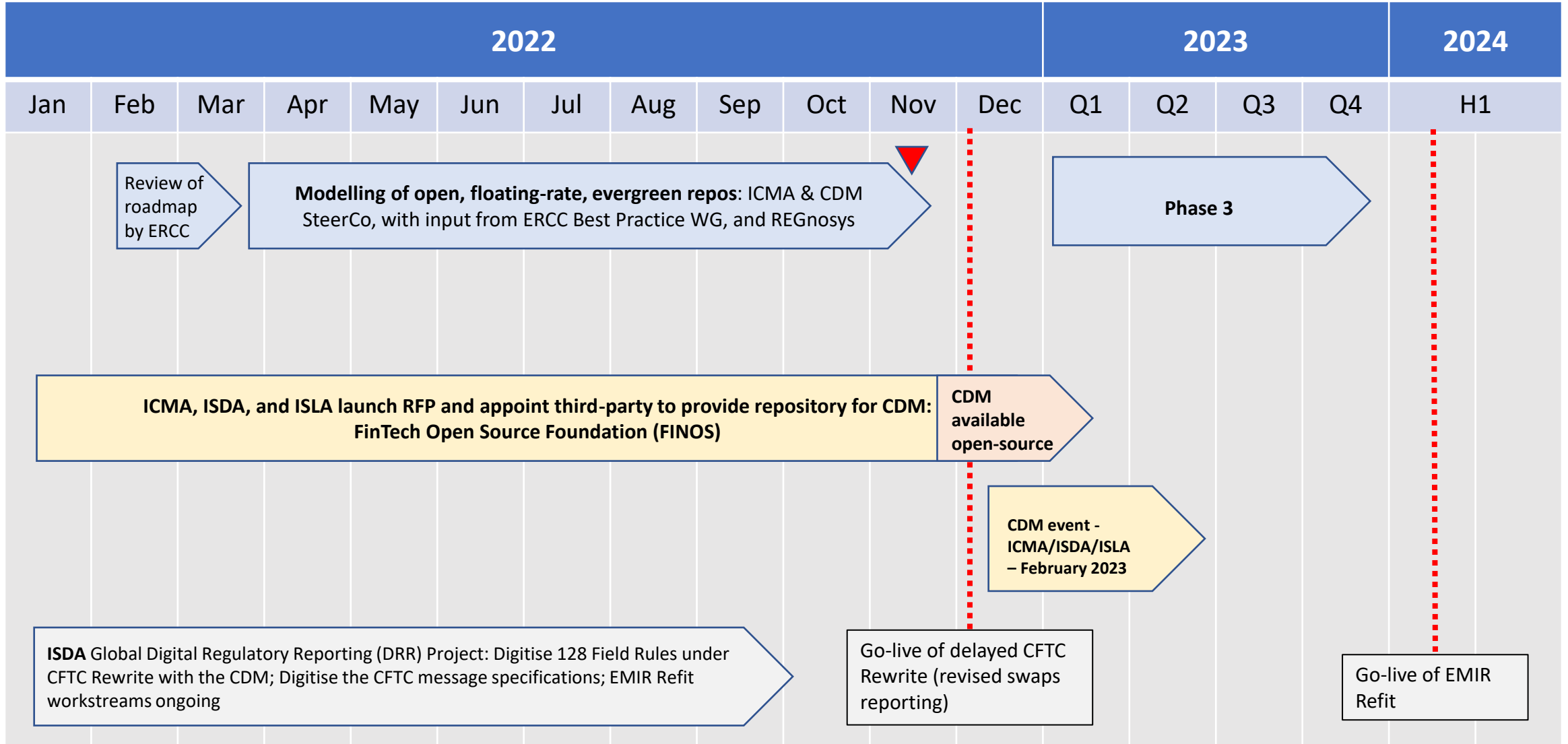
Each party uses the CDM as ‘common denominator’ or ‘common language’ to process repo transactions.

See also short [CDM video explainer](#).

Benefits:

- **Industry-wide efficiency gains**
- **Interoperability based on open-source framework**
- **Common foundation for innovation**
- **Cross-industry collaboration: ICMA, ISDA, ISLA**

Roadmap: Common Domain Model for repo and bonds phase 2



ICMA Fintech directories – Understanding the evolving landscape of platforms and vendor solutions

Primary markets technology directory (last updated February 2022)

- Compares the key features and capabilities of technology solutions available to automate all or part of the process of issuing debt securities such as roadshow logistics, legal documentation creation, or book-building.
- The directory includes over 40 technology solutions.

Electronic Trading Platform (ETP) directory (last updated January 2022)

- A consolidated mapping of electronic trading solutions for cash bonds covering trading protocols, product scope, regulatory status as well as MIC and LEI codes where relevant, amongst others.
- The directory comprises nearly 50 trading venues, OMS/EMS and bulletin boards.

Repo trading technology directory (last December 2021)

- Covers electronic trading solutions for repo and outlines solution capabilities, including eligible participants, trading methods, clearing as well as collateral management configurations.
- The directory includes 20 technology solutions.

FinTech mapping directory (last updated in October 2021)

- Compares the key features and capabilities of technology solutions available for repo and cash bond operations, split into 10 categories, including collateral management, intraday liquidity monitoring and reconciliations.
- The directory references over 200 solutions.

Recent events include:

- ICMA European Repo and Collateral Council (ERCC) Annual General Meeting, **Digital Repo and Common Domain Model implementation for collateral management**, 26 April 2022
- ICMA Fintech Forum: **Opportunities and risks arising from digital transformation and data management in global bond markets**, 31 March 2022
- ICMA and NCMF joint virtual conference: **Digital currencies in the Nordics - Implications for capital markets and beyond**, 10 February 2022
- ICMA's Asset Management and Investors Council virtual event: **Central bank digital currencies: what's in it for investors?**, 14 December 2021
- The recordings are available in ICMA's [Media Library](#).

ICMA Future Leaders podcast series: Fintech in the debt capital markets

- [Episode 1 | The business case for DLT in capital markets](#), 16 December 2021
In this first episode, IFL's Alexander Tollast and Alastria's Juan Jimenez Zaballos discuss the potential advantages of using DLT in the capital markets, as well as the challenges to be overcome for a fully-fledged market for digital securities to develop.
- [Episode 2 | The European regulatory landscape, CMU and digitalization](#), 20 January 2022
In this episode, IFL's Sven Renders and MEP Johan Van Overtveldt talk about the importance of completing the CMU, the benefits of the new DLT pilot regime regulation for Europe's capital markets and the added value of a digital Euro.
- [Episode 3 | The challenges behind cash settlement of digital bond transaction](#), 17 February 2022
In this episode, IFL's Sébastien Van Campenhoudt discusses with David News, Head of SDX how securities settlement could be performed by CSDs in a DLT environment, with a specific focus on how the cash leg of the transaction can be processed.
- [Episode 4 | The history and future of blockchain bonds](#), 17 March 2022
IFL's Alexander Tollast discusses with Jean-Marc Stenger, CEO of FORGE, how innovation and digitalization are changing capital markets, picking out landmark transactions from the past and looking at where we are today and what might change going forward.

Thank you for your attention

Any questions?

Contacts & Resources

ICMA contacts:

Georgina Jarratt, Managing Director

georgina.jarratt@icmagroup.org

+44 203 917 3876

Gabriel Callsen, Director

gabriel.callsen@icmagroup.org

+44 (0)20 7213 0334

Rowan Varrall, Associate

rowan.varrall@icmagroup.org

+44 (0)20 7213 0317

Useful links:

ICMA FinTech [Overview](#)

ICMA [CDM](#) webpage

[DLT Bonds Working Group](#)

ICMA [FinTech newsletter](#)

ICMA [Podcasts](#)

This presentation is provided for information purposes only and should not be relied upon as legal, financial, or other professional advice. While the information contained herein is taken from sources believed to be reliable, ICMA does not represent or warrant that it is accurate or complete and neither ICMA nor its employees shall have any liability arising from or relating to the use of this publication or its contents.

© International Capital Market Association (ICMA), Zurich, 2022. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without permission from ICMA.

