Global CBDC Challenge Problem Statements

👋 Welcome to Global CBDC Challenge!

💡 Here is everything you need to know about the Challenge.

Register and Submit Proposals here:
https://hackolosseum.apixplatform.com/hackathon/globalcbdcchallenge

Find out more about CBDC Sandbox & API documentation here:
https://bit.ly/3qfQ3QD

📢 What is the Global CBDC Challenge?

A retail Central Bank Digital Currency (CBDC) built for next-generation financial rails has the potential to increase payment efficiencies, improve financial inclusion and support the broader digitalisation drive in the economy. The Global CBDC Challenge launched by the Monetary Authority of Singapore, in partnership with the International Monetary Fund, World Bank, Asian Development Bank, United Nations Capital Development Fund, United Nations High Commission for Refugees, United Nations Development Programme, and the Organisation for Economic Co-operation and Development (OECD), seeks innovative retail CBDC solutions to enhance payment efficiencies and promote financial inclusion.

The Global CBDC Challenge is open to FinTech companies, financial institutions and solution providers around the world. Up to 15 finalists will be selected to receive mentorship from industry experts and be given access to the APIX Digital Currency Sandbox for rapid prototyping of digital currency solutions. The Sandbox will offer a comprehensive test and development platform that includes core-banking APIs from APIX, payment APIs from Mojaloop Foundation, digital currency APIs from Mastercard, Partior and R3, and more than 100 APIs provided via the APIX marketplace. Participants may also engage the Hyperledger global open source developer community for support and collaboration technologies. Additionally, Amazon Web Services will support finalists by providing access to the AWS platform and AWS promotional credits.

Finalists of the Challenge will have the chance to pitch their solutions to the global audience at the Demo Day to be held at this year's Singapore FinTech Festival in November 2021. Up to three winners will be selected to receive S$150,000 in cash prizes.

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Global CBDC Challenge Journey

Aa Milestones	Date
Launch of Global CBDC Challenge	@Jun 28, 2021
Registration & Submission of Proposal	@Jun 28, 2021 → Jul 23, 2021
Selection of 15 finalists	@Jul 26, 2021 → Aug 27, 2021
8-Week Acceleration Phase	@Sep 06, 2021 → Oct 31, 2021
Finalists pitch at SFF 2021	@Nov 08, 2021

📒 Problem Statements

Overview

A retail Central Bank Digital Currency (CBDC) is a digital form of the currencies under consideration by many central banks today. Retail CBDCs, supported by next-generation financial rails built on the latest innovations, could present firms and households with better, cheaper and faster opportunities for making payments that are compatible with the growing digitalisation of economies.

Nevertheless, the design and issuance of retail CBDC needs to overcome specific challenges. To promote widespread acceptance and adoption, retail CBDCs must be designed to meet both current and anticipated future payment needs, such as micropayments, privacy and programmability. To create new pathways to broader financial access, the retail CBDC system needs to be more open and inclusive than current arrangements, allowing a broader set of firms and individuals to directly access and offer services on its financial rails. More importantly, these improvements to the payment system will need to be achieved without compromising resilience and security, integrity and performance, as well as the economy's monetary and financial stability. Indeed, there is great scope to use innovative technology in possible retail CBDC solutions to overcome specific trade-offs, and achieve welfare gains for the consumer, firms, and society.

Today, there does not appear to be off-the-shelf or existing systems that can comprehensively satisfy these multiple requirements. The creation of new solutions requires fundamental research and joint exploration by both policymakers and technologists.

To catalyse development of a set of technologies to enable issuance of retail CBDC, we are launching a global challenge in partnership with valuable members of the ecosystem to support the development of solutions which should address the following areas:

1. Instrument
2. Distribution
3. Infrastructure

We invite submissions that tackle the problem statements. Participants are strongly encouraged to cover more than one problem statement in their submissions. Participants who attempt to discuss how the remaining problem statements could also be approached would be considered favourably.

Up to 15 submissions will be shortlisted to develop prototypes to demonstrate these concepts at the Singapore FinTech Festival 2021. Participants who attempt more problem statements with effective solutions will be prioritised for the shortlist.

Problem Statements Details

1. Instrument

To improve and expand the accessibility and utility of digital payments

Problem Statement #01: New Functionalities vs Inclusivity

Can a retail CBDC system be embedded with additional functionalities beyond a basic transfer of value without requiring users to use smartphones (or other expensive/complex hardware)? How might this improve the efficiency and effectiveness of Government-to-Person payment programmes in the context of an economy with low levels of digital penetration?

Problem Statement #02: Security vs Accessibility

Can the design of a retail CBDC system be highly secure for users (e.g. one that prevents unauthorised uses and illicit transactions) without compromising the ease of use? Would such a system be able to cater to the varied needs of the elderly, minors, and those with disabilities?

Problem Statement #03: Availability vs Risk of Disputes

Can offline transactions be enabled in areas with no or limited internet connectivity? What safeguards against double-spending and counterfeiting can be embedded to minimise disputes related to offline payments?

Problem Statement #04: Recoverability vs Anonymity

In the event of theft, damage or loss of a wallet, card or instrument, can a retail CBDC system adequately trace transactions, limit the loss or support the recovery of lost funds without compromising user identity?

2. Distribution

To mitigate risks associated with payment transfers and market infrastructure

Problem Statement #05: Widespread Frictionless Use vs Control

Are there technological features that can be incorporated into a retail CBDC solution to minimise the risk of significant and abrupt outflows from bank deposits to the CBDC, while ensuring that the use of the CBDC is as seamless as possible? Are there technical designs that would allow a retail CBDC to be used for cheaper and faster cross-border payments, and yet mitigate the risk of generating more volatile and destabilising capital flows between countries?

If the proposed technological solution is dependent on or designed for particular policy choices by central banks, participants should elaborate on their assumptions in the submission.

Problem Statement #06: Personal Data Protection vs System Integrity

Can the retail CBDC solution protect personal and consumer transactions data, while allowing for monitoring, detection and prevention of illicit activities on the network (e.g. money laundering /terrorism financing, fraud, scams and corruption)?

Problem Statement #07: Expanding Access to Financial Services vs Guarding against Data Monopolies

How can the design of a retail CBDC solution allow participating firms to harness payment data to enable the offering, customising, or improving the pricing of financial services (e.g. credit, insurance) to users, while avoiding the undesirable effects of data monopolies on consumer welfare over time? How might users retain control over use of their data?

Problem Statement #08: Coexistence vs Integration Complexity

How can a retail CBDC solution allow financial institutions to distribute CBDCs to the end user in a manner that leverages existing national payment rails such as a country's payment systems, while keeping participation cost competitive at minimal disruption? How can it process payments between users on different payment systems without introducing the need to involve additional intermediaries, or needing custom integration for onboarding?

3. Infrastructure

Provision of a viable CBDC infrastructure that is low-cost, efficient and robust and provides for trusted settlement of payment transactions among participants.

Problem Statement #09: Decentralisation vs Accountability

How can a retail CBDC infrastructure be made more resilient to single points of failure? Can concentration risks be minimised through decentralisation? How can we develop a safe, stable and sustainable governance model for such decentralised infrastructure with clear lines of responsibility and accountability? How can the interests of citizens and market participants as well as financial stability be safeguarded in the event of a failure of such an infrastructure?

Problem Statement #10: Extensibility vs Operational Resilience

Can a retail CBDC infrastructure be flexible yet robust, allowing for computationally intensive use of programmable functions and addition of new capabilities without incurring additional overheads in terms of cost, operational performance or introducing system vulnerabilities?

Problem Statement #11: Privacy vs Performance

Can a retail CBDC infrastructure incorporate privacy preserving capabilities while remaining high performing, with fast response time, low latency and scalability to support large deployment?

Problem Statement #12: Interoperability vs Standardisation

Standardisation reduces overhead and integration cost. However, international standardisation will require significant coordination. How can interoperability be achieved across different instruments of digital money and across different technologies without a commonly accepted standard? Retail CBDCs in different jurisdictions would need to be interoperable with each other, as well as with nonCBDC systems and non-CBDC forms of digital money to enable better, cheaper, faster payments both cross-border and domestically.

Need Help ❓

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⚠ For Global CBDC Challenge (non-APIX platform related) queries, please reach out to **gcc@tribex.co**

For APIX platform related queries during registration or the proposal submission process, please reach out to: **apixsupport@afin.tech**