

Innovation  
Hub



# Interoperability for cross-border payment CBDC

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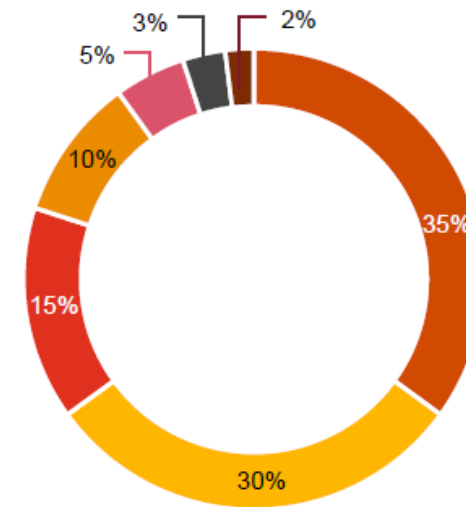
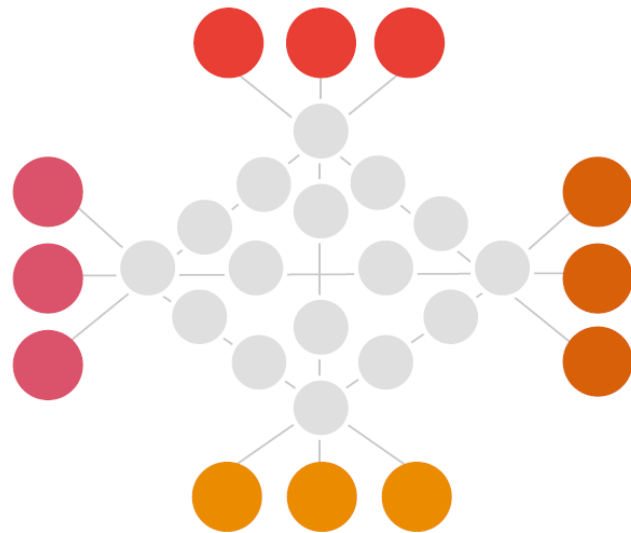
# Agenda

1. Motivation for Interoperability in Cross-Border Payments
2. Interoperability Definitions
  1. Business
  2. Semantic
  3. Technical
3. Four Models for Cross-Border CBDC
  1. Single access point
  2. Bilateral links
  3. Hub and Spoke
  4. Common Platform
4. BIS Innovation Hub cross-border solutions
  1. Mission
  2. Work Program
  3. Selected Projects
5. Conclusion



# Motivation

# Cross-Border Payments



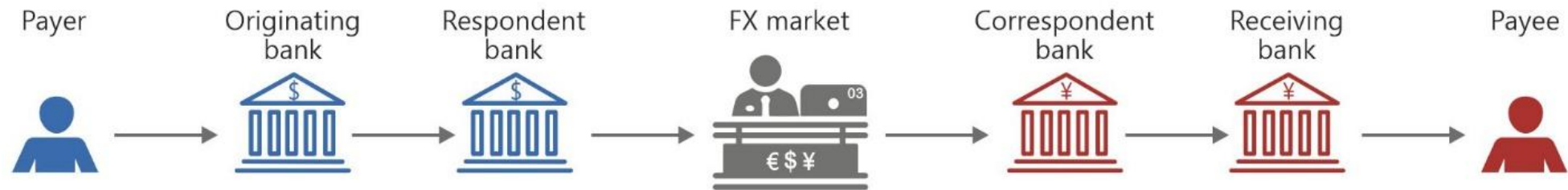
- Nostro-vostro liquidity
- Treasury operations
- FX costs
- Compliance
- Payment operations
- Overhead
- Network management

-  Costly
-  Complex operations
-  High FX settlement risk
-  Low transparency
-  Heavy reporting burden

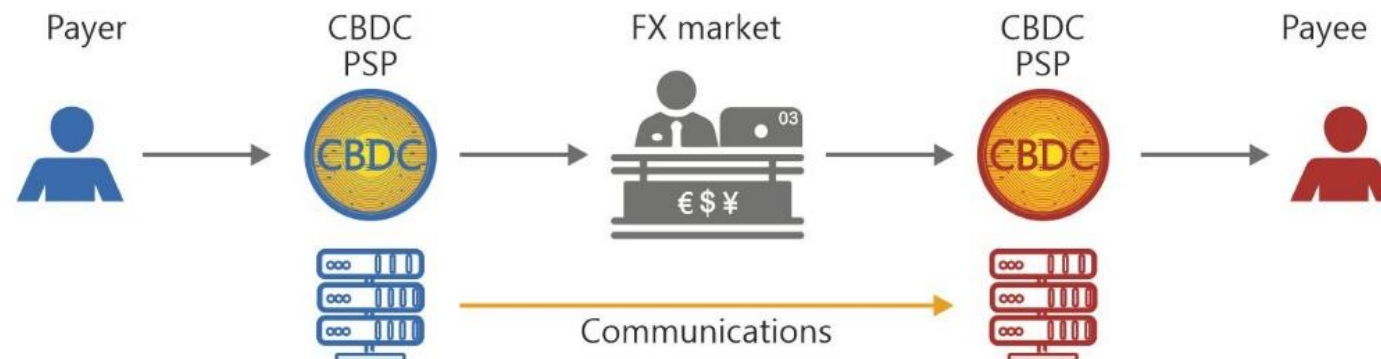
Sources; mCBDC Bridge & McKinsey, A vision for the future of cross-border payments,

## CBDCs could simplify the monetary architecture and substantially streamline the cross-border payment chain

### Today's arrangement



### mCBDC arrangement



# Cross-Border Payments

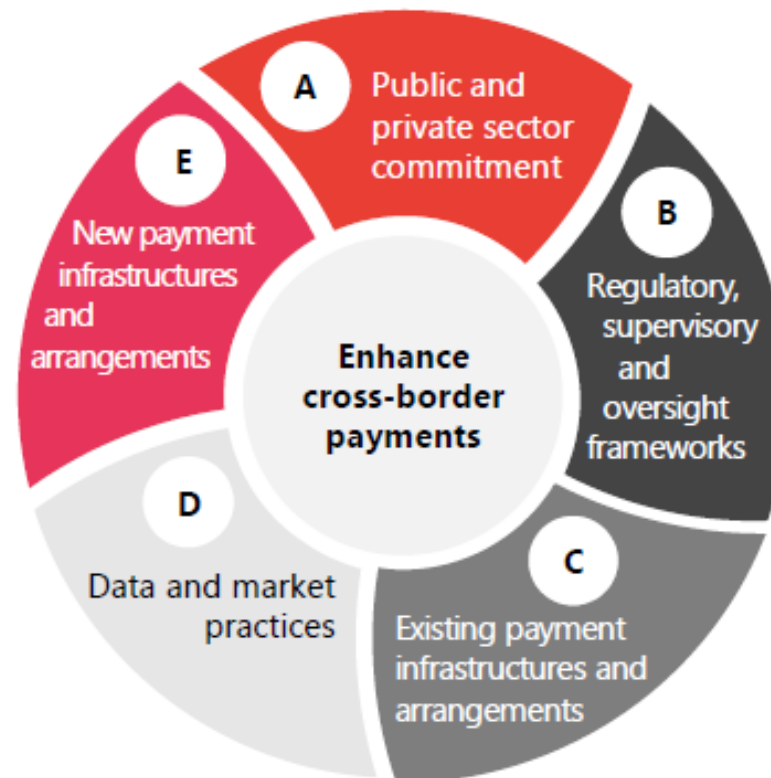


- AC and value increasing
- AC decreasing, value increasing
- AC increasing, value decreasing
- AC and value decreasing

The boundaries shown and the designations used in this map do not imply official endorsement or acceptance by the BIS. The graph crosses country-level data on active correspondents (ACs) with the value of payments sent or received over the same period, identified from SWIFT payment messages (see Box A). Individual countries appear in one of four colours, according to whether a positive/negative change in ACs was accompanied by a positive/negative change in the value of payments.

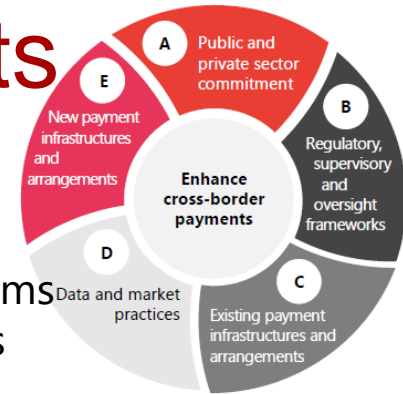
Source: SWIFT BI Watch, National Bank of Belgium; On the Global Retreat of Correspondent Banks, BIS Quarterly Review, March 2020

# Roadmap to enhancing cross-border payments



Sources; Enhancing cross-border payments: building blocks of a global roadmap Stage 2 report to the G20, July 20 2018

# Roadmap to enhancing cross-border payments



## A

1. Develop common cross-border payments vision and targets
2. Implement international guidance and principles
3. Define common features of cross-border payment service levels

## B

4. Align regulatory, supervisory and oversight frameworks
5. Apply AML/CFT consistently and comprehensively
6. Review interaction between data frameworks and cross-border payments
7. Promote safe payment corridors
8. Foster KYC and identity information-sharing

## C

9. Facilitate increased adoption of PvP
10. Improve (direct) access to payment systems
11. Explore reciprocal liquidity arrangements
12. Extend and align operating hours
13. Pursue interlinking of payment systems

## D

14. Adopt a harmonized version of ISO 20022 for message formats
15. Harmonise API protocols for data exchange
16. Establish unique identifiers with proxy registries

## E

17. Consider the feasibility of new multilateral platforms and arrangements for crossborder payments
18. Foster the soundness of global stablecoins arrangements
19. Factor an international dimension into CBDC designs

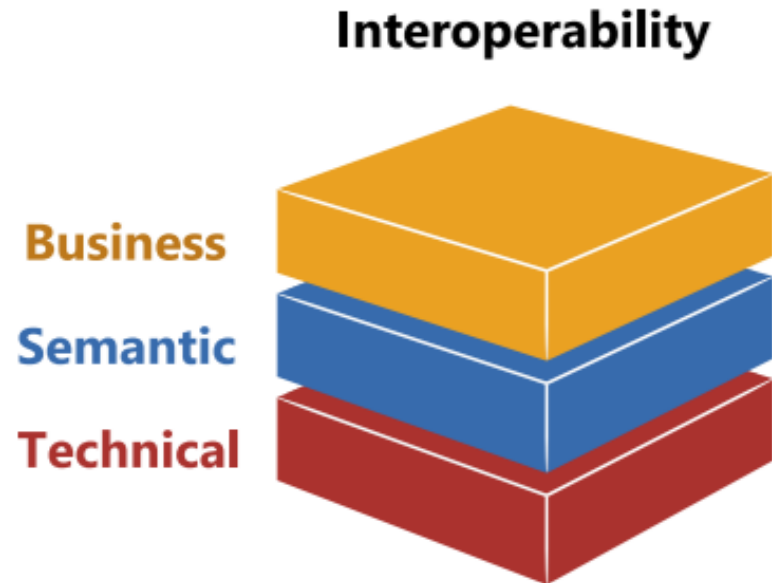
Sources; Enhancing cross-border payments: building blocks of a global roadmap Stage 2 report to the G20, July 20 2018





# Interoperability Definitions

# Attributes of interoperability



**Systems agree on rights and obligations, such as who can access the platform, when and how to clear and settle obligations among payment systems, and how to address risks of payment failures.**

**Systems speak and understand the same language so that data and information are interpreted uniformly and consistently across systems.**

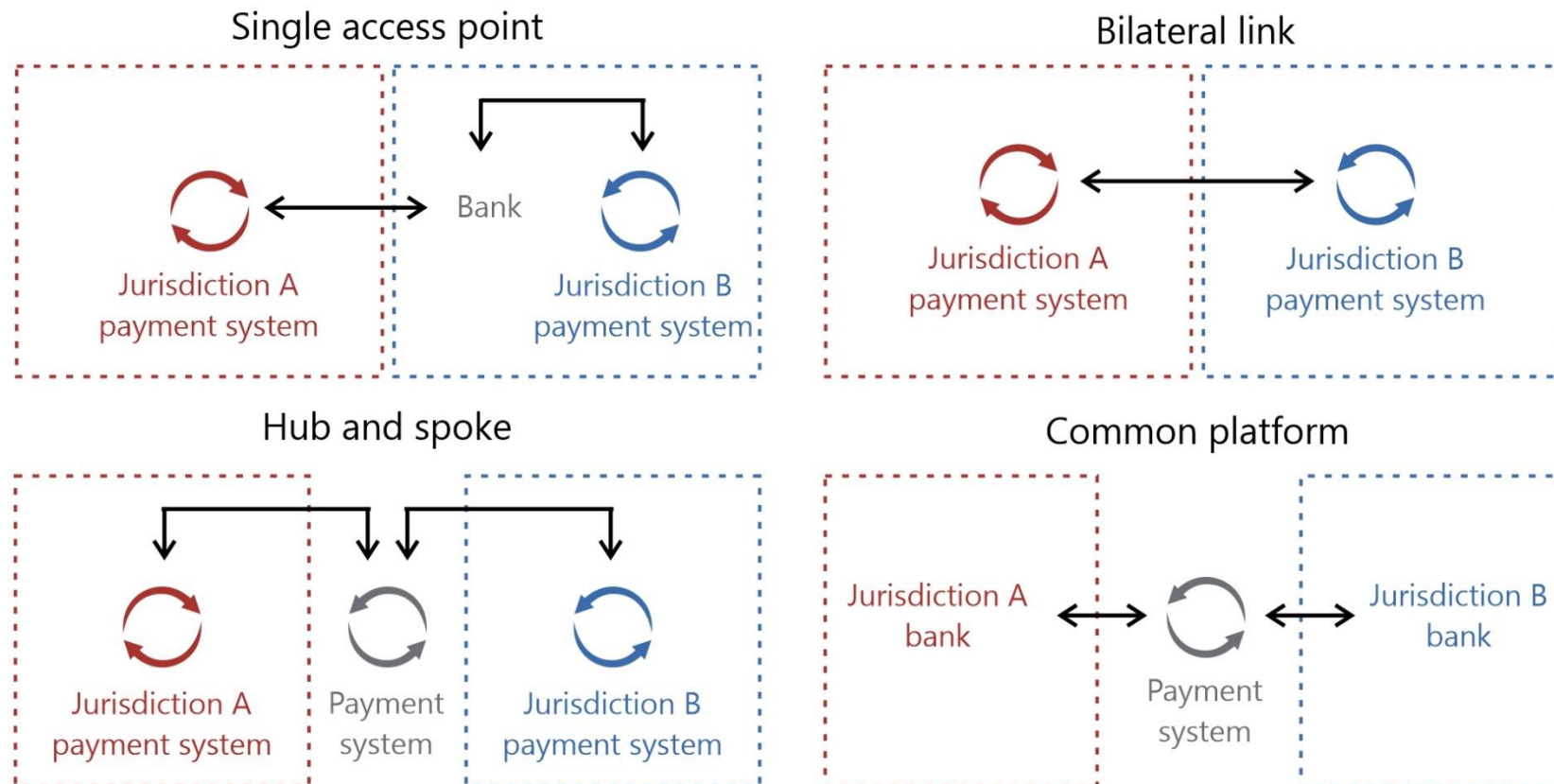
**Systems implement the same technical standards, such as message formats and data infrastructures, so that their hardware and software infrastructures can be connected directly.**

Source: Boar, C, S Claessens, A Kosse, R Leckow and T Rice (2021): "Interoperability between payment systems across borders", *BIS Bulletin*, No 49



# Models for Cross-Border CBDC

# Four models for interlinking payment systems



Source: Boar, C, S Claessens, A Kosse, R Leckow and T Rice (2021): "Interoperability between payment systems across borders", *BIS Bulletin*, No 49



# Innovation Hub Cross-Border Solutions

# BIS Innovation Hub

- We identify **critical trends in technology** affecting central banking and develop in-depth insights that are shared with the central banking community.
- We **develop public goods** in the technology space geared towards improving the functioning of the global financial system.
- We serve as the focal point for a **network of central bank experts on innovation**, with regular events to promote exchange of views and knowledge-sharing.



# BIS Innovation Hub



# Work Programme



## BISIH strategic focus themes

1	<b>Suptech and regtech</b>	Monitoring of fast-paced markets (Rio)	G20 TechSprint	Reg. reporting platform	
2	<b>Next-gen FMIs</b>		Foundational Digital Infrastructures (FDI)		
3	<b>CBDC</b>	Central bank money on tokenised platforms (Helvetia)	Platform for settling cross-border payments using multiple w-CBDC	Multiple CBDC bridge	Retail CBDC
4	<b>Open finance</b>			Digitising Trade Finance	
5	<b>Cyber security</b>	Secure Coding Competition			
6	<b>Green finance</b>			Tokenisation of Green Bonds	

Concluded projects
 Existing projects continuing into 2021/22
 New projects in 2021/22
 Name of the projects



# Selected Work

**BIS Innovation Hub**  
Hong Kong SAR Centre

**Inthanon-LionRock to mBridge**  
Building a multi CBDC platform for international payments  
September 2021

**PROJECT JURA**

**Cross-border settlement using wholesale CBDC**

BANQUE DE FRANCE | BIS Innovation Hub | SCHWEIZERISCHE NATIONALBANK  
BANQUE NATIONALE SUISSE | BANCA NAZIONALE SVIZZERA | BANCA NAZIONALA SVIZZERA | SWISS NATIONAL BANK

accenture | CREDIT SUISSE | NATIXIS | R3 | SDA | UBS

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**Project Dunbar: international settlements using multi-CBDCs**

Project Dunbar brings together the Reserve Bank of Australia, Central Bank of Malaysia, Monetary Authority of Singapore and South African Reserve Bank with the Bank for International Settlements Innovation Hub to test the use of central bank digital currencies (CBDCs) for international settlements. The project will also explore the development of technical prototypes using distributed ledger technologies of Corda and Quorum.

**Project Dunbar: International settlements using multi-CBDCs (Nov 2021)**  
8 Nov 2021

Project Dunbar brings together the Reserve Bank of Australia, Bank Negara Malaysia, Monetary Authority of Singapore, and South African Reserve Bank with the BIS Innovation Hub to test the use of central bank digital currencies (CBDCs) for international settlements. Learn about the expected benefits of multi-CBDCs and how it could make cross-border payments cheaper, faster, and safer. See how we've faced and solved critical challenges in designing a multi-CBDC shared settlement platform.

**Improving cross-border payments with multi-CBDCs**

Cross-border payments today can be slow and expensive. Unlike domestic payments, where banks can pay each other directly on a single national payments platform, there is no single international platform today for cross-border payments and settlements.

Instead, the correspondent banking model is used, where banks hold foreign currency accounts with each other. A single cross-border payment could pass through multiple correspondent banks, using the foreign currencies held with them. Each leg of the overall transaction takes time and effort to process, with fees levied that add up quickly and are passed on to customers, resulting in slow and costly cross-border payments.

A multi-currency common settlement platform would enable transacting parties to pay each other in different currencies directly, without the need for intermediaries such as correspondent banks.

- **Transacting on a multi-CBDC shared platform**
- **Designing and developing a multi-CBDC platform**
- **Design & Technical Workstreams**

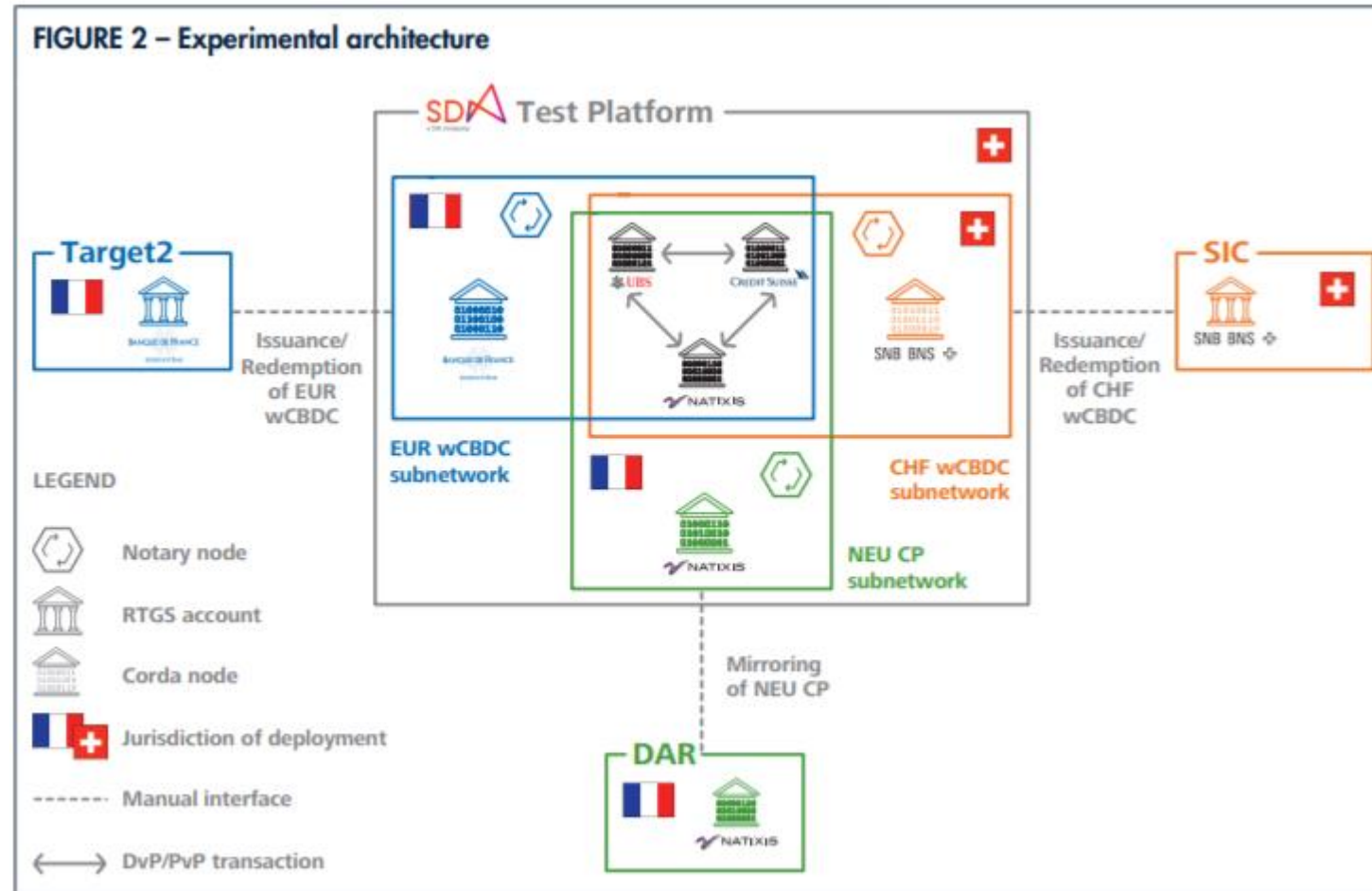
**BIS Innovation Hub**

**Nexus**  
A blueprint for instant cross-border payments

with support from

MAS Monetary Authority of Singapore | NPCI National Payments Corporation of India

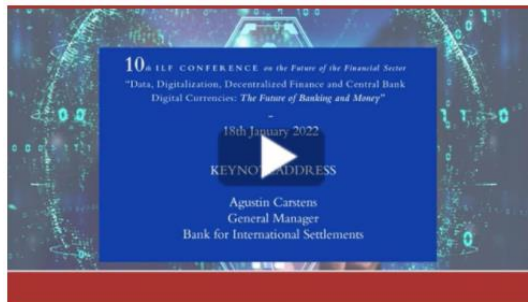
# Jura Architecture



# Conclusion

## Digital currencies and the soul of money

“At the core of this system are central banks. They act as operators, overseers and catalysts in payments markets, and regulate and supervise private providers in the public interest. Working together, they can provide central bank digital currencies (CBDCs). Unlike private stablecoins, CBDCs do not need to borrow their credibility from sovereign currencies; they inherit the trust that the public already places in their currency. They can thus serve as a sound foundation for future innovation...



### Digital currencies and the soul of money by [Agustín Carstens](#)

**18 Jan 2022** | Goethe University Institute of Law and Finance Conference on the Future of the Financial System  
What holds the monetary system together at its core? In a speech at @goetheuni, Agustín Carstens takes inspiration from Germany's literary giant Goethe to reflect on the soul of money in the digital era.

The answer to Goethe's Gretchenfrage has not changed: central banks and public authorities are still the glue that holds the monetary and financial system together. Private sector services and innovation are essential and should thrive on this foundation. But trust can never be outsourced or automated.”

Speech by Agustín Carstens, General Manager of the BIS, Goethe University's Institute for Law and Finance (ILF) conference on "Data, Digitalization, the New Finance and Central Bank Digital Currencies: The Future of Banking and Money", 18 January 2022

