Global Layer One

Foundation Layer for Financial Networks

June 2024

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1 Introduction

The Global Layer One (GL1) initiative explores the development of a multi-purpose, shared ledger infrastructure based on Distributed Ledger Technology (DLT), that is envisioned to be developed by regulated financial institutions for the financial industry.

The vision is for regulated financial institutions to leverage this shared ledger infrastructure across jurisdictions to deploy inherently interoperable digital asset applications, governed by common standards and technology for assets, smart contracts, and digital identities. Creating a shared ledger infrastructure would free up trapped liquidity that is fragmented across multiple venues and enable financial institutions to collaborate more effectively. Financial institutions could expand services offered to clients while reducing the cost of standing up their own infrastructure.

GL1 focuses on the provision of a shared ledger infrastructure for financial institutions to develop, deploy and use applications for financial industry use cases along the value chain, such as issuance, distribution, trading and settlement, custody, asset servicing, and payments. This could enhance cross-border payments as well as the cross-border distribution and settlement of capital market instruments.

Establishing a consortium of financial institutions that leverages DLT to tackle specific use cases such as cross-border payments is not a new development. The transformative potential of the unique approach taken by GL1 is the development of a shared ledger infrastructure that could be utilised across disparate use cases, and its ability to support composable transactions involving multiple types of financial assets and applications, while complying with regulatory requirements.

By tapping into the capabilities in the broader financial ecosystem, financial institutions can provide a richer and wider suite of services to end users and get to market faster. GL1's shared ledger infrastructure would enable financial institutions to build and deploy composite applications, leveraging capabilities from other application providers. This could be in the form of institutional grade financial protocols[1] that model and execute foreign currency exchange and settlement programmatically. This, in turn, could improve interactions of tokenised monies and assets, enabling synchronised delivery versus payment (DvP) settlement for digital and other tokenised assets, and payment versus payment (PvP) settlement for foreign currency exchanges. This could be extended further to support delivery versus payment versus payment (DvPvP), whereby the settlement chain could be composed of a set of synchronised tokenised monies and asset transfers.

This paper introduces the GL1 initiative and discusses the role of a shared ledger infrastructure that would be compliant with applicable regulations and governed by common technological standards, principles and practices, on which regulated financial institutions across jurisdictions[2] could deploy tokenised assets. The participation of public and private sector stakeholders is critical to ensure that the shared ledger infrastructure is established in accordance with relevant regulatory requirements and international standards, while meeting the needs of the market.

[1] Institutional grade financial protocols seek to combine the innovations of decentralised finance protocols with safeguards. An example is the use of an Automated Market Maker to facilitate buy and sell orders in a self-executing manner, provide quotes, and set a price based on a predefined, transparent formula considering supply and demand (Oliver Wyman Forum, DBS, Onyx by J.P.Morgan, & SBI Digital Asset Holdings, 2022).

[2] The GL1 initiative may be rolled out in select jurisdictions prior to rolling out globally.

2 Background and Motivation

The legacy infrastructure underpinning global financial markets was developed decades ago, resulting in siloed databases, disparate communication protocols, and significant cost incurred maintaining proprietary systems and bespoke integrations. While global financial markets have remained robust and resilient, the needs of the industry have grown in sophistication and scale. Incremental upgrades made to existing financial infrastructures alone may not be sufficient to keep pace with the complexity and the rate of change.

Challenges with Existing Market Infrastructures
• Siloed Books and Records • Multiple Messaging Protocols • Costly and Error Prone Data Transformation • Manual Process and Reconciliation

Table 1: Challenges with existing market infrastructures

Consequently, financial institutions are turning to technologies such as DLT for its potential to modernise market infrastructures and deliver a more automated and cost-efficient model. It is noted that industry players have launched their own digital asset initiatives respectively. However, they select different technologies and vendors for their respective initiatives, which limits interoperability.

The limited interoperability between systems has resulted in market fragmentation, whereby liquidity is trapped across different venues, in part due to incompatible infrastructures. Holding liquidity in different venues could increase funding and opportunity costs. In addition, the proliferation of disparate infrastructures and the absence of globally accepted taxonomy and standards in relation to digital assets and DLT, increase the cost of adoption as financial institutions would need to invest and support different types of technologies.

To enable seamless cross-border transactions and unlock the full value of DLT, regulatory-compliant infrastructures that are designed around openness and interoperability are required. Infrastructure providers should also understand the applicable laws and regulations to which the issuance and transfer of tokenised financial assets are subject to, as well as the regulatory treatment of products created under different tokenisation structures.

Limitations of Current Digital Asset Infrastructure
• Lack of Interoperability and Composability
• Nascency of Permissioned Open-Source Communities
• Fragmented Asset Pools
• Complexity in Supporting Multiple Technologies
• Differing Taxonomy and Standards
• Nascency of Privacy Options
• Lack of Scalability

Table 2: Limitations of current digital asset infrastructure

BIS' recent working paper articulating the vision of the "Finternet"[3] and the concept of Unified Ledger[4] reinforce the case for tokenisation and its applications such as cross-border payments and securities settlement. Open and interconnected financial ecosystems, if well managed, could improve access and efficiency of financial services through better integration of financial processes.

Despite good progress in asset tokenisation experimentations and pilots, the lack of suitable financial networks and technical infrastructures which financial institutions may use to execute digital asset transactions is limiting financial institutions' ability to deploy tokenised assets at commercial scale. Consequently, market participation and secondary trading opportunities in tokenised assets remain low relative to traditional markets.

The paragraphs below discuss two network models commonly adopted by financial institutions today as well as a third model which combines the openness of Model 1 with the safeguards introduced in Model 2.

Model 1: Public Permissionless[5]

At present, public permissionless blockchains have attracted large groups of applications and users as they are designed to be open and accessible to all parties. In essence they are similar to the internet, whereby public networks are able to grow at an exponential rate because no approval is required before participating in the network. Consequently, the potential network effect[6] that public permissionless blockchains has is significant. By building on a shared and open infrastructure, developers may tap into existing capabilities without having to rebuild similar infrastructure themselves.

Public permissionless networks were not originally designed with regulated activities in mind. They are autonomous and decentralised by nature. There is no legal entity that is responsible for these networks, no enforceable service level agreements (SLAs) on performance and resiliency (including cyber risk mitigation), and there is a lack of certainty and guarantees around processing of transactions.

[3] Carstens & Nilekani (2024) propose the concept of the "Finternet" as a vision for the future financial system: multiple financial ecosystems interconnected with each other – much like the internet.
[4] A unified ledger is referred to as a new type of financial market infrastructure that could capture the full benefits of tokenisation by combining central bank money, tokenised deposits and tokenised assets on a programmable platform (BIS, 2023).
[5] The term "Public" here refers to the openness of a platform to participation by any entity (MAS, 2023).
[6] Metcalfe's law states the value of a network is proportional to the square of the number of members in the network (Metcalfe, 2013).

The absence of clear accountability, anonymity of service providers and lack of service level agreements in these networks make them unsuitable for use by regulated financial institutions without additional safeguards and controls. Legal considerations and general guidelines on the usage of such blockchains also remain uncertain. These pose difficulties for regulated financial institutions to use them.

Model 2: Private Permissioned

Some financial institutions have determined that existing public permissionless blockchains today do not meet their requirements. Consequently, numerous financial institutions have elected to set up independent private permissioned networks with their own ecosystems.

These private permissioned networks include technical features that enable rules, procedures and smart contracts consistent with applicable legal and regulatory frameworks to be operationalised. They are also designed to ensure the resiliency of the network against malicious behaviours.

However, the proliferation of private and permissioned networks that are not interoperable with each other could lead to greater fragmentation of liquidity in the wholesale funding markets in the long run. If unaddressed, fragmentation would reduce the network benefits of financial markets and could create frictions for market participants such as inaccessibility, increased liquidity requirements due to separation of liquidity pools, and pricing arbitrage across networks.

Model 3: Public Permissioned

Public permissioned networks are open for participation by any entity that fulfils the criteria for participation, but the type of activities that participants may conduct on the network are restricted. A public permissioned network that is operated by financial institutions for the financial services industry could enable the realisation of benefits of open and accessible networks while minimising the risks and concerns.

Such a network would be built on similar principles of openness and accessibility as the public internet, but with built-in safeguards for its use as a network for value exchange. For example, the network's governing rule may restrict membership to regulated financial institutions only. Transactions may be complemented by privacy enhancing technologies such as zero knowledge proofs and homomorphic encryption. While public and permissioned networks as a concept is not new, there is no precedent of such networks offered by regulated financial institutions at scale.

The GL1 initiative would explore and consider the various network models, including the concept of public permissioned infrastructures in the context of relevant regulatory requirements. For example, regulated financial institutions may operate GL1's nodes and GL1 platform participants would be subject to Know Your Customer (KYC) checks. The subsequent sections describe how GL1 could be operationalised in practice.

3 Global Layer One (GL1)

The GL1 initiative aims to foster the development of a shared layer infrastructure for hosting tokenised financial assets and financial applications along the financial value chain.

GL1's infrastructure would be asset agnostic; it would support tokenised assets and tokenised money issued by network users (e.g. regulated financial institutions) from various jurisdictions in different currency denominations. This could streamline processing, support automated instantaneous cross-border fund transfers, and facilitate simultaneous Foreign Exchange (FX) swap and securities settlement based on fulfilment of predefined conditions.

The infrastructure would be developed by financial institutions for the financial services industry and would serve as a platform that provides for (i) cross-application synchronisation, (ii) composability, (iii) privacy, and (iv) innate application compatibility with assets already tokenised and/or issued onto the infrastructure.

GL1 operating companies would serve as technology vendors and common infrastructure providers operating across markets and jurisdictions. To foster the development of an ecosystem of solutions, GL1 would also support regulated financial institutions to build, operate and deploy applications on a common digital infrastructure covering:

- Trade lifecycle (primary issuance, trading, settlement, payments, collateral management, corporate actions, etc.)

- Different asset type issuances and transactions (e.g., cash, securities, alternative assets)

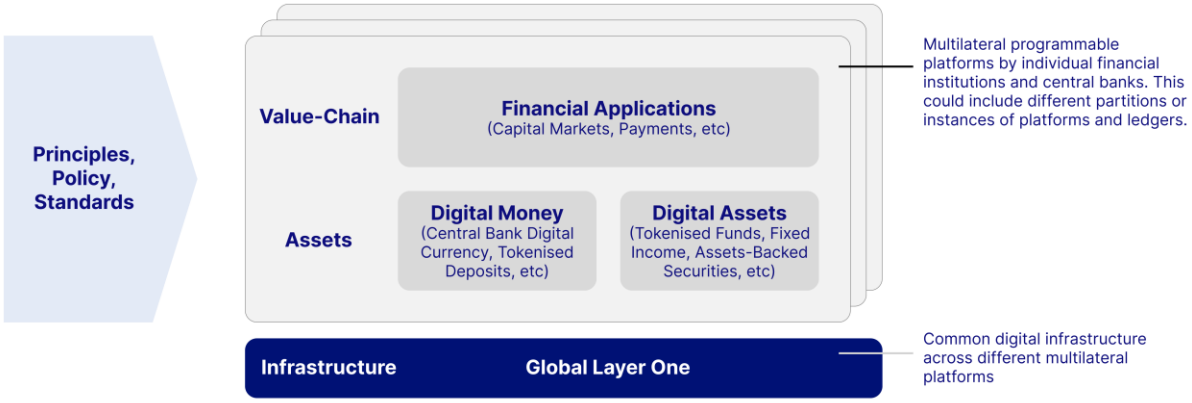

Figure 1: Reference model of GL1

3.1 Key Objectives

To achieve the vision of creating more efficient clearing and settlement solutions across the financial services industry, and unlock new business models through programmability and composability features, GL1 initiative would focus on:

a) Supporting the creation of multi-purpose networks.

b) Enabling applications ranging from payments, capital raising to secondary trading to be deployed.

c) Providing a foundational infrastructure for hosting and executing transactions involving tokenised assets which are digital representations of value or rights that may be transferred and stored electronically. Tokenised assets may be assets across asset classes such as equities, fixed income, fund shares, etc.) or monies (e.g. commercial bank money, central bank money).

d) Encouraging the development and establishment of internationally accepted common principles, policies and standards to ensure that the tokenised assets and applications developed on and for GL1 are interoperable internationally and across networks.

3.2 Design Principles

To achieve GL1's objective of serving the needs of the financial industry, GL1's foundational digital infrastructure would be developed according to a set of principles such as:

- **Open and standards-based** – Technology specifications would be made public and open, and members would be able to build and deploy applications with ease. Industry standards and open-source protocols, for payment messages and tokens, may be used where appropriate. Where existing standards have not been developed or are inadequate, appropriate efforts would be made to ensure that designs are flexible and could be proposed or incorporated into future standards.

- **Compliant with applicable regulations and accessible to regulators** – GL1 platform would comply with applicable legal and regulatory requirements. Jurisdiction-specific policy controls should be developed at the applications layer and would not be natively built into GL1 platform. The legal and regulatory requirements that apply to a member or end-user may depend on an analysis of the commercial application, service and location of the member or end-user.

- **Well-governed** – Appropriate governance, operating arrangements, membership agreements and rules would be clear and transparent to ensure clear lines of responsibility and accountability.

- **Neutral** – To be designed to prevent concentration or aggregation of control within any single entity or group of related entities, and within geographical regions. Key operating decisions, including technology selection, would be proposed on (among other factors) technical merits, and evaluated by members.

- **Commercially fair** – Financial institutions should be able to compete fairly on the GL1 platform. A GL1 operating company will not undertake decisions that are intended to unfairly benefit a financial institution over other financial institutions.

- **Accessible, both functionally and economically** – Financial institutions that meet the membership criteria would be eligible to participate. Membership criteria, operating costs and fees would be designed to promote the integrity, stability and sustainability of the network.

- **Financially Self-Sustaining** – The GL1 platform may be operated as an industry utility. Revenues, consisting of subscription and transaction fees, would be used for operational costs and reinvestment (such as enhancements and technology research and development) to ensure the continued sustainability of GL1.

3.3 Architecture Overview

It is envisaged that the architecture of GL1 could be described as the base layer in a four-layered conceptual model for digital asset platforms. The four layered model was first introduced in Monetary Authority of Singapore (MAS) Project Guardian - Open and Interoperable Networks[7] paper and IMF's working paper, ASAP: A Conceptual Model for Digital Asset Platforms[8].

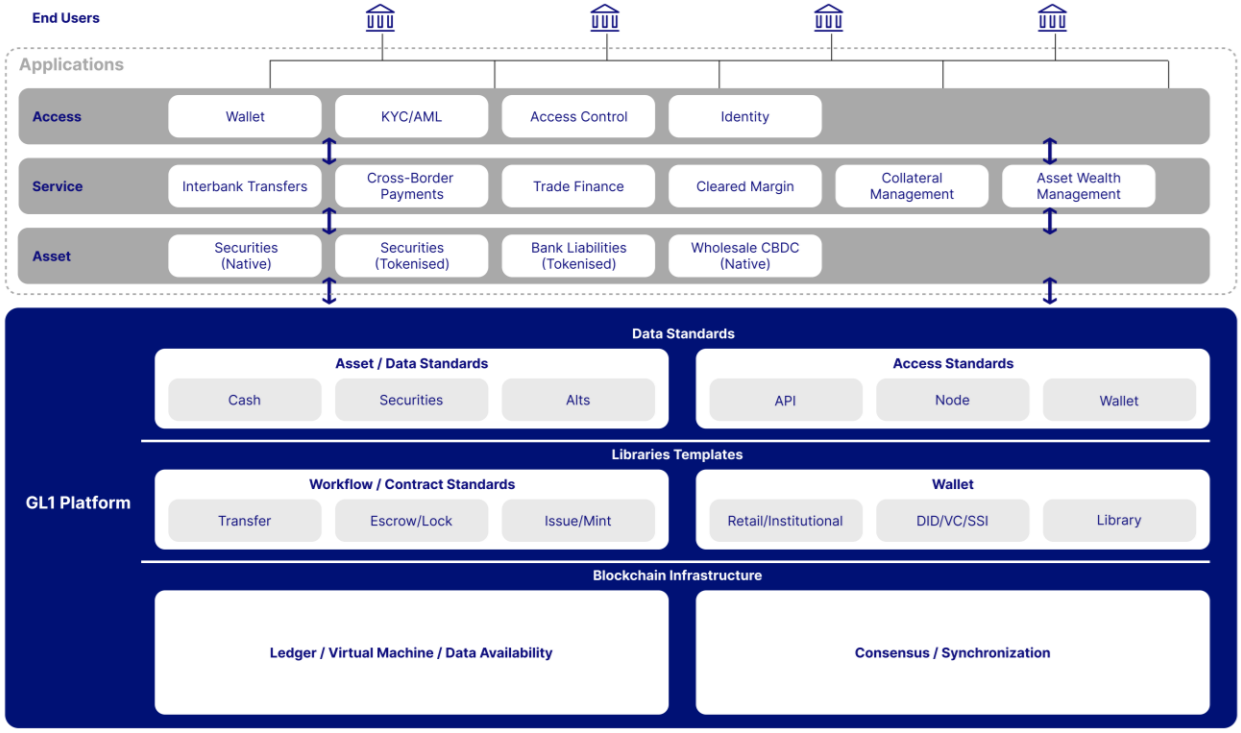

Figure 2: GL1 Architecture Overview

Whilst still under consideration, the intended interactions of GL1 with other component layers can be described as follows:

1. **Access Layer**
   The access layer refers to how end users would access the range of digital services built around the GL1 platform. Each service provider would be responsible for: a) providing their own wallet capabilities, aligned with the GL1 standards; b) performing KYC checks on their respective clients; c) onboarding, entitling, and offboarding their direct clients; and d) servicing their own clients.

   It is assumed that non-designated financial institutions would be able to access GL1's services, but they would be required to be onboarded through designated financial institutions first.

2. **Service Layer**

[7] The four-layered reference model that was jointly developed by staff from MAS and IMF depict the technology components of a digital asset network (MAS, 2023).
[8] ASAP (Access-Service-Asset-Platform) is a four-layered conceptual model for understanding digital asset platforms and promotes cross-platform interoperability (IMF, 2024).

Regulated financial institutions and trusted third parties who meet the participation criteria, should be able to build and deploy application services such as interbank transfers and collateral management on the GL1 platform. Participating financial institutions would be required to conform to GL1-defined settlement functionality standards for: Free of Payment (FoP), PvP, DvP and Delivery vs Delivery (DvD). Service providers would also be able to develop their own smart contract logic not included in the default software libraries provided by GL1.

3. **Asset Layer**
   The asset layer would support both native issuance of cash, securities, and other assets, as well as tokenisation of existing physical or analog assets. Supported asset types could include cash and cash equivalent, equities, fixed income, commodities, derivatives, alternative assets, fund shares, letters of credit, bills of exchange, asset-referenced tokens, and other tokens.

   Assets on GL1 would be deployed in the form of tokens, and they should be designed to be technologically interoperable across multiple GL1 applications and service providers.

4. **Platform Layer (Global Layer One)**
   GL1 would provide the infrastructure components for the platform layer, which is envisioned to encompass the blockchain infrastructure that includes the ledger and consensus mechanism, libraries and templates, data standards, and platform-wide services. The infrastructure used for record keeping would be distinct from the application layers, ensuring that assets on the GL1 platform are compatible with multiple applications, even if offered by different institutions.

   The GL1 platform would include a standardised protocol for consensus and synchronisation mechanism, which would enable asset transfer and cross-app communication. The platform would also ensure privacy, permissioning, and data segregation from other applications and participants.

   Under GL1, entities who serve as validators and ensure the integrity of the transactions that are recorded would be required to adhere to the financial sector's technology risk management controls, including business continuity plans and cybersecurity protection procedures. For their effort, the validators may be remunerated either up front in terms of transaction fees or on a deferred recurring basis based on subscription fees.

   To ensure compatibility with other layers in the stack, the GL1 platform would comply with a set of defined data and operating standards (asset, token, wallet, etc) and include core functionality, common libraries and business logic (access, smart contracts, workflows) that could be leveraged as an optional 'starter kit'.

4 Potential Uses of GL1

GL1 would be designed to support multiple types of use cases and is asset agnostic. It would support all regulated financial assets, tokenised central bank money and commercial bank money on a shared ledger infrastructure. Participating central banks may also issue central bank digital currency (CBDC) as a common settlement asset.

In the case of GL1, any financial institution, which meets the minimal suitability criteria and passes the due diligence process, may participate and use GL1 services without approval from a central governing body. However, only permissioned parties would be able to build and deploy commercial applications on the GL1 platform, adhering to the GL1 data and security standards. The admissible activities performed by financial institutions would be proportional to their risk profiles and ability to mitigate associated risks.

The initial use cases identified include cross border payments and cross-border distribution and settlement of capital market instruments on digital asset networks. Table 3 provides examples of where GL1 may potentially be used.

The examples included in this paper are meant to be illustrative and should not be regarded as a formal opinion that applies to all usage of the GL1 platform.

Domestic and Cross-Border Payments	Support domestic and cross-border payments for wholesale use cases, including FX
Securities Settlement	Support clearing and settlement of securities and other financial instruments that are both natively issued and tokenised via traditional infrastructures
Primary Issuance	Support issuance of securities and other financial instruments in the origination and structuring process
Collateral and Liquidity Management	Support collateral management use cases enabling free movement of assets on a global basis, 24x7. Applications include: • Repurchasing agreement (Repo)/Securities Financing: Support core securities financing transactions, including cleared and uncleared bilateral and triparty repo activity • Margin Optimisation: Support real-time movement of cash and securities to enable more margin efficiencies and optimization
Trade Finance	Support trade finance and letters of credits use cases, driving automation of manual processes and money movements

Table 3: Examples where GL1 may be used

Value Proposition of GL1

By bringing digital asset applications and regulated financial institution participants onto a shared ledger infrastructure, it is envisioned that the financial industry would be able to realise the benefits of digital assets and potentially significantly accelerate the modernisation of legacy market infrastructure. Table 4 describes some of the potential value proposition of GL1.

Interoperability & Composability	GL1 could enable assets to be technologically fungible across applications by establishing data standards (e.g., asset and token definitions, access standards) and libraries (e.g., workflows, wallets, and smart contracts), relying on a common ledger (with necessary partitions created via data permissioning).
Cost Reduction	By reducing the need to integrate with and maintain different tech stacks and standards, GL1 could also reduce the need for data transformation and reconciliation and replace manual process with standardisation-enabled automation (e.g., smart contracts).
Increased Asset Liquidity	GL1 could provide the technical foundation required to transfer assets across applications and jurisdictions - within predetermined limitations - unblocking current pockets of trapped assets.
New Business Models & Opportunities	GL1 could enable the formation of new business models, and services, including but not limited to self-executing smart contracts for cross-app automation and new structured products.
Risk Reduction	GL1 platform reduces operational risk, by providing financial institutions the option of engaging a named service provider, who could be held accountable for service outages, and with a definitive service level agreement.

Table 4: Value proposition of GL1

5 Operating Models

In practice, multiple financial applications and networks could be stood up using the GL1 platform. A financial network is defined here as a consortium of financial institutions who agrees to transact with each other using a common set of commercial arrangements and governance rules, which sets out the responsibility and obligations of each transacting party.

Financial networks could be organised around specific use cases. For example, a financial network may consist of applications focused on cross-border payment[9]. Meanwhile, other financial networks may focus on use cases such as cash and securities settlement[10].

Financial networks could also feature different types of tokenised assets. Some financial networks may focus on the use of wholesale CBDC[11] while others explore the use of central bank money and commercial bank money on a shared ledger[12]. Financial networks could also span multiple use cases and jurisdictions, for instance, MAS' Project Guardian Wholesale Network would include applications that support the exchange of foreign exchange, fixed income, asset and wealth management tokenised products.

While each of these financial networks is or would be governed independently, and has different characteristics, the potential to expand the reach of individual financial networks may be a strong motivation for them to select a common foundational infrastructure. By using the same shared ledger

[9] Partior is an interbank network which supports cross-border multi-currency payment based on DLT (Partior, 2023).
[10] Regulated Settlement Network (RSN) explores feasibility of shared ledger technology to settle tokenised commercial bank money, wholesale central bank money, U.S.Treasury securities and other tokenised assets. (SIFMA, 2024).
[11] Project Jura explored the direct transfer of wholesale CBDCs between French and Swiss commercial banks (BdF, BIS, & SNB, 2021).
[12] Regulated Liability Network explores the potential of a new global settlement infrastructure centered on regulated issuers and instruments (Kerigan et al., 2022).

infrastructure, tokenised assets could be transferred between different financial networks and new applications could be composed by building upon applications originating from multiple financial networks.

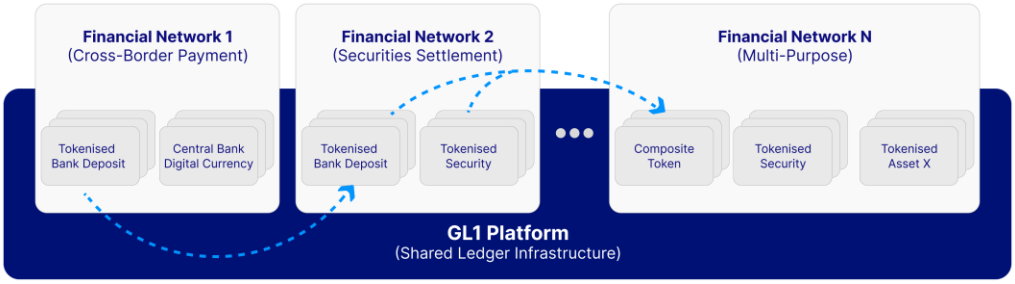

Figure 3: Illustrative diagram of multi-financial networks running on GL1

In instances where it may not be possible for financial institutions to transact on networks based on a shared ledger infrastructure, financial networks based on different ledger technologies could be interlinked instead. The merits and drawbacks for interlinking networks are covered in the MAS' Project Guardian - Interlinking Networks Technical Whitepaper[13]. Further considerations for scaling networks are covered extensively in Project Guardian's Enabling Open and Interoperable Networks paper.[14]

As a platform for regulated financial services, some activities on GL1 platform may be restricted and permissible only by designated service providers. The respective operators are expected to define the rulebooks and dictate the types of activities that are permissible. For instance, all participants may be able to initiate transactions but only designated financial institutions may be permitted to deploy smart contracts. Additional controls may be defined at the respective network and application levels, whereby access[15] to specific functions may be limited to selected parties who have gone through requisite screening or accreditation processes.

Settlement Arrangements

The GL1 platform could support Financial Market Infrastructure (FMI)[16] operators' role of providing clearing, settlement of payments, securities and other financial transactions. GL1 operating companies in standing up the GL1 platform may serve as a technology infrastructure provider to FMI operators.

FMIs may still play key roles in the value chain, however, there could be a potential reorganisation of the functions that are traditionally performed by a specific type of FMI or critical service providers (CSPs). For example, under current arrangements, the trade execution, clearing and settlement functions are performed by discrete systems, operated by different parties. When payment is made via a separate system, the ownership of the security is transferred and the records with a central security depository (CSD) are updated.

[13] MAS (2023b, Section 3, "Interlinked Network Model (INM)") discusses a reference model for exchanging digital assets and currencies seamlessly across different networks.
[14] MAS (2023a) provides a framework for designing open, interoperable networks for digital assets.
[15] Mechanisms such as address selection, partitioning through subnets or sidechains, and verifiable credentials may be employed to limit access to specific functions to selected parties (MAS, 2023a, Section 5.3, "Service Access").
[16] Financial market infrastructures include payment systems, central securities depositories, securities settlement systems, central counterparties and trade repositories (BIS & IOSCO, 2012)

With GL1, this coordination could be automated through the use of smart contracts. Under the new arrangements, both cash and securities transactions would be hosted and executed on the same shared ledger infrastructure. This means that cash and securities could be exchanged simultaneously, whereby either both cash and securities legs of a transaction would succeed, or both would fail. This arrangement would minimise the system impact if or when a counterparty defaults.

Settlement Finality

A key GL1 design requirement would be the ability for the platform to support settlement finality, whereby it would be possible to clearly define when settlement becomes irrevocable and unconditional. This is non-trivial in distributed networks, where there are multiple validating nodes which would validate transactions and update records simultaneously. To ensure alignment between the operational stage of the ledger and when the transfers would be regarded to have settlement finality, the selection of the appropriate algorithm used to achieve consensus on ledger state would be an important design decision.

In the case of GL1, it is assumed that a deterministic consensus algorithm would be required to support settlement finality. For example, it would be possible for an FMI operator to define that settlement is considered final and irrevocable, once a predetermined number of validating nodes, operated by designated financial institutions, have achieved consensus on the state of the ledger. For completeness, FMI operators who utilise the GL1 platform should be aware of the applicable regulatory regimes that apply to settlement finality.

Organisation and Regulatory Oversight

By design, GL1 operating companies may operate across markets and jurisdictions where participating financial institutions operate. Depending on the specific arrangements between GL1 operating companies and participating financial institutions, and subject to commercial and legal analysis to be undertaken, GL1's infrastructure and its operating companies may be regarded as an FMI and/or a critical service provider in certain jurisdictions in which they may operate.

Operating companies and participating financial institutions would need to consider and manage potential risks factors. These include credit, liquidity risks as well as the operational risk, the impact of a loss or delay in accessing the GL1 platform and take appropriate measures to mitigate against the systemic impact of an outage. Environmental, social and governance risks would also need to be considered.

Depending on organisation form and settlement arrangements, financial institutions utilising the GL1 platform could also be subject to differing applicable licensing and regulatory requirements. Further commercial, legal and governance analysis would be required to determine the responsibility and accountability of GL1 operating companies in the context of settlement arrangements with FMI operators in participating jurisdictions.

In this regard, GL1 operating companies would work with relevant stakeholders (including oversight authorities) in the relevant jurisdiction(s) to ensure that the rule of law is preserved in respect of GL1's infrastructure.

6 Future Work

Since its inception in November 2023, MAS and participating financial institutions have been engaged in discourse and generation of insights and ideas in relation to the GL1 shared ledger infrastructure.

Among the themes discussed, the participating financial institutions have considered:

- Potential business use cases to be deployed on the GL1 platform such as domestic and cross-border payments, primary issuance of securities and other financial instruments, collateral management and securities settlement.

- Alignment on the governance model of GL1, where there is a need for distinct legal entities in the form of operating companies running GL1 and a non-profit organisation focused on governing principles, standards and best practices.

- Preliminary assessment of the policy, risk and legal considerations for providing services.

- Preliminary assessment and recommendation of applicable existing DLT technology, in consideration of potential business requirements, to develop GL1.

In the next phase[17], GL1 is taking a two-prong approach to foster its development. GL1 would explore the establishment of a non-profit organisation to develop common principles, policies and standards for operating GL1. This would complement the potential future establishment of independent operating companies that would build and deploy the GL1 infrastructure.

The development of the governance and operating model may include consideration of factors such as the type and distribution of members, the target operating model, expected operational costs, proposed fee structures, estimated revenues and break-even point for the entity to be cost-neutral. It may also expand on the preliminary assessment of potential solution options and technical design considerations for realising GL1.

It is expected that existing distributed ledger technologies would be used, with further potential enhancements undertaken to support GL1's specific needs.

[17] A participating financial institution's participation in the next phase of GL1 may be subject to its relevant internal and/or regulatory approvals.

7 Conclusion

GL1 is expected to be a multi-year initiative to establish the foundational digital infrastructure that could shape the future of financial networks. When this vision is realised, it could fundamentally transform an asset lifecycle and how capital markets are conducted. For this potential to be realised, it would require a scale of multilateral cooperations across jurisdictions from both the private and public sectors, that is unprecedented since the advent of the internet.

The power of bringing together a network of global banks, public sector authorities and international organisations is clear: The initiative welcomes contributions from the international community to advance the development of GL1 as a foundational digital infrastructure that support the transformation of the financial industry.

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9 Glossary of Terms

Central Counterparty (CCP) means a legal person that interposes itself between the counterparties to contracts traded on one or more financial markets, becoming the buyer for every seller and the seller for every buyer.

Central Securities Depository (CSD) means a legal person that operates a securities settlement system (settlement service), and which provides the initial recording of securities in a book-entry system (notary service) and/or provides and maintains securities accounts at the top tier level (central maintenance service).

Custody refers to the service of safekeeping and administration of financial instruments for the account of clients, including custodian and related services such as cash/collateral management.

Delivery-versus-Delivery (DvD) is a securities settlement mechanism that links two securities transfers in such a way as to ensure that delivery of one security occurs if and only if the corresponding delivery of the other security occurs.

Delivery-versus-Payment (DvP) is a securities settlement mechanism which links a transfer of securities with a transfer of cash in such a way that the delivery of securities occurs if, and only if, the corresponding transfer of cash occurs and vice versa.

Digital Assets are any digital representation of value or rights which may be registered, issued, transferred, stored electronically using DLT.

Distributed Ledger Technology (DLT) refers to the protocols and supporting infrastructure that allow computers in different locations to propose and validate transactions and update records in a synchronised manner across a network.

Financial Market Infrastructure (FMI) is a multilateral system among participating institutions, including the operator of the system, used for the purposes of clearing, settling or recording payments, securities, derivatives or other financial transactions. Typical examples include: Central Security Depository (CSD), Central Clearing Party (CCP), Securities Settlement System (SSS), Trade Repository (TR).

Financial Networks refer to business networks made up of a consortium of financial institutions that agrees to transact with each other based on a common set of commercial arrangements and governance rules.

Free-of-Payment (FoP) is a transfer of securities without a corresponding transfer of funds.

Global Layer One (GL1) refers to the initiative to establish a foundational digital infrastructure for tokenised assets.

GL1 Platform refers to the shared ledger infrastructure provisioned by GL1 Operating Companies for hosting and executing tokenised financial assets and transactions.

GL1 Operating Company refers to the industry utility that would be operated by a consortium of financial institutions for the financial industry.

Securities Settlement System means a formal arrangement between a plurality of participants whose activity consists of the execution of transfer orders.

Security Token means a security which is issued, recorded, transferred, and stored using a DLT.

Settlement refers to the completion of a securities transaction where it is concluded with the aim of discharging the obligations of the parties to that transaction through the transfer of cash or securities, or both.

Smart Contracts means a computer program deployed on a distributed ledger in which some or all of the contractual obligations are recorded, replicated or performed automatically.

Payment-versus-Payment (PvP) refers to the settlement mechanism that ensures that the final transfer of a payment in one currency occurs if and only if the final transfer of a payment in another currency takes place.

Validators refer to nodes on a distributed ledger or blockchain network that are responsible for verifying transactions on the network.

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