

Central Bank Digital Currency Regulatory Landscape

Regulatory trends



Central Bank Digital Currencies

Current situation and main regulations around the
Globe

Why Management Solutions?

Annex 1: Acronyms

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Central Bank Digital Currencies

General overview

Recent advances in CBDC capabilities are pushing regulators worldwide to establish regulations and different types of guidelines for the appropriate use of CBDC

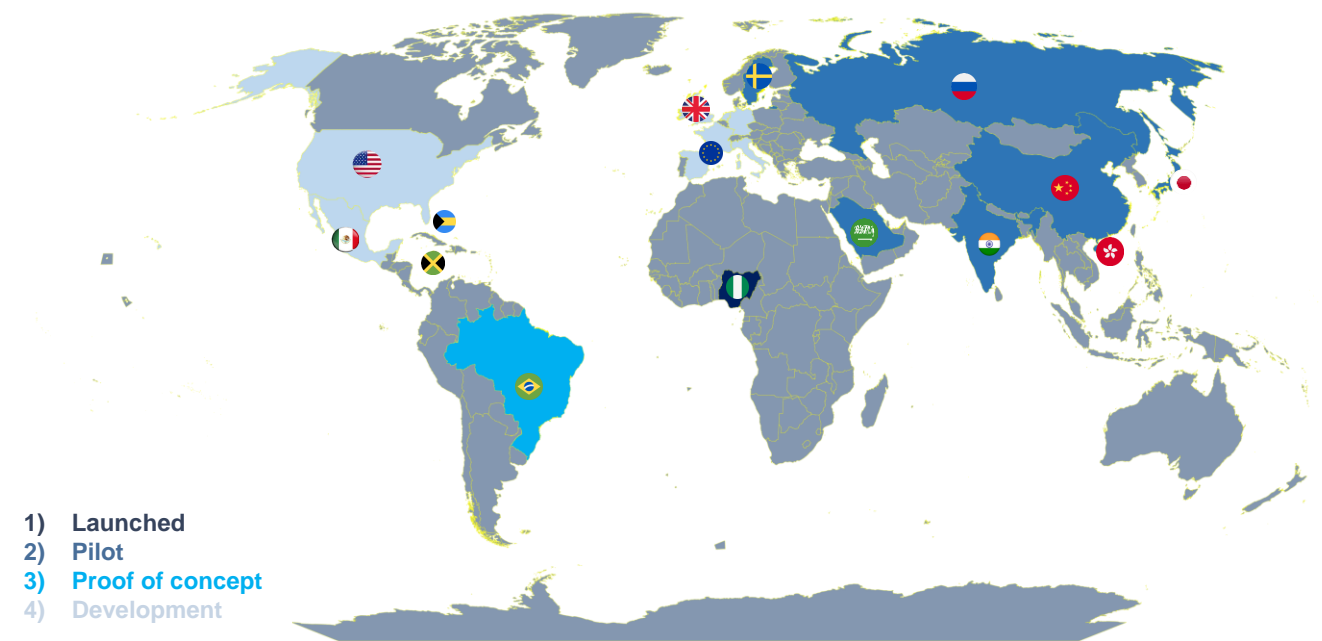


General overview

- 1 A **CBDC**, is a new form of money issued electronically by a central bank. Central banks seek to issue their own digital currencies in order to improve the payment system, given the increase in electronic payments and the decline in the use of cash, but also because the creation of unregulated private electronic payment instruments, such as stablecoins, may put financial stability at risk.
- 2 At present, **there is still no specific regulation** governing the issuance and distribution of CBDC, however, all countries are working on the development of such regulations. Even some countries have already launched their own CBDC..
- 3 In recent years, different international organizations such as the BIS or the WB have issued different recommendations on CBDC, considering that their issuance requires international cooperation and coordination.



Worldwide CBDC status



1) Launched: full implementation, 2) Pilot: test the effectiveness of a fully-developed solution, 3) Proof of concept: used to test the feasibility of an incomplete idea, 4) Development: gather knowledge to create digital currency or discover new ways to improve

1

Central Bank Digital Currencies Motivations and monetary policy

Cryptocurrencies have shaken up the economic ecosystem and sparked a debate on the digitisation of traditional currencies by Central Banks

Motivations



There are many reasons to explore digital currencies, and the **motivation of different countries** for issuing CBDC **depends on their economic situation**.

Every day a multitude of transactions are carried out by retailers

Cash is becoming increasingly obsolete

Increases in means of payment that could leave traditional currencies behind

Today's users increasingly require a digital environment

Loss of control of the financial system and of central bank money as a monetary anchor

Monetary policy



The effects of CBDC on monetary policy transmission are expected to be **relatively small** in normal times; however, these effects can be **more significant** in an environment with **low interest rates or financial market stress**

Allow Central Banks to **gather information** regarding the economy

Provide the Central Bank with a **better understanding** on how **households and firms are using money**

Change the **implementation framework** of monetary policy

Main tool for **conducting monetary policy**, with the CBDC interest rate set to negative levels to eliminate the "zero lower bound" on nominal interest rates

Blur the **distinction between fiscal and monetary interventions**, making issues around the fiscal-monetary nexus more acute

Alter the **international transmission of monetary policy**, amplifying the **international spillover** of shocks

1 | Central Bank Digital Currencies









Benefits and risks

The risks and pressures created by digital currencies have led Central Banks to be in a continuous debate about whether this is the right solution and to seek an appropriate balance between benefits and risks

Benefits

-  Increase efficiency in payments
-  Protection of monetary sovereignty
-  Greater financial inclusion
-  Low/ No risk asset
-  Improve safety, cost and time
-  Better transmission of monetary policy
-  Help with illegal activities
-  Means against private digital currencies









Risks

-  Increase risk of cyber-attack
-  Lack of privacy
-  Vulnerability of commercial banks
-  Effects on monetary stability
-  Implementation risk
-  Regulatory challenge
-  Dependence on network speed
-  Responsibility AML / CFT

2 | Current situation and main regulations around the Globe

Most advanced CBDC








Many countries have started on the path towards developing their own CBDC, and each is at a different stage of the project, either researching, testing or piloting, and launching fully functional CBDC implementations

Country	Project Name	Project Status	Description	Link
 Bahamas	Sand Dollar	L	Sand Dollar is the digital currency created by the Central Bank of the Bahamas, which has become the world's first government-backed blockchain-based digital currency in 2020	link
 Jamaica	JAM-DEX	L	Jamaica's CBDC is called JAM-DEX. JAM-DEX is backed by the Bank of Jamaica, which has sole authority to issue it	link
 Nigeria	e-Naira	L	eNaira is a Central Bank of Nigeria-issued digital currency that provides a unique form of money denominated in Naira and serves as both a medium of exchange and a store of value	link
 Brazil	Digital Real (Drex)	C	The BCB has been developing actions aimed at issuing the Brazilian sovereign currency in digital format. Based on the results of a working group created in August 2020, the BCB established the guidelines for issuance of the digital Brazilian currency, named Drex	Link
 China	e-CNY	P	According to its central bank, the digital currency, also known as the e-CNY, is both a risk-free alternative to these commercial platforms and a replacement for physical cash, which is becoming obsolete	link
 Hong Kong	e-HKD	P	The HKMA has initiated an e-HKD retail CBDC pilot scheme	link
 India	Digital Rupee	P	The Reserve Bank of India is set to launch the pilot of its CBDC, which it categorizes as legal tender in a digital form. Known as the digital rupee, it will be exchangeable at par with existing	link
 Japan	Digital Yen	P	The Bank of Japan is working on a proof of concept for a retail central bank digital currency, which is currently in its second phase and will undergo additional functionality testing in 2023	link

2 | Current situation and main regulations around the Globe


Most advanced CBDC

Many countries have started on the path towards developing their own CBDC, and each is at a different stage of the project, either researching, testing or piloting, and launching fully functional CBDC implementations

Country	Project Name	Project Status	Description	Link
 Russia	Digital Ruble	P	Bank of Russia intends to beta test its CBDC with a set group of participants, and which is expected to fully launch in 2024. The Digital Ruble is said to pose minimal risk as it will be issued by the state monetary regulator and backed by traditional money	Link
 Saudi Arabi + United Arab Emirates	Aber (cross boarder Project)	P	In Jan 2019, the SAMA and the UAECB announced a common digital currency project, "Aber", for financial settlements. The purpose is to improve the efficiency of international remittances and develop an additional system for domestic payments settlement in case of disruption	Link
 Sweden	e-Krona	P	The Riksbank is focusing more on the design of an e-krona that can be issued, and on investigating what amendments are required to existing legislation should the Riksdag decide to issue an e-krona. The work is based on the ongoing international work on digital central bank currencies	Link
 Europe	Digital Euro	D	The ECB together with the National Central Banks of the euro area are working to look into the possible issuance of a digital euro	link
 Mexico	Digital Peso	D	The development of Mexico's CBDC is still at an early stage and is unlikely to be ready for launch in 2024	link
 United Kingdom	Digital Pound	D	The UK Government and the Bank of England have been exploring the idea of introducing a CBDC – a "digital pound". One of the main motivations for a digital pound is that it should promote innovation in domestic payments	link
 United States	Digital Dollar	D	The Digital Dollar Project a neutral, non-profit forum focused on exploring digital innovation in money and future-proofing the US	Link

3 Why Management Solutions?

MS has expertise in the world of payments and financial investments, which together with a functional and technical understanding of the underlying technology makes it a key player in the CBDC business




Overview and training

- Current scenario, consultations, newsletter etc.
- Training led by professionals from all fields
- Experts in execution and transmission of ideas.



Regulatory Compliance and Financial Crime

- Support to comply with regulatory requirements (i.e. mandatory final registration 2021).
- Analysis and models for Financial Crime control.




Exploration of business opportunities and elaboration of Business Cases

- Benchmarks, R&D laboratory, success stories
- Launching of proofs of concept
- Business cases of pilots and projects...




Accompaniment in the implementation project

- Requirements gathering for the implementation of a complete solution
- Preparation and execution of test cases
- PMO and QA



Definition of the business model and associated processes

- Definition and documentation of the business processes related to the asset to be digitised.
- Complete vision of the product and the solution.



Analysis of blockchain solutions and technology definition

- Exposure of options and competitors.
- Data flow including oracles.
- Drafting of the logics of the Smart Contracts to be configured in a Blockchain environment.



All this, in partnership with Fintechs (as implementers) or independently.

A | Annex 1: Acronyms

AML	Anti Money Laundering
BCB	Central Bank of Brazil
BIS	Bank for International Settlements
CBDC	Central Bank Digital Currency
CFT	Counter- financing terrorism
ECB	European Central Bank
HKMA	Hong Kong Monetary Authority
SAMA	Saudi Arabian Monetary Authority
UAECB	United Arab Emirates Central Bank
WB	World Bank

A | Annex 2: Europe - Digital Euro

General overview

The EC has put forward a proposal for a Regulation on the establishment of the digital euro, and other for a Regulation on the provisions of digital euro services by PSP incorporated in Member States whose currency is not the euro



Context

The EC has been working closely with the ECB to jointly review a broad range of policy, legal and technical questions on the **digital euro**. The Eurosystem Task Force identified possible **scenarios** that required the issuance of a digital euro. Due to the COVID-19 pandemic, there has been an ongoing trend, an increasing number of people are choosing to pay digitally.



Objectives

The proposal for a **Regulation on the establishment of the digital euro** establishes and regulates its essential aspects to ensure the use of the euro as a single currency across the euro-area. The proposal for a **regulation on the provision of digital euro services by PSP incorporated in non-euro areas** aims to lay down the specific obligations that PSP incorporated in these States shall respect when distributing the digital euro and the supervision and enforcement of those obligations.



Next steps

- This Regulations should enter into force on the **20th day following that of its publication** in the OJEU.
- Once agreed by the EP and the Council, the ECB will decide when and for which amount the digital euro should be issued.

Main aspects euro States

Establishment and issuance of the digital euro

Legal tender

Use

Distribution

Fees

Technical features

Modalities of distribution

Privacy and data protection

AML/CFT framework

Main aspects non-euro States

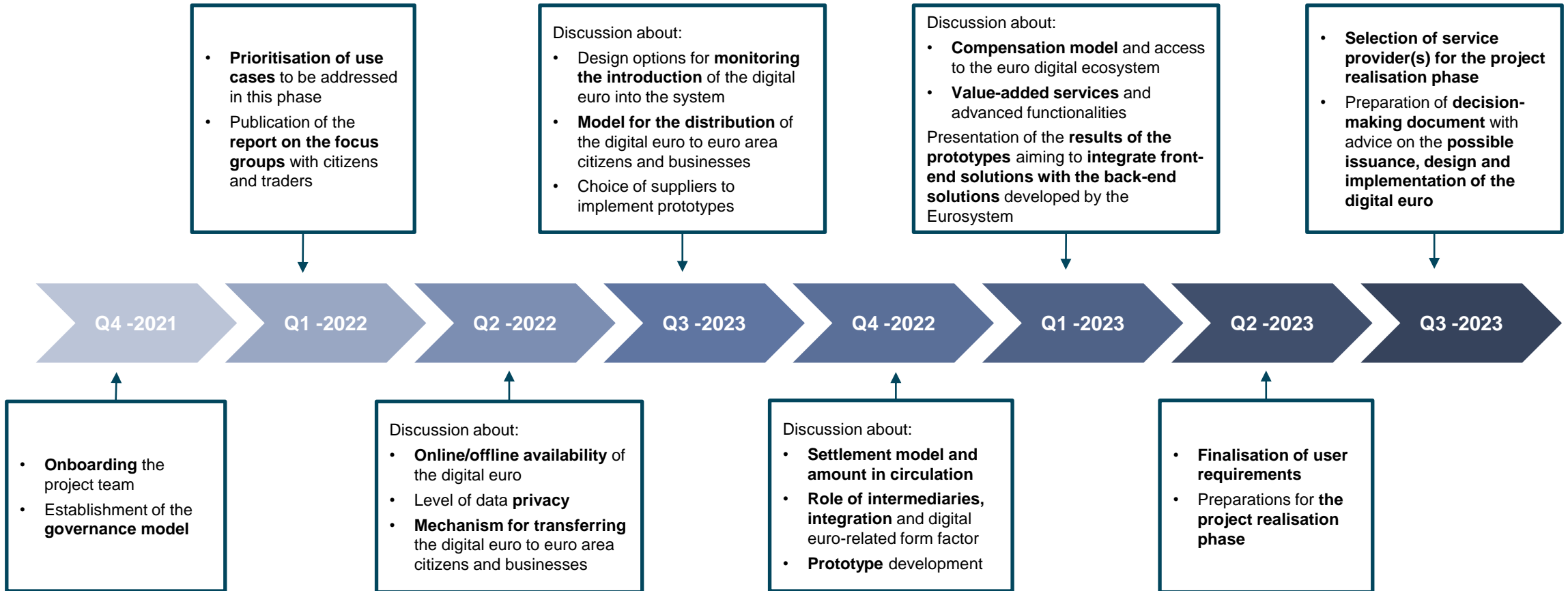
Distribution of the digital euro

Applicable law and competent authorities



A | Annex 2: Europe - Digital Euro Calendar

The ECB follows the following timetable in the Digital Euro project



The Council Government will decide in autumn 2023 whether to launch a realisation phase to develop and test the appropriate technical solutions and business arrangements needed to provide a digital euro. This phase could take around three years.

A | Annex 2: Europe - Digital Euro

General aspects euro States

The Regulation establishes the digital euro and regulates its essential aspects to ensure the euro's use as a single currency across the EU. It is available for retail payments and is authorized by the ECB or National Central Banks of euro-area Member States



Establishment and issuance of the digital euro

- The ECB shall have the exclusive right to **authorise the issue** of the digital euro, and the ECB and the National Central Banks may issue the digital euro.
- The provisions of European regulation on payment services in the internal markets, cross-border payments and on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, shall apply to digital euro payment transactions.
- Member States should designate **competent authorities to monitor and enforce the legal tender obligations** under this Regulation.



Legal tender

- The digital euro is of **mandatory acceptance by payees**, unless any of the exceptions proposed applies (e.g. the right for a microenterprise not to accept the digital euro, unless it accepts comparable digital means of payment). Member States would be also able to introduce more exceptions.
- The obligation to accept the digital euro fully respects the contractual freedom of parties, as a payee will furthermore not be required to accept digital euro payments if both the payee and the payer have expressly agreed on a different means of payment prior to the payment.
- The digital euro shall be convertible with euro banknotes and coins at par. The proposal also gives the payer the right to choose to pay in digital euro or cash in those situations where mandatory acceptance of both applies.



Use

- It is proposed that the ECB should develop instruments to limit the use of the digital euro as a store of value, including holding limits. The proposal also defines a set of criteria that the parameters and use of the instruments developed by the ECB should meet with the view of safeguarding financial stability (e.g. these instruments should not prevent accepting and initiating a digital euro payment transaction).

A | Annex 2: Europe - Digital Euro

General aspects euro States

The Regulation establishes the digital euro and regulates its essential aspects to ensure the euro's use as a single currency across the EU. It is available for retail payments and is authorized by the ECB or National Central Banks of euro-area Member States



Distribution

- All PSP authorised in the EU may provide digital euro payment services, including additional digital euro payment services, in addition to basic digital euro payment services. PSP do not need an additional authorisation from their competent authorities to provide digital euro payment services.
- For the purpose of distributing the digital euro, PSP would need to enter into a contractual relationship with digital euro users. A contractual relationship between digital euro users and the ECB is excluded.
- Digital euro users may have one or several digital euro payment accounts, held at the same or at a different PSP.
- The provision of digital euro services by PSP shall be limited to certain natural or legal persons. The same applies to PSPs incorporated in Member States whose currency is not the euro.



Fees

- Merchant service charge or inter-PSP fee are regulated to ensure that they do not exceed the lowest of the following amounts:
 - i) the relevant costs incurred by PSP, including a reasonable margin of profit
 - ii) fees or charges requested for comparable means of payment.

For this purpose, the ECB should regularly monitor the relevant costs, fees and charges and publish and revise periodically those amounts. Competent authorities designated by Member States would be responsible for ensuring compliance.



Technical features

- It is proposed that the digital euro should be designed in a way that facilitates its use by the general public, including financially excluded persons or persons at risk of financial inclusion, persons with disabilities, functional limitations or limited digital skills, and older persons.

A | Annex 2: Europe - Digital Euro

General aspects euro States

The Regulation establishes the digital euro and regulates its essential aspects to ensure the euro's use as a single currency across the EU. It is available for retail payments and is authorized by the ECB or National Central Banks of euro-area Member States



Modalities of distribution

- Users may use the European Digital Identity Wallets to onboard and make payments.
- The ECB should: ensure that the digital euro is compatible with private digital payment solutions to enable synergies between the digital euro and private digital payment solutions, including with shared infrastructures and terminals at the point of interaction; provide support for the processing of disputes, including technical and fraud disputes, related to the digital euro, at euro area level.
- PSP may develop their proprietary front-end services.
- The digital euro users should have the choice between the different solutions available. The digital euro should enable digital users to switch their digital euro payment accounts to another PSP at the request of the digital euro user.



Privacy and data protection

- The ECB and National Central Banks may process personal data, which includes the settlement of digital euro payment transactions. Personal data processing should build on the use of state-of-the-art security and privacy preserving measures, such as pseudonymization or encryption, to ensure that data is not directly attributed to an identified digital euro user by the ECB and National Central Banks. The EC is empowered to adopt delegated acts on the categories of personal data processed payment services providers, the ECB and National Central Banks and providers of support services.



AML & CFT framework

- For offline digital euro payments, the ECB, the National Central Banks and PSP will not gain access to personal transaction data. PSP will only access funding and defunding data related inter alia to the identity of the user and the amount funded and defunded, similar to personal data processed by PSP when users deposit or withdraw cash. PSP should transmit these funding and defunding data, upon request, to Financial Intelligence Units and other competent authorities when users are suspected of money laundering or terrorist financing. The EC is empowered to adopt implementing acts to set holding and transaction limits.

A | Annex 2: Europe - Digital Euro

General aspects non-euro States

The purpose is to lay down rules concerning the specific obligations that PSP incorporated in Member States whose currency is not the euro shall respect when distributing the digital euro and the supervision and enforcement of those obligations



Distribution of digital euro

- The provision of digital euro services by PSP incorporated in Member States whose currency is not the euro should be primarily aimed to:
 - Natural or legal persons residing or established in the Member States whose currency is the euro.
 - Natural or legal persons who opened a digital euro account at the time they resided or were established in the Member States whose currency is the euro, but no longer reside or are established in such Member States.
 - Visitors subject to the conditions laid down in Article 20 of the Regulation establishing the digital euro.



Applicable law and competent authorities

- The Directive (EU) on payment services in the internal market, applies to the digital euro. That Directive provides that central bank money issued for retail use, and not only banknotes and coins should be considered as 'funds' within the meaning of that Directive.
- The AML/CFT framework on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing Regulation (EU) on information accompanying transfers of funds should apply with respect to the digital euro.
- PSP incorporated in Member States whose currency is not euro may distribute the digital euro, subject to the supervision and sanction regimes of Member States whose currency is not the euro.
- The competent authorities would be responsible for supervising and enforcing any obligations laid down in these Union Acts, the same competent authorities would also be responsible for ensuring respect of the relevant provisions of the Regulation establishing the digital euro.

A | Annex 3: Brazil - Digital Real

General aspects

The BCB announced on 6th March that it will start the development of a platform to test operations with the Digital Real (Drex)



Context

The final deployment of the platform is planned for the **end of 2024**, within the framework of the RD Pilot.

The working group will consist of 15 banking entities.

The pilot will also involve the National Secretariat of Finance (STN) and will include the issuance of Federal Government Securities and the settlement of transactions involving these securities with Delivery versus Payment (DvP) at the end-customer level.



Objectives

The Central Bank of Brazil intends to **tokenise** three types of assets within the Real Digital pilot project: **Brazilian currency (real), bank deposits and federal government securities**.

Fabio Araujo, coordinator of the initiative, hinted that CBDC will seek to function as a kind of "**Pix for financial services**".



Aspects to take into account

- In this pilot project, separate from the LIFT Challenge Real Digital, CBDC is based on a distributed ledger technology (DLT) designed to **settle wholesale interbank transactions**. Retail access will be enabled through tokenised bank deposits, digital representations of deposits held by financial institutions (FIs) or payment institutions (PIs).
- **Hyperledger Besu**, compatible with Ethereum solutions, is the blockchain of choice for testing.
- Tokenised assets will follow their **respective regulatory regimes** so as not to generate asymmetry between the forms of these current and tokenised assets.
- The pilot operations will focus on instant settlement to ensure delivery versus payment (DvP) of financial assets with some programmability, which will enable **transactions between banks using CBDC with instant settlement at the end-customer level using tokens**.
- The privacy of transactions is one of the aspects that the BCB will analyse in more detail.
- Instead of real transactions, the pilot project will initially consist of simulations.



[Access Document](#)

A | Annex 3: Brazil - Digital Real

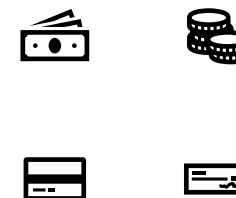
General aspects

Fenasbac, in collaboration with the Central Bank of Brazil (BCB), has launched a special edition of the LIFT LAB, called LIFT Challenge Digital Real, focused on the development of MVPs on different use cases



Delivery versus payment
(DvP)

Payment versus payment
(PvP)



Internet of Things (IoT)

Decentralised finance
(DeFi)




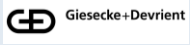
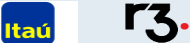

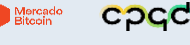









The **BCB** has communicated that of its intention to create a CBDC that aggregates the **BCB's four current projects** (Pix, Open Finance, Currency Internationalisation and Real Digital) so that citizens can **access information and services** offered by different banking institutions using the same applications.

A | Annex 3: Brazil - Digital Real

General aspects

Nine proposals have been selected to participate in the LIFT Challenge Digital Real

Bank	Proposal
	Through DeFi tools, Aave seeks to pool resources from savers to offer, among other financial products, loans that meet the standards of the Brazilian national financial system.
	Banco Santander proposes the conversion to digital format (tokenisation) of vehicle and real estate titles to improve the efficiency of their negotiation, through a DvP method , in which payment for the property occurs at the same time as its ownership rights are transferred to the buyer.
	Febraban proposes the trading of digitised (tokenised) financial assets using a DVP method , where payment for the financial asset takes place at the same time as its ownership is transferred to the buyer.
	Giesecke + Devrient propose a payment and transfer system based on a version of the Brazilian Real Digital that can carry out transactions even when the payer and the receiver do not have access to the internet (offline dual payments).
 	This project proposes to facilitate international payments and transfers between Brazil and Colombia using a Pvp method , in which holders of different currencies can exchange these currencies with each other, and the delivery of the currency to the counterparty occurs simultaneously.
   	This project proposes the purchase and sale of digital assets using a DvP method , in which payment for the cryptoasset takes place at the same time as its ownership right is transferred to the buyer. On 24 February, it reported the success of its test run, which involved simulating DvP transactions using a prototype of the digital real on the Stellar blockchain, enabling near real-time settlement.
 	TecBan + Capitua are looking for an e-commerce parcel delivery solution through a network of smart lockers based on the IoT, in which different e-commerce providers would be able to access secure delivery points.
	Vert presents a rural finance solution based on programmable money, using a self-issued digital currency with a value linked to the Brazilian real (Brazilian real stablecoin).
	Visa do Brasil proposes a solution for the financing of small and medium-sized enterprises based on a DeFi protocol that allows them to viably access external sources of finance.

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Experience**

**Maximum
Commitment**

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