

# Wholesale CBDC: New Kid on the Block ... oder neuer Wein in alten Schläuchen?

Omnisecure // 23 January 2024

# Agenda

1. What is Central Bank Digital Currency (CBDC)?
2. What is the difference between Retail CBDC and Wholesale CBDC (wCBDC)?
3. What have central banks done already with wCBDC?
4. What are the ECB plans for wCBDC?
5. Who are the contributing central banks?
6. Who is invited to participate?
7. What does the market need?
8. What are the alternatives for the market?
9. What is the potential scenario for the next few years?



# 1. What is Central Bank Digital Currency (CBDC)?



A **central bank digital currency** (CBDC; also called digital fiat currency or digital base money) is a **digital currency** issued by a **central bank**, rather than by a commercial bank. It is also a liability of the central bank and denominated in the sovereign currency, as is the case with physical banknotes and coins.



## Digital Euro

The ECB's digital euro is an example of a retail CBDC: a digital euro would be a digital form of cash, issued by the central bank and available to everyone in the euro area. A retail CBDC is a widely available digital payment instrument denominated in the country's unit of account that is a direct liability of the country's monetary authority.

## 2. What is the difference between Retail CBDC and Wholesale CBDC?

### Retail Central Bank Digital Currency (rCBDC)

- Accessible by the **general public** (individuals, merchants, etc..)
- Often conceptualized with cash-like functionalities for every-day purchases
- To service as **digital access to legal tender** in light of a **declining cash usage**
- **Different access models** are researched: directly by CB or via banks/other intermediaries
- **The preparation phase for the digital Euro**, which began in November 2023, will focus on further preparing for the development of a digital euro

### Wholesale Central Bank Digital Currency (wCBDC)

- Only available to accredited **financial and certain non-bank institutions** (access to reserve accounts at Central Bank)
- wCBDC enable financial intermediaries to **access new capabilities** that are not provided by classical central bank reserves today - **cheaper and frictionless payments and settlement, cross-border payments, programmability**



### Why do we need a digital euro?

“By making public money available for digital payments, a digital euro would make all our lives easier. We would be able to use it whenever and wherever we need to, for free. This would help strengthen the monetary sovereignty of the euro area and foster competition in the European payments sector”.

Source: ECB



### 3. What have central banks done already with wCBDC?



**Project Mariana: BIS and central banks of France, Singapore and Switzerland successfully test cross-border wholesale CBDCs**

Explores automated market-makers (AMM) for the cross-border exchange of hypothetical Swiss franc, euro and Singapore dollar wholesale CBDCs

**French Central Bank CBDC Projects Aim to Manage DeFi Liquidity, Settle Tokenized Assets**

The Bank of France is looking at a wholesale central bank digital currency that would be used by banks and financial markets.

Coindesk 27.09.2022

Project mBridge Update

**Experimenting with a multi-CBDC platform for cross-border payments**

October 2023

Hong Kong Monetary Authority, Central Bank of the UAE, Digital Currency Institute of the People's Bank of China and Bank of Thailand.

**Banca d'Italia: Integrating DLTs with market infrastructures: analysis and proof-of-concept for secure DvP between TIPS and DLT platforms**

**BIS, Bank of England conclude DLT settlements pilot**

The Bank of England and the Bank for International Settlements (BIS) Innovation Hub London Center have tested a distributed ledger technology-powered settlements system between the institutions. The insights of the project will be used by the Bank of England in its real-time gross settlement (RTGS) system.

Cointelegraph, Dec 20 2023

**Deutsche Bundesbank enables DLT securities settlement in central bank money**  
Deutsche Börse, Deutsche Bundesbank and Germany's Finance Agency have developed and successfully tested a settlement interface for electronic securities,

Ledger Insights, Mar 24, 2021



# 4. What are the ECB plans for wCBDC?

## Trials and Experiments in 2024

### Increased focus on wCBDC



# 5. Who are the contributing central banks?

What are the offered solutions?



## Bundesbank Trigger Solution

An interface between **conventional payment systems (T2)** and a **DLT-based securities system**. The trigger chain from the Bundesbank and a Market DLT are connected via an **interoperability module**.

- ❑ A private-permissioned blockchain (Hyperledger Fabric)
- ❑ Transferring payment instructions to TARGET2



## Banca d'Italia TIPS Hash Link

**TARGET Instant Payment Settlement (TIPS)** enables **transfer funds within seconds of the transaction**. The service is available 365 days a year. Settlement average speed is 500 payments per second

- ❑ Banca d'Italia's hash-link contract
- ❑ An API gateway to transfer payment instructions to TIPS
- ❑ A smart contract acting as escrow for the security



## Banque de France Full DLT Interoperability

**Permissioned DLT** aimed to facilitate **settlement of securities** and **enable interoperability** with DLT market platforms

- ❑ A cash token representing central bank money is created on a private-permissioned blockchain (Hyperledger Fabric)
- ❑ Cash tokens are unlocked and transferred to the payee through the revealed hash secret of Hash-time locked contract (HTLC) where atomicity of the settlement is performed

Each of the three solutions offer unique features and are per se difficult to compare

## 6. Who is invited to participate?

Invited for participation are..

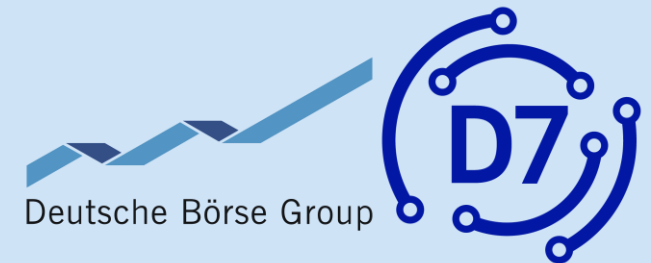
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- 1 Eligible market participants (with access to TARGET)
- 2 Eligible market DLT operators
  - **Central Security Depositories (CSDs)** operating a Securities Settlement System based on DLT / operating a DLT platform
  - **Operators of a DLT settlement system or a DLT trading and settlement system** as authorised under the DLT Pilot Regime Regulation
  - **Credit institutions, investment firms, market operators and other licensed financial institutions operating a DLT platform**, as duly licensed under CRD IV, MiFID II and/or other relevant national legal frameworks subject to a case-by-case assessment to ensure proper risk management

### Use Cases:

Delivery-versus-payment (DvP) and  
Payment-versus-payment (PvP)

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- The D7 Platform services the digital issuance and lifecycle management of securities:
  - 🔄 DvP settlement of primary and secondary market transactions
  - 🤝 Settlement of lifecycle events, e.g. coupon payment
  - ✓ Efficient settlement of intra-day transactions, e.g. repos



## 7. What does the market need?

A payment solution which makes use of the capabilities offered by DLT



### Industry 4.0

Intelligent networking of machines and processes in industry with the help of information and communication technology – including the Internet of Things, machine-to-machine communication and production facilities



### Pay-per-use

Sensors on machines can record their usage and feed the data into a smart contract that triggers payments automatically



### Automated settlement of securities transactions

Settlement via atomic transactions (either both sides of a trade happen or nothing) enabling T+0 settlement and eliminating settlement risk



### Programmable payments

Conditional payments to automate transactions. Programmability comes through smart contract that triggers the payment – use case in capital markets, insurance, supply chain

**CBDC will not be decentralized**

# 8. What are the alternatives for the market?

There are also private issuers of digital money

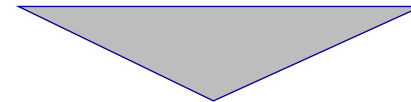
Other	Issued by unregulated institutions	Issued by regulated institutions		Eurosystème
<p><b>Crypto</b></p> <p>Native cryptocurrencies - BTC, ETH, ALGO, etc</p>	<p><b>Asset-backed Stablecoins</b></p> <p>Stablecoins that are backed by financial assets (such as central bank money, commercial money, e-money, securities and commodities)</p>	<p><b>Tokenized deposits</b></p> <p>Transferable tokens issued on a blockchain by a licensed depository institution which evidence a deposit claim against the issue</p>	<p><b>E-money token</b></p> <p>MiCAR-regulated stablecoins. The Markets in Crypto Assets Regulation (MiCA) entered into force in June 2023 in the EU</p>	<p><b>TARGET2</b></p> <p>Real-time gross settlement (RTGS) system owned and operated by the Eurosystème</p> <p>Used in trigger solutions - connecting traditional payment rails with DLT</p>



USDC



USDT



**Coinvertible**

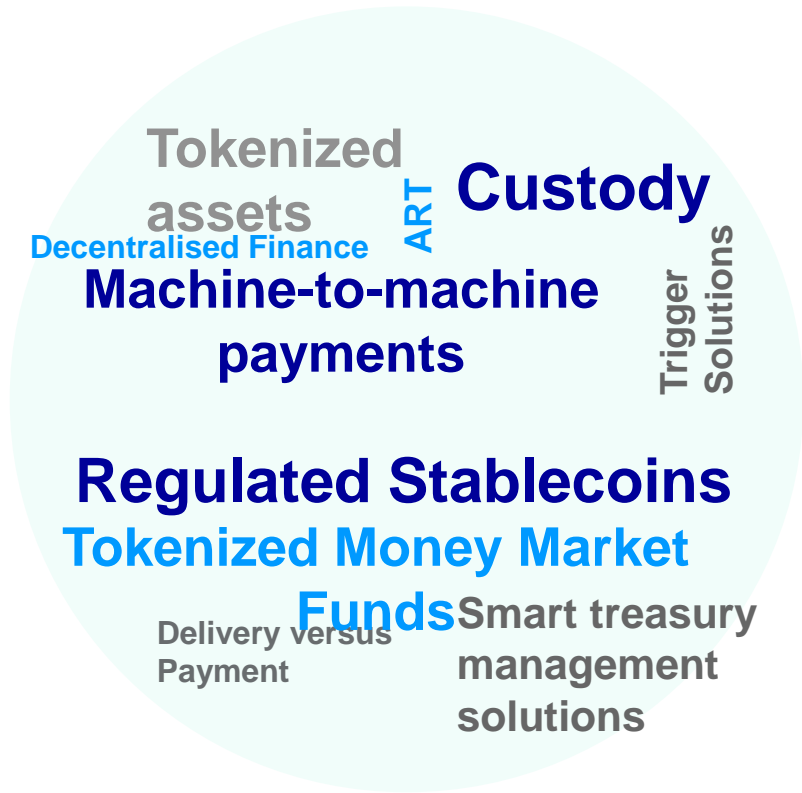
Say hello to **EURCV**

**DWS joins forces with Flow Traders and Galaxy to launch euro stablecoin**

DWS today announced its intention to form AllUnity as part of a new partnership between DWS, Flow Traders and Galaxy. The aim of the joint venture is to advance the tokenized economy through the issuance of a fully collateralized euro-denominated stablecoin. The long-term focus of AllUnity, which will be regulated by Germany's financial regulator BaFin, will be to accelerate the broad market launch of digital assets and tokenization.  
DWS Group, Dec 13, 2023

# 9. What is the potential scenario for the next few years?

Programmable infrastructure enables new use cases



## Euro wCBDC

Eurosystem has not decided yet on implementation and decision on permanent adoption will take time. Currently exploring and understanding use case in ECB trials.



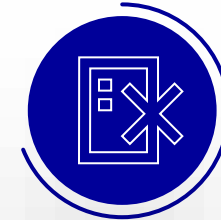
## Synthetic CBDC

- Private banks can issue stablecoins close to CBDC



## Regulated Euro Stablecoins

Increasing value proposition for cash on chain in 2024/25 – regulated as E-money (MiCAR)



## Unregulated Stablecoins

Received little traction for institutional customers, driven by de-peg/balance sheet risks and regulation



## New Payment Systems

E.g. Fnalty as a new payment system from UK - started with GBP

# Fazit

Alter Wein in neuen  
Schläuchen

Neuer Wein in alten  
Schläuchen



Neuer Wein in neuen Schläuchen

Thank you!

