



Annex B – Global CBDC Challenge Finalists

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Entity / Consortium	Country	Solution Description
ANZ Banking Group Limited	Australia	The solution considers the use of digital technologies and CBDC as a use case for being an enabler to the government and citizens digital ecosystem experience. The solution seeks to leverage the investments and solutions that are already in place or are being implemented within the ecosystem, for e-governance and smart nation initiatives. It draws upon known services like national ‘digital identity’ management.
Bitt	Barbados	Bitt is the provider of the Digital Currency Management System (DCMS). The DCMS encompasses a core transaction network, Numa architecture, a secure minting system, and Digital Currency Operations Manager for the monetary authority/administrator of the system. Bitt has architected the DCMS to integrate with CBDC-standard transaction networks; both blockchain based and traditional. For this submission, the Bitt DCMS will be integrated with the Stellar Protocol.
Citibank N.A., Singapore Branch	Singapore	Regulated Liability network (RLN) is a Distributed Ledger Technology network that encompasses all regulated liabilities. What the RLN seeks to deliver is a true, two-tier payments network. On the first tier, the consumer/retail customer interfaces are maintained by the private regulated sector. In addition, the liabilities of the private regulated sector are used for consumer / retail customer transfers. Central bank liabilities are used for settlement between private regulated entities. This proposal is supported by Citibank, OCBC, SETL and BondEvalue.
cLabs, Inc.	United States	Inspired by the idea that digital currencies should be easy and safe for anyone to use, Valora is a new digital wallet focused on usability. It supports the Celo Identity Protocol which allows users to verify their phone number and send payments to their contacts. Celo is an open

		cryptographic protocol allowing applications to make transactions, and run smart contracts, in a secure and decentralised fashion.
Consensys	United States	ConsenSys and Visa are partnering to build a Visa Retail CBDC Payment module supported by the ConsenSys Blockchain Infrastructure to demonstrate the concept of how a retail CBDC solution can cater for widespread and frictionless use.
Extolabs LLC	United States	Using edge based cryptography of distributed ledgers and low cost hardware wallets with easy to use on-card multi factor authentication or mobile App software wallets. ExtoPay provides universal access to smartphone or non-smartphone users, secure offline transactions, recovery of lost funds, fraud prevention, and user controlled cryptographically secured digital ID. The system also enables agent-based onboarding/KYC, cash-in/out and access to banking services. ExtoPay is an open-loop system which aims to enable negligible transaction fees and migrate monetization to financial services or closed loop marketing for merchant and brand loyalty.
Giesecke+Devrient advance52 GmbH	Germany	G+D Filia solution is a token-based digital currency resembling cash, enhanced with smart features and without the friction of physical money. It has been designed from the very beginning to allow for consecutive offline payments. Filia works both on smartphones and hardware wallets, can provide full privacy at the payment layer and supports programmable use cases. To achieve that, a different approach from the standard DLT platforms were taken. They do not record account balances or transaction metadata on a blockchain, but only the validity of a particular token together with its denomination.
HSBC Bank (Singapore) Limited and HSBC Holdings plc	Singapore	HSBC believes DLT (Distributed ledger technology) consensus plays a significant role in retail CBDC systems. Consensus algorithms have direct impacts on many properties of a retail CBDC system, including performance and privacy. Therefore, to avoid data monopoly from privileged institutions and support large scale retail usage, they have work out a new DLT

		consensus algorithms with an open DLT framework integration solution to help CBDC retail scale the usage and maintain the balance between privacy and performance.
IBM	United States	The solution seeks to build a resilient and robust retail CBDC infrastructure to handle large number of transactions, while maintaining the operation performance and ensuring security to a great extent through a zero trust system that is flexible and easy to include new capabilities without incurring additional cost and changes to existing architecture and design.
IDEMIA	Singapore	IDEMIA and ConsenSys are collaborating using ConsenSys' blockchain infrastructure and IDEMIA's payment card system to offer a comprehensive CBDC solution allowing for secure offline retail payments using a variety of devices from smartphones to plastic cards in order to maximise financial inclusion.
Criteo	France	Using Secretarium's Secure-enclave Distributed Ledger Technology (SDLT) leveraging Intel SGX Chip for the secure enclaves, the solution aims to provide a high-performance DLT that is suited for highly secretive financial transactions, ultra large scale CBDCs. Compared to traditional DLT, SDLT allows for transactions to be committed and encrypted in memory on chain or in ledger.
IOG Singapore Pte Ltd	Singapore	Unchained is a mobile-based digital wallet that aims to mimic the functionality of physical wallets. It allows users to store digital identities and digital cash. Furthermore, it allows users to make private offline Peer-to-Peer transfers.
Soramitsu	Switzerland	Soramitsu proposes an overlay application that enables financial institutions to query digital payments data necessary for the specification of tailored financial services to the unbanked applicants, while enforcing secure and strict conditions of data minimisation and informed consent, without disclosure of full payment data sets.



Standard Chartered Bank	Singapore	The design of this solution delivered by Shareable-Liberty Consortium, a consortium founded by Standard Chartered Bank, SC Ventures, and Shareable Assets Pte Ltd. Their solution is focused on addressing the economic interoperability across different digital and non-digital assets, utilising core blockchain technology from Shareable Assets. The proposed approach is to implement a shared real-time digital “chart-of-accounts” to consolidate and position-keep assets’ values across participants, while reducing semantics complexity to positional information by abstracting away the higher-level data representations and programmability.
Xfers Pte. Ltd.	Singapore	Xfers and SEBA together propose a solution through the adoption of Hybrid CBDC to achieve both private data protection and system integrity, leveraging credible compliance capabilities as well as cutting edge layer-2 security mechanisms. The proposed solution aims to strike the right balance between personal and transaction data protection while maintaining the necessary monitoring to prevent illicit activities on the public network.