



GATENET WHITEPAPER





Vision

GATENet¹ has a vision to build:

“on-chain financial market, settlement and registry solutions to reduce costs and increase efficiencies for all issuers, investors and market participants everywhere.”

We foresee all settlement and registry activities will eventually be replaced by protocol technologies.

Our vision, and therefore our strategy, aims to address some of the excessive costs and crucial inefficiencies of today’s financial markets infrastructure (FMI) that affect all products, all issuers, investors, and market participants everywhere.

Our Digital FMI is designed to lower costs, eradicate fails, lower the cost of capital and reduce risk, with on-chain financial market, settlement and registry solutions via blockchain infrastructure, leading to greater efficiency, global investor pools, interoperability and greater price discovery.

We will seek to collaborate and embrace DeFi innovation to advance financial markets for a wide scope of issuers and investors and act as a compliant gateway between CeFi (centralised finance) and DeFi (decentralized finance).

Collaboration

GATENet will collaborate with:

1. Securities exchanges²;
2. Registrars, custodians and CSDs; and
3. Protocol vendors³.

Collaboration with securities exchanges will achieve a value proposition organised around 3 pillars:

1. Competitive costs and fee structures;
2. Improved price formation and liquidity discovery; and
3. Exponentially enhanced risk mitigation.

Adoption of digital assets is greater today than it has ever been; DeFi has moved quickly to open up new innovations that we will seek to leverage and combine with our regulatory expertise.

¹ GATENet is a GSX Group initiative

² Including GSX exchanges

³ Including STACS Protocol



IMPORTANT

FORWARD LOOKING STATEMENTS

This Whitepaper consists of mostly forward looking statements. Their outcome is not guaranteed. They reflect GATENet's current views and vision that will have an impact on GATE token utility. All forward looking statements address matters that involve significant risks and uncertainties and actual achievements may well differ materially from those indicated in this Whitepaper (refer to Risk Factors as per Appendix G of this Whitepaper). Any forward looking statements in this Whitepaper reflect GATENet's current views with respect to future events and are subject to these and other risks, uncertainties and assumptions relating to GATENet's operations, results of operations, growth strategy and liquidity. These forward looking statements speak only as at the date of this Whitepaper and GATENet assumes no obligation to update publicly or review any forward looking statement relating to any aspect of its business including but not limited to both its vision and any party that GATENet collaborates with.

GATE token holders should specifically and carefully consider that the forward looking statements in this Whitepaper are GATENet's views and vision only and that actual achievements may well differ before making a decision to hold (or otherwise) GATE tokens.

NOT A TOKEN SALE

This Whitepaper incorporates GATE tokens within the vision and respective forward looking statements. This is not a token sale, no subscriptions of any kind are being sought via this Whitepaper.

For the avoidance of doubt, this is not a token sale whitepaper nor is it an invitation, solicitation, or recommendation to buy, sell and/or hold GATE tokens.

GATE TOKEN IS A UTILITY TOKEN

GATE token is a utility token. Utility tokens grant holders access to a current or prospective product or service. Utility tokens derive their value from the demand for the issuer's service or product. Utility tokens pose a number of substantial risks to potential holders, and holders may experience unexpected or large losses due to a variety of factors including but not limited to illiquidity, no returns in the form of dividends, material risk of failure, 'dilution' upon future issuance and fund raisings, and they give rise to no underlying rights of ownership in the issuer or the respective product or service for which they are issued. Unlike securities, utility tokens are typically unregulated and there is often limited information (often in the form of whitepapers) available on how the utility tokens work. Principally, utility tokens should only be considered to be held as part of a diversified portfolio of assets. Any questions or concerns should be addressed to your relevant legal, tax and/or financial advisor.

GATE TOKEN IS NOT REGULATED

No regulatory body has: (i) approved or disapproved this Whitepaper; or (ii) commented upon the accuracy or adequacy of this Whitepaper.

NO LEGAL, TAX OR FINANCIAL ADVICE

This Whitepaper does not include legal, tax and/or financial advice and accordingly, all persons should seek relevant professional independent advice in respect of any item set out in this Whitepaper as required.



Part A - Digital FMI

An Overview

The T+2 settlement model for securities and the current legacy financial markets infrastructure (Current Legacy FMI) is out-dated, complex and fragmented. The result is an expensive, inefficient, complex and disconnected market infrastructure leading to a high cost of capital and multiple points of failure.

In the Current Legacy FMI, costs and fee structures are too high; brokers and their clearing members are required to act as principal; failed trades are unacceptably high (accounting for up to 3% of the value of trades in corporate bonds and sovereign debt markets, and 6% in equities markets⁴); counterparty risk remains unresolved both within the system and outside trading hours; there is no guaranteed immutability which could create a difference between solvency and insolvency during a financial crisis; there is insufficient pan-jurisdictional interoperability between exchanges and Central Securities Depositories (CSDs).

GATENet, via the provision of its solutions, is seeking to address the excessive costs and crucial inefficiencies of the Current Legacy FMI by creating the Digital FMI, including on-chain settlement and registry solutions, for issuers, investors and market participants, for financial market products such as equities, debt securities, funds, and currencies.

Currently, the public capital markets industry incurs costs of US\$700+ billion per annum of which trade execution, clearing, settlement and custody is US\$300 billion⁵ which GATENet is seeking to deliver savings of 70% in its end-to-end smart securities exchange solution using the Digital FMI.

Our unique model of its trading, settlement, depository and access infrastructure is designed to deliver ground-breaking improvements and cost savings to the financial markets landscape.

Our Digital FMI T-Instant model is designed to **eliminate** failed trades (“*when you trade you settle*”), credit, counterparty and replacement cost risks; **unlock** capital currently deposited with CCPs (Central Counterparties); **open** pan-jurisdictional liquidity pools; **reconnect** investors and issuers; and **remove** the hidden unaccounted risks of intermediary insolvency.

Current Legacy FMI - the Problem

The Current Legacy FMI is extremely fragmented and as a result it is complex and expensive to operate, with multiple points of friction and failure. Trades are conducted via direct or indirect access to at least **four FMIs, four types of intermediary, a range of information sources, networks and interfaces.**

Imagine how inefficient the airline industry would be, for example, if it operated using the principles of the Current Legacy FMI; passengers would have to *contract directly* with all service providers in the chain of operations (the airlines, the airports, customs and immigration, hospitality, etc) or if, when contracting indirectly via an intermediary, the passenger ultimately took *all the risk*.

The Current Legacy FMI structure summarised below illustrates how the financial markets industry has *automated manual processes and procedures.*

⁴ According to the European Securities and Markets Authority (ESMA)

⁵ Source: Accenture

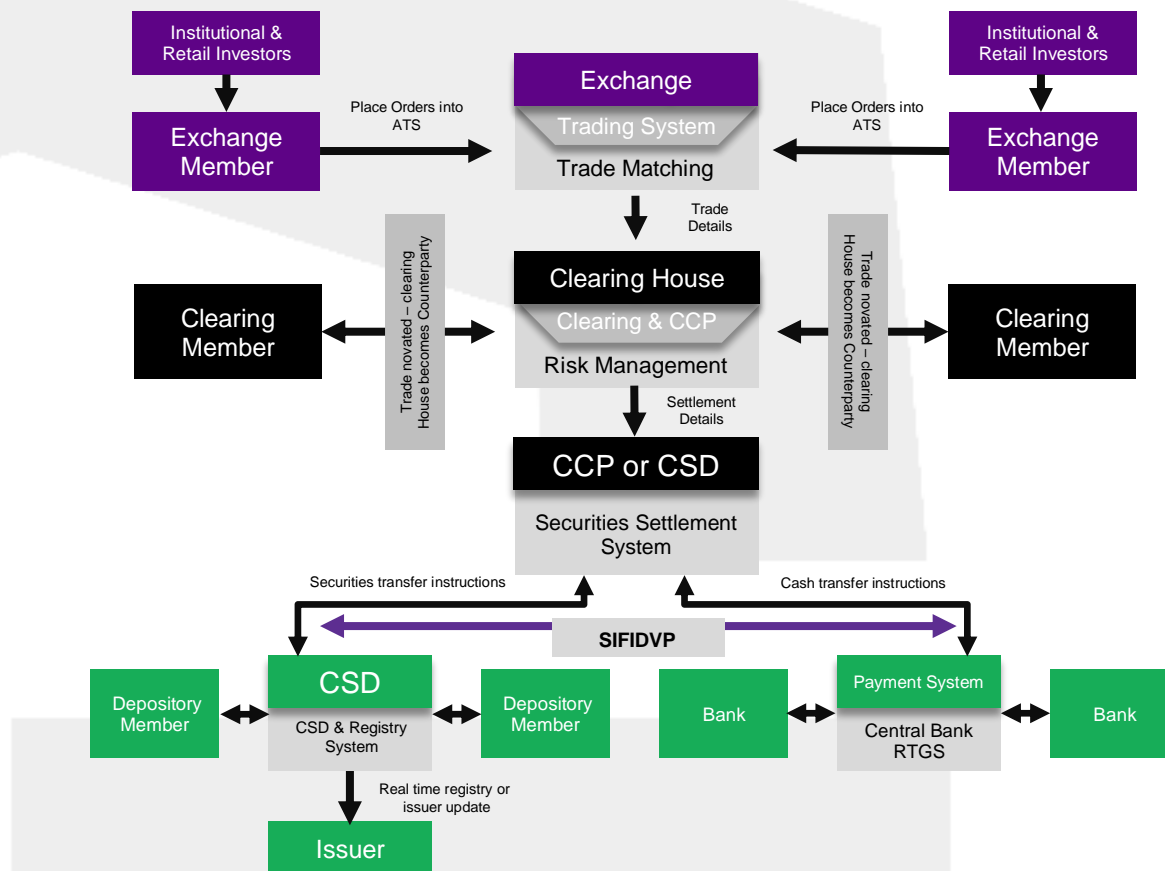


Figure 1: Current Legacy FMI with T + 2 Lifecycle

Current Legacy FMI - the Process Flow

- A buyer of a security places a buy order with a broker or market maker. The intermediary ensures funds are in place (or exceptionally offers credit) and the buy order is placed on an exchange.
- A seller of a security places a sell order with a broker. The broker ensures the securities are in its custody, and the sell order is placed on an exchange. If the seller wishes to short a security (sell a security not owned), a borrowing contract is arranged with a lender or intermediary. The current securities borrowing and lending (SBL) business is manual and relatively inefficient and for the most part, does not take advantage of multilateral price formation and liquidity discovery tools. Consequently, only 17.5% of global lendable assets are actually lent according to the ISLA (International Securities Lending Association), leaving almost US\$20 trillion of assets available for lending. Other segments of the market are also excluded – for example, a retail owner of shares does not have access to being able to lend their shares should they wish to.
- Once executed, a trade is reported to a CCP who manages risk between the trade date (T) and settlement date (S). The CCP requires clearing members to act as principal on behalf of the seller and their broking intermediary and to lodge their own capital to cover the settlement risk.



- The CCP also becomes principal to the trade, to maximise the possibility that the trade will settle, even in the event that the buyer does not deliver the funds and the seller does not deliver the securities. However, it is by no means certain that settlement will be achieved on the intended settlement date, raising costs and opportunity costs, and potentially excluding the buyer from benefiting from rights of share ownership, including voting at a general meeting (for example).
- Brokers and their clearing members are also required to act as principal. The clearing members are obliged to post capital syndicating the cost of settlement failure but it really does not work the way it should. Currently, large investment banks each have to deal with up to 10,000 failed trades every day with failed trades (accounting for up to 3% of the value of trades in corporate bonds and sovereign debt markets and 6% in equities markets). *Imagine* what would happen if car brakes only worked 94% of the time! Markets need to be as safe as other systemically important infrastructures.
- The CCP then interacts with the CSD, a specialist FMI organisation holding securities in certificated (immobilised) or uncertificated (dematerialised) form so that ownership can be easily transferred through book entry. The CSD allows participants in the market to hold their securities at one location where they can be available for clearing and settlement on a fungible electronic basis.
- The CSD has an obligation to maintain the integrity of an issue, but only at an upper tier level. The register of securities holders is not reconciled on an end to end basis through lower tier accounts. This means securities can be lost or synthetically created in lower tiers.
- Meanwhile, the banking system becomes engaged with the process to ensure fiat settles efficiently using central bank money. This requires the use of a national Central Bank's Real Time Gross Settlement (RTGS) system, or in the EU a settlement system called Target 2 which most of the Banks, European CSD's and many central banks are members of.
- **Two days later** (fails permitting) the securities will be registered in the name of the buyer or their omnibus intermediary and the seller will receive funds. In the event of a fail, settlement may take another 10 days or in fact never settle, despite an intermediary acting as principal, and thereby denying the buying investor of their contractual rights. The process is not sufficiently reliable and hence the creation of the concept of "*riskless principal*".
- The exchange reports the trades to the regulator as do the exchange members for triangulation. Generally, these trades must be reported within 10 minutes of the trade taking place.

Current Legacy FMI - the Inefficiencies

- The contract concluded between buyer and seller may **never be honoured**. It is a basic flaw.
- The Current Legacy FMI model is **fragmented, inefficient, open to malpractice** and **expensive**. Price formation and liquidity discovery can still be improved and there is a lot of room for improvement in the post-trade process.
- Counterparty risk remains **unresolved** both within the system and outside trading hours.
- T + 2 (**two day**) settlement model is **out-dated** as it **cannot deliver settlement certainty**. No amount of further electronification of this model can achieve the efficiencies we are proposing.
- Sell-side members **lock-up their own capital** (as principal) to support their clients with CCPs requiring higher risk weighted assets (even though the clients have deposited assets in whole or



collateral with the members). In the event of a financial crisis, the taxpayer remains the capital provider of last resort.

- CCPs **do not guarantee settlement** and when using the default waterfall, the solvency queue is neither transparent nor obligated to achieve fairness.
- **Costs and fee structures are high** (end investors pay as much as 15 bps (basis points) for securities transactions and between 3 and 5 bps for custody).
- Middle and back office **headcount is expensive**.
- There is **no end to end reconciliation** across the industry.
- SBL is currently an **expensive relatively manual process**, is not universal, and operates as a post-trade/middle office function.
- There is **no guaranteed immutability** which could create a difference between solvency and insolvency during a financial crisis.
- There is **insufficient pan-jurisdictional interoperability** between exchanges and CSDs.
- Multiple **failed trades** lead to real replacement cost risks and investor relations issues, at present, in Europe, failed trades account for up to 3% of the value of trades in corporate bonds and sovereign debt markets, and 6% in equities markets, according to ESMA.
- Public capital markets have not only **failed to grow** their capital issuance base since the 2008 financial crisis, but they continue to **fail to lower the cost and access to capital** for private companies.

Digital FMI - the Solution

We believe that we have assembled the best in class components of the current financial market infrastructure, to design our Digital FMI for financial markets.

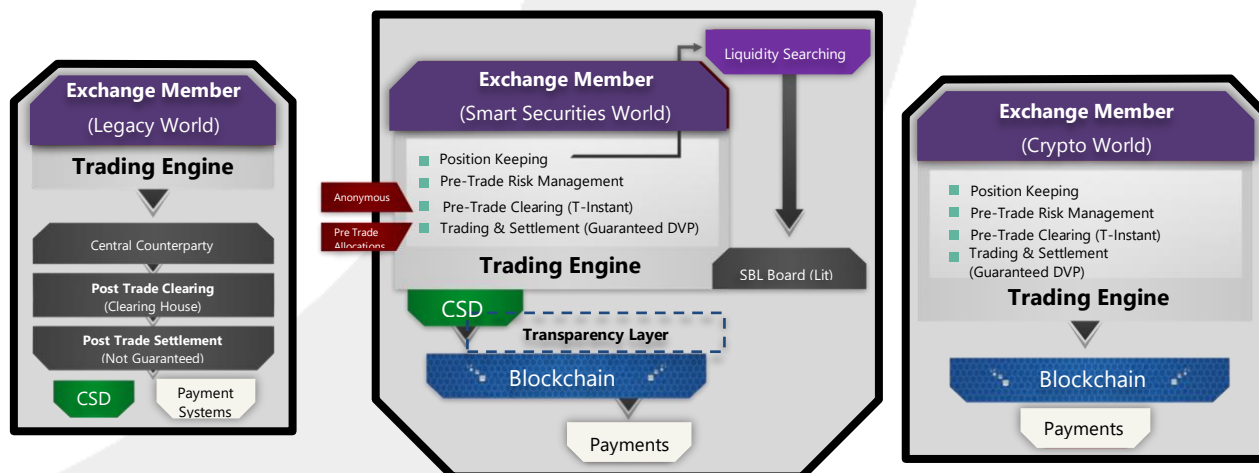


Figure 2: Digital FMI with T-Instant Solution



Our Digital FMI model covers tokenising **existing** securities (including securities admitted to traditional securities exchanges which we will wrap and admit to smart securities exchanges in the form of Tokenised Depositary Receipts (TDRs)) and **new** securities (issued in tokenised form). Our Digital FMI model also covers tokenised **currencies** (including fiat currency as tradable instruments and as a settlement currency), **swaps** and contracts for difference (**CFDs**).

Digital FMI - the Efficiencies

Our Digital FMI solution aims to:

- **Reduce** cost and complexity.
- **Increase** market efficiency.
- **Eliminate** failed trades.
- **T-Instant** delivery versus payment, a pre-funded model providing simultaneous, final, irrevocable, trading, delivery versus payment.
- **No counterparty risk**, settlement finality at the time of a trade ("*when you trade you settle*").
- Simultaneously **unlock capital and overheads** from the post-trade processes by **eliminating counterparty risk**, rather than just managing it.
- **Eliminate compliance risks** of manual processes, data duplication and human bias which are prone to error and operational risk.
- **Empower end investors** to have the maximum direct market access/sponsored access capabilities.
- **Open up pan-jurisdictional** liquidity pools and price discovery.
- Provide facilities for both **public and private markets**.



Part B - DeFi

With the advent of DeFi and its respective innovation, the traditional world of financial markets is due to change. Current financial markets have high costs, multiple barriers to entry, and have low to no interoperability. While as yet largely legally untested, the nascent technology and development of DeFi has the potential to disintermediate traditional financial markets and institutions. The term DeFi describes projects that harness digital currencies and their underlying blockchain technology to enable peer-to-peer distribution of financial products and services, and the implications of this are profound.

The transformative potential of blockchain technology used by DeFi is far-reaching given that centralisation has to-date been a dominant driver of the development of the financial services industry. For example, shares that are traded on a centralised stock exchange have a centralisation of aggregate demand and supply, allowing for more efficient price discovery and market efficiency, this is no longer the case with the advent of DeFi using blockchain technology.

Bitcoin (the first cryptocurrency breakthrough), was followed by Ethereum (a decentralised network with a digital currency), is now followed by the third wave, DeFi, decentralized enterprises that generate an autonomous financial infrastructure free of the established layers of cost, complexity and inefficiency that figure in current financial markets infrastructure. DeFi is all about efficiency and disintermediation, and is an emerging system where income flows to token holders and where token holders agree to and submit proposals to their enterprises in the digital domain outside of traditional financial markets.

Over the decades, laws and regulations governing many aspects of financial services and financial markets have taken centralisation, or some form of gatekeeper approach, as a given. We are of the view that a radical shift in the distribution structure brought about by DeFi will necessitate a rethinking of how financial products and services are regulated, and that in the meantime, existing laws and regulations will continue to apply, but this will present stakeholders with a series of interesting challenges. We will aim to provide leadership in bridging these challenges.

DeFi has the potential to be the dawn of a new era and create a seismic shift in the way financial markets operate, from centralised to decentralised. We will seek to partner and collaborate with DeFi innovators and embrace DeFi innovation to advance financial markets for a wide scope of issuers and investors. GATENet will seek to act as a compliance gateway between CeFI and DeFi.



Part C - Markets and Market Operation

Public Markets

GATENet will collaborate with securities exchanges, including GSX operated exchanges, to achieve value proposition organised around 3 pillars:

1. Competitive costs and fee structures;
2. Improved price formation and liquidity discovery; and
3. Exponentially enhanced risk mitigation.

These features are described below.

Competitive costs and fee structures, currently, the public capital markets industry incurs costs of US\$700+ billion per annum of which trade execution, clearing, settlement and custody is US\$300 billion which GATENet is seeking to deliver savings of 70% in its end-to-end smart securities exchange solution using the Digital FMI.

Improved price formation and liquidity discovery of public markets, such markets operated by national exchanges and MTFs are already highly efficient. In the search for excellence there is always an opportunity for innovation. GSX operated exchanges will seek to add a range of market boards and instruments to improve price formation and liquidity discovery, for example: securities and currency lending (supply) may be added algorithmically to the SBL/CBL market places, to light up supply and be available on a just-in-time basis to short sellers in the regular lit and dark boards. GSX operated exchanges will also seek to introduce the first exchange traded tokenised public securities (TDRs), TSTs (Tokenised Swap Tokens) and CFDTs (Contract for Difference Tokens). A CFDT allows a bilateral relationship between brokers and their clients, whereby brokers can extend liquidity from other markets, which would otherwise not be available by providing contractual liquidity between brokers and their clients. A Tokenised Swap Token (TST) is a swap of a Tokenised Depository Receipt (TDR) for a Contract for Difference Token (CFDT). The holder is not an investor in the underlying issuer but gets the exposure to the securities' performance. The TST holder only receives/pay corporate actions in the form of cash (Tokenised Currency Receipts or TCRs). TSTs can be used to obtain a securities' performance and also as a hedging tool, on exchanges or potentially within DeFi platforms. Prime brokers on smart securities exchanges could offer leveraged versions of both CFDTs and TSTs.

Risk mitigation, during trading hours, securities and currency positions will be managed inside trading engines on exchange. This confines the terms counterparty risk and replacement cost risk to the archives. Our Digital FMI model seeks to uniquely deliver irrevocable and unconditional settlement finality, simultaneous with trading, even when shorting. Our Digital FMI T-Instant settlement model, means that if you have traded you have settled without compromising the integrity of settlement when shorting. In addition, given how tokenisation is structured on exchange, market risk can be eliminated outside trading hours.

Private Markets

Given the costly barriers to public markets, IPOs have seen a sharp decline (70%⁶) over the last 20 years and private capital has exploded as a result. The growth rate of private markets versus public markets has doubled as has the total capital raised in private markets versus public markets. Although there is

⁶ Source: CFA Institute



over US\$6.5 trillion in private assets under management, sellers are widely understood to accept a discount when selling illiquid private assets of as much as 20 – 30%. GSX operated exchanges will seek to provide a private market with the benefits of listed market ideologies and will seek to offer an efficient, low cost digital exchange and custody business model, creating increased value. The results (including shareholder registry, corporate documents) would be embedded immutably on the blockchain.

Market Enhancements - Target Operating Models (TOM)

The GSX Group has produced the GSX Model comprising of two target operating models; one for CSDs (for GATENet); and another for smart securities exchanges (for GSX). The target operating model designs incorporate financial market enhancements in order to offer:

- New improved **price formation and liquidity discovery models** e.g. shorting sweeps automatically to a lit SBL board that rewards volume, and other models.
- **Lighting up lendable securities** to narrow spreads and increase availability directly to the point of demand (i.e. order entry of a short sell). Today, SBL is positioned incorrectly as a post-trade service remote from the short sell point of execution. By contrast, the GSX workflow is “*just-in-time*”, and the model closes the gap between the available to lend and “*on-loan*”, and at the same time improves loan risk management.
- Trading risk management through a newly created exchange traded CFDT and tokenised swaps to compliment the SBL board and reduce the risk of buy-in exposure on existing markets (these are used to hedge price risk on legacy markets where there are fails), with a conservative approach to leverage - 100% asset backed in lit/dark books.
- Capital efficiency through T-Instant settlement. This has profound benefits, lowering capital requirements, removing the principal capital requirement costs, removing fails completely (which also locks up capital), eliminating many back-office functions, saving manpower and capital. GSX operated exchanges will offer absolute certainty of positions and collateral on insolvency of a broker.

The GSX Model two target operating models are covered in more detail in two Appendices to this Whitepaper:

- Appendix D: GATENet - CSD Target Operating Model (TOM) Overview
- Appendix E: GSX - ATS Target Operating Model (TOM) Overview



Part D – GATENet

An Overview

GATENet will:

- Collaborate to develop financial market infrastructure to deliver T-Instant settlement;
- Act as a compliance gateway between CeFI and DeFi;
- Set and charge fees for using GATENet's solutions, including settlement and registry fees;
- Convert fees received in fiat into GATE tokens;
- Set staking rewards;
- Set burn rates; and
- Adopt a governance framework enabling GATE token holders to make decisions.

Blockchain Technology

Blockchain creates a perpetual and immutable record of confidential information and execution of contracts (both smart and conventional). Therefore, any asset or record (contract, event, other) which is tokenised, will exist in a digital immutable form from the moment of data capture. However, blockchain in regulated markets is still a nascent technology and therefore GATENet has defined a series of phases during which the blockchain is operated in a parallel run with legal records existing in conventional Automated Trading Systems (ATS) and CSD technologies but with real time reconciliations. During this parallel run, it is intended that any inconsistencies will be resolved and research and development will continue, as we believe that true immutability can only be achieved when the DLT is the original source of truth.

GATENet will collaborate with protocol vendors to best help it meet its objectives of providing technology solutions for financial markets and on-chain CSD solutions for issuers, brokers and digital securities exchanges.

During 2019, the GSX Group acquired the STACS Protocol, a hybrid structure of permissioned/global blockchain technology, tailored for the finance industry, from Hashstacs Pte Ltd, a Singapore technology company. GATENet will organise, consolidate, integrate and use different technology. GATENet will use the STACS Protocol, including applicable applications, in relation to the delivery of its services but will also collaborate with other blockchain networks with specific regard to its aspirations to build a Digital FMI.

The blockchain technology and/or blockchain network that GATENet uses in the provision of its services could change over time and GATENet may interact with multiple blockchain networks, use multiple blockchains and/or multiple blockchain networks, including the STACS Protocol and decentralised open-sourced blockchain networks.



Part E - GATE Token

This Part describes the GATE token, the utility token which supports the functioning of GATENet.

History of the GATE Token

Rock Token (RKT) launched during January 2018 via the issuance of the GBX and Rock Token Whitepaper. The Rock Token project consisted of two key components; (i) to establish GBX, a marketplace for utility tokens and digital assets; and (ii) creating a financial services and fintech ecosystem with multiple products and services.

During November 2018 the GSX Group issued its STACS Technical Whitepaper setting out its vision for the development of the STACS Protocol, a proprietary hybrid structure of permissioned/global blockchain, tailored for the finance industry, developed by Hashstacs, a then GSX Group subsidiary company, incorporating GATE token utility including staking.

During November 2018, Rock Tokens were swapped for STACS Tokens with the purpose of preparing for the swap from an ERC-20 token to a STACS Protocol token when the STACS Protocol Mainnet was ready to go live. During February 2020, STACS Tokens were available to be swapped, as planned, from an ERC-20 to a STACS Protocol Mainnet token. The name of the token was changed to GATE (Global Asset Tokenised Ecosystem) to highlight the objective to build the core services that enable issuers to access new avenues of capital raising, while championing the benefits of blockchain adoption in traditional finance.

During January 2021 following feedback from our community, an ERC-20 GATE token was minted to replace the STACS Protocol Mainnet GATE token. The issuance of the ERC-20 GATE token addressed the community's preference to have a token that is issued on a decentralised blockchain network for ease and efficiency of interoperability for listing on multiple exchanges, that holders can self-custody, and that holders are able to control transmission via a public blockchain network. The ERC 20 GATE token replaced all previously issued tokens in entirety as the GSX Group's sole utility token via a 1:1 swap ratio.

Total GATE Token Supply

The total global supply of ERC-20 GATE tokens is 900 million.

Digital Securities Evolution

During 2018, although we achieved our original aim of launching a fully integrated licensed utility token sale platform and digital asset exchange, after a rapid price correction in markets, it was clear that markets had changed. In addition, the ICO market, previously a launch pad for innovative start-ups to get access to funding, effectively closed.

By 2019, the cryptocurrency exchange market reached its first stage of maturity with the top three cryptocurrency exchanges capturing in excess of 75% of market volume, aided by the fact that they remain largely unregulated and offer their users access to up to 100x leverage. In such a market, the GSX Group made the decision to sell GBX in order to focus its time and resources on building an interoperable global network of digital securities exchanges supported by on-chain CSD solutions to reduce costs and increase efficiencies, for a global pool of issuers, investors and market participants.



Go-live readiness is in process for the opening of our first digital security exchange in Labuan, Malaysia; the GSX Group has entered into a joint venture agreement in order to pursue a digital securities exchange license in the US. The joint venture partners include a US based multinational company operating businesses focusing on brand protection technology, blockchain security, direct marketing, healthcare, real estate, and securitized digital assets, and a Hong Kong based decentralized digital investment banking group and digital asset financial service firm; the GSX Group is at an advanced stage of discussions to commence applications for a further joint venture exchange elsewhere in Asia. In addition, we will seek to collaborate and embrace DeFi innovation to advance financial markets for a wide scope of issuers and investors and will seek to act as a gateway between CeFI and DeFi.

Fuelling our vision will be the GATE token, the GSX Group's utility token.

GATE Token Listing and Trading

The GSX Group will seek for GATE token to be admitted to various cryptocurrency exchanges and GSX operated exchanges, subject to relevant licensing and regulatory permissions.

GATE Token Utility

GATENet will use GATE tokens for:

1. GATENet fees
2. Staking
3. Burning
4. Governance

GATENet Fee Model

GATENet fees are payable to GATENet in fiat or GATE tokens. Fees will be set by GATENet, will vary over time, and will be published on gatenet.io.

All fees paid to GATENet will be split three ways between (1) stakers, (2) GATENet (in order for GATENet to maintain its services), and (3) burning. The split will be updated by GATENet from time to time and will be published on gatenet.io. Fees paid to GATENet in fiat will be used to purchase GATE tokens from the open market for staker awards and burning.

The split between stakers, GATENet and burning will be subject to the governance framework. An example of how the fees could be split is set out below:



Figure 3: Example split of GATENet fees



Staking

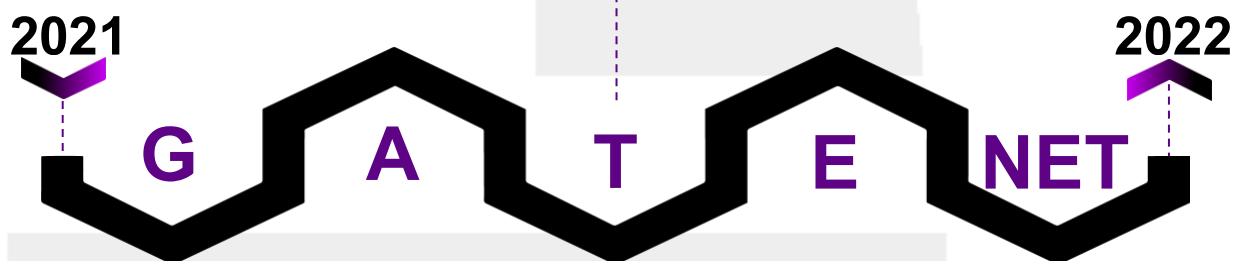
GATE tokens may be staked to earn staking rewards and participate in governance. Details will be provided on gatenet.io.

GATENet will transmit staking awards to stakers.



Part F - Timeline

- First GATENet partner exchange, GSX Labuan, to open
 - GATE token to be listed on exchange
 - GATE token loyalty rewards to commence
 - GATENet governance framework to be published
 - GATENet to engage protocol partners
 - GATENet to Implement stablecoin settlement solutions
- GATENet partner exchanges, in the US and elsewhere globally targeted to open
 - CSD collaboration
 - Ongoing on-chain settlement and registry solutions development





Part G - Authors

Nick Cowan, CEO

Nick is the co-founder of the Gibraltar Stock Exchange and founder of the GSX Group. Nick has over thirty-five (35) years' experience in capital markets working in Japan and London, including as Global Head of Trading and as Global Head of Equities at ING Barings.

Adrian Hogg, COO

Adrian is a regulatory and financial services expert with over twenty-five (25) years in the profession having overseen the establishment and licensing of three capital markets businesses including the Gibraltar Stock Exchange and GSX Labuan, and multiple licenses including, a DLT provider, e-money institutions, investment dealers, brokers, portfolio and asset managers and multiple funds from multiple jurisdictions. Adrian is a Fellow of the Institute of Chartered Accountants in England and Wales ('ICAEW'), was a Grant Thornton partner for ten (10) years (specialising in regulatory and financial services), and was formerly of KPMG and the Bank of East Asia.

Mikko Ohtamaa, Blockchain Advisor

Mikko has 10 years of experience in blockchain, twenty-five (25) years of experience in the software development industry. Over the past decade, he has been the CTO of a host of fintech companies. Mikko was a co-founder of TokenMarket – a blockchain fundraising platform that helped to raise over \$350 million for its clients. Mikko was also CTO of LocalBitcoins, a peer-to-peer cryptocurrency exchange. Mikko was early into Ethereum, being one of the first Solidity developers and auditors. Mikko holds an MSc. in Industrial Engineering and Management from the University of Oulu.

And a special thanks to various institutions, collaborators, members of the GSX Group team, and GSX Group/GATE Community Council who provided their invaluable comments and feedback.



Appendices

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Appendix B	GSX Operated Exchanges
Appendix C	Glossary for the GSX Model
Appendix D	GATENet - CSD Target Operating Model (TOM) Overview
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Appendix F	GATENet Fee Model
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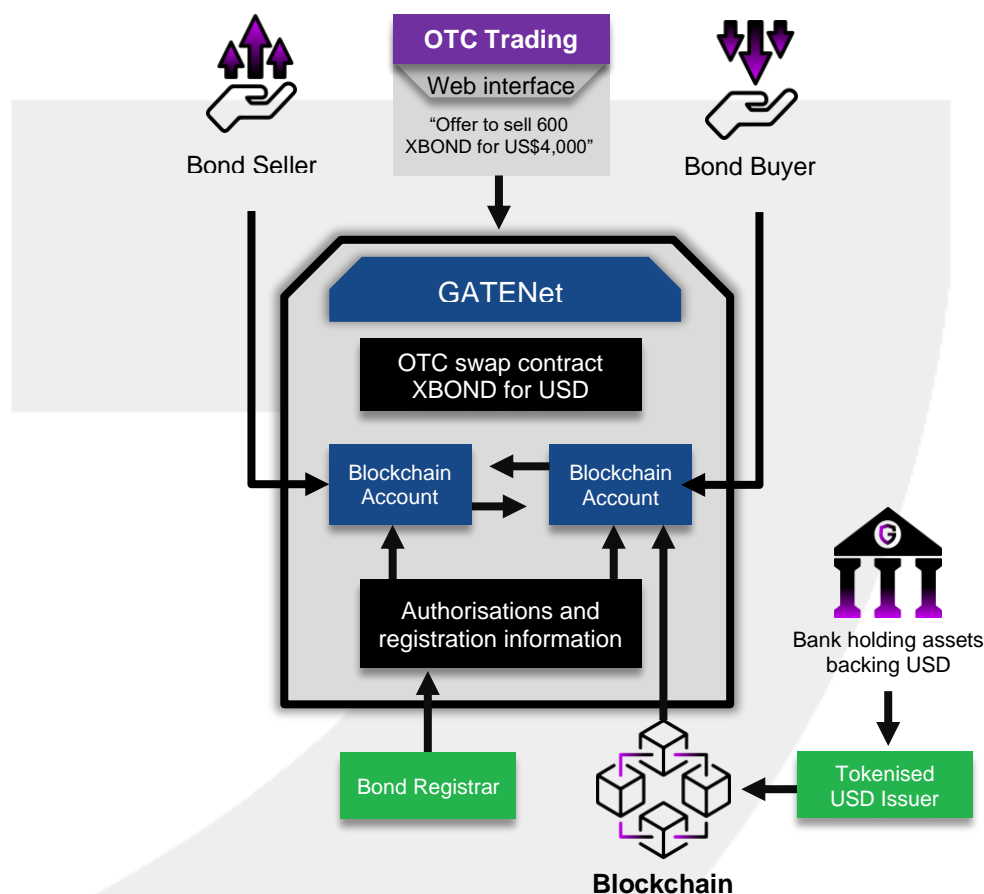
Appendix A - Use Cases

The following are a small selection of examples of how collaboration with securities exchanges can yield benefits using our financial market infrastructure solutions.

Example 1: Debt Securities

Currently debt securities generally trade OTC (into dark/closed markets) and settle on a T + 2 basis. GSX smart securities exchanges will offer two services; (1) tokenising **existing** debt securities, (2) issuing **new** debt securities in tokenised form.

Bringing debt securities on exchange for trading, not only streamlines processes for settlement and clearing (including harmonising settlement cross border), it also allows securities and cash settlement cycles to converge, offering investors all the benefits of reduced settlement risk, optimal use of their cash, and reductions in their credit line needs. Market participants benefit due to failed trades (currently 3% of the value of trades in corporate bonds and sovereign debt markets) and counterparty risk disappearing whilst issuers benefit from access to greater investor pools and price discovery on multiple markets (as well as increasing efficiencies in areas such as corporate actions).



Appendix A, Figure 1: Example Debt Securities Process Flow



Example 2: Equities

Currently, equities settle T+2 and suffer settlement fail rates of 6% in equities markets; there is little pan-jurisdictional interoperability between exchanges and CSDs; brokers act as principal; and securities borrowing and lending (SBL) is inefficient. As we have seen with DeFi, the ability to borrow and lend assets has grown exponentially, yet the regulated securities markets are completely untapped.

GSX will seek to introduce an SBL board coupled with exchange traded TDRs (depository receipts of tokenised public securities), TSTs (Tokenised Swap Tokens) and CFDTs (Contract for Difference Tokens). CFDTs allow bilateral relationships between brokers and their clients, whereby brokers can extend liquidity from other markets, which would otherwise not be available by providing contractual liquidity between brokers and their clients. TSTs are a swap of a TDR for a CFDT. The holder is not an investor in the underlying issuer but gets the exposure to the securities' performance. The TST holder only receives/pay corporate actions in the form of cash (Tokenised Currency Receipts or TCRs). TSTs can be used to obtain a securities' performance and also as a hedging tool, within GSX or on positions in other markets, potentially within DeFi platforms. Prime brokers on GSX smart securities exchanges could offer leveraged versions of both CFDTs and TSTs.

Example 3: Private Markets

Given the costly barriers to public markets, IPOs have seen a sharp decline (70%⁷) over the last 20 years and private capital has exploded as a result. The growth rate of private markets versus public markets has doubled as has the total capital raised in private markets versus public markets. Although there is over US\$6.5 trillion in private assets under management, sellers are widely understood to accept a discount when selling illiquid private assets of as much as 20 – 30%. GSX will seek to provide a private market with the benefits of listed market ideologies and will seek to offer an efficient, low cost digital exchange and custody business model, creating increased value. The results (including shareholder registry, corporate documents) would be embedded immutably on the blockchain.

Example 4: Investomers

An “*investomer*” is someone who patronises a business in which he or she is also a shareholder. Market data indicates that investomers, by their action, generate greater brand recognition and loyalty among non-shareholder customers which contributes to profitability. In today's world loyalty lasts as long as it takes to execute a double click or an algo operation. Furthermore, the acquisition cost per customer for businesses is very high. This is a big challenge for markets, intermediaries and issuers. Currently, businesses, be they airlines or supermarkets, reward their customers with loyalty schemes. Although these schemes primarily can only be used for internal offers, they are proven to influence consumer behaviour at a lower marginal cost of customer acquisition or retention. However, there is generally very little link between shareholders and the loyalty reward scheme, and yet statistics support the fact that shareholders tend to spend money with businesses in which they have an interest and customers may be more likely to invest in securities where they are rewarded by loyalty schemes! Subject to regulatory regimes, loyalty schemes may be offered via digital utility tokens. The digital utility tokens would digitise the customer and investor acquisition and on-going interaction process, potentially reducing the loss of either group, or allowing them to become dormant, while the reward scheme points could be redeemed for shares or be traded on exchange. Investomer desired outcome: the loyalty points holder becomes a shareholder as well as a customer.

⁷ Source: CFA Institute



Appendix B - GSX Operated Exchanges

GSX will seek to deliver its business model through a leading interoperable global network of securities exchanges, which may include smart securities exchanges formed, established and operated as joint ventures along with relevant joint venture partners.

GSX (Gibraltar) <i>(operational now)</i>	<p>Gibraltar Stock Exchange, licensed by the Gibraltar Financial Services Commission as a listing-only stock exchange and operates two markets: (i) the Main Market, a regulated market recognised by the United Kingdom's tax authority (HMRC) under S1005 (1)(b) Income Tax Act 2007; and (ii) the Global Market, a self-regulated market which is a MTF as defined under the Markets in Financial Instruments Directive (MiFID). GSX Gibraltar is permissioned to list debt securities and investment funds in traditional form on the Main Market and traditional and digital form on the Global Market.</p> <p>GSX Gibraltar offers unique post-Brexit opportunities due to its ability to passport financial services into the UK.</p>
GSX (Labuan) <i>(license approval granted – target opening Q2 2021)</i>	<p>GSX Labuan will operate several markets including debt, equities and funds.</p>
GSX (US) <i>(in discovery)</i>	<p>During February 2021 the GSX Group announced that it had entered into a joint venture partnership with Document Security Systems, Inc. (NYSE American: DSS), a multinational company operating businesses focusing on brand protection technology, blockchain security, direct marketing, healthcare, real estate, and securitized digital assets, and Coinstreet Partners, a global decentralized digital investment banking group and digital asset financial service firm, in order to pursue a securities exchange license in the US.</p> <p>The joint venture is in the process of performing discovery in order to determine certain aspects of the securities exchange license application. The joint venture will obtain obtain exchange and blockchain technology solutions from GATENet.</p>

The GSX smart securities exchanges will aim to be pan-jurisdictional points of access for issuance, listing, tokenisation/detokenisation, trading, settlement and custody of tokenised securities providing issuers and investors access to global liquidity and price discovery.

Using GATENet's solutions, the GSX smart securities exchanges will aim to deliver T-Instant securities trading platforms to reduce cost, inefficiency, counterparty risk and balance sheet usage and automate many of the reconciliation and regulatory reporting processes. The vision includes a network of GSX smart securities exchanges for listing, global liquidity and price discovery in the US initially, with plans for exchanges elsewhere globally from 2022 and beyond.

In order to enhance operational and/or regulatory efficiency and/or any other reason, any one or more of the GSX exchange businesses may merge, transfer and/or combine their operations.



Appendix C - Glossary for the GSX Model

Term	Definition
ADTV	Average daily trading volume
AML	Anti-Money Laundering
ATS	Automated Trading System
BIS	Bank for International Settlements
CCP	Central Clearing Counterparty
CFD	Contract for Difference
CFDT	Contract for Difference Token
Clearing Member	Member who clears and settles trades through a CCP
Colo	Co-Location
CSD	Central Securities Depository
Currencies	Any currency including fiat, stable tokens acting as a medium of exchange and cryptocurrency as the case may be
CBL	Currencies Borrowing and Lending
DMA	Direct Market Access whereby a client is permitted by a Member to access an exchange directly
DVD	Delivery Versus Delivery
DVP	Delivery Versus Payment
DVP Model 1	A securities settlement mechanism that links a securities transfer and a funds transfer in such a way as to ensure that delivery occurs if and only if the corresponding payment occurs
FMI	Financial Markets Infrastructures
GSX	GSX smart securities exchange
GSX Model	GATENet - CSD Target Operating Model (TOM) Overview (Appendix D) and GSX - ATS Target Operating Model (TOM) Overview (Appendix E)
KYC	Know Your Customer
Member	Member firm of a stock exchange that can include broker/dealers and trading agents who execute trades on behalf of their clients
RFQ	Request for quote
SBL	Securities Borrowing and Lending
Securities	A financial instrument that grants the holder a right to income or ownership that is broadly categorised into different forms of equity securities and debt securities



Securities Account	An account for holding Securities
Sponsored Access	Where a Member offers their client DMA
SSS	Securities Settlement System
STP	Straight Through Processing
T	Trade date
T+1	Trade date plus one day
T+2	Trade date plus two days
TCR	Tokenised Currency Receipts
TDR	Tokenised Depository Receipts
TOM	Target Operating Model
TST	Tokenised Swap Token
Utility Token	Utility tokens grant holders access to a current or prospective product or service



Appendix D GATENet - CSD Target Operating Model (TOM) Overview

WARNING

The CSD TOM Overview described in this Appendix D may be subject to regulatory and legal approvals and therefore remains a strategic aspiration

Introduction

In comparison with current legacy mainstream databases, blockchain technology will bring value to financial market stakeholders by allowing different institutions to share the management of information in a distributed ledger that is formed with updated immutable data and information.

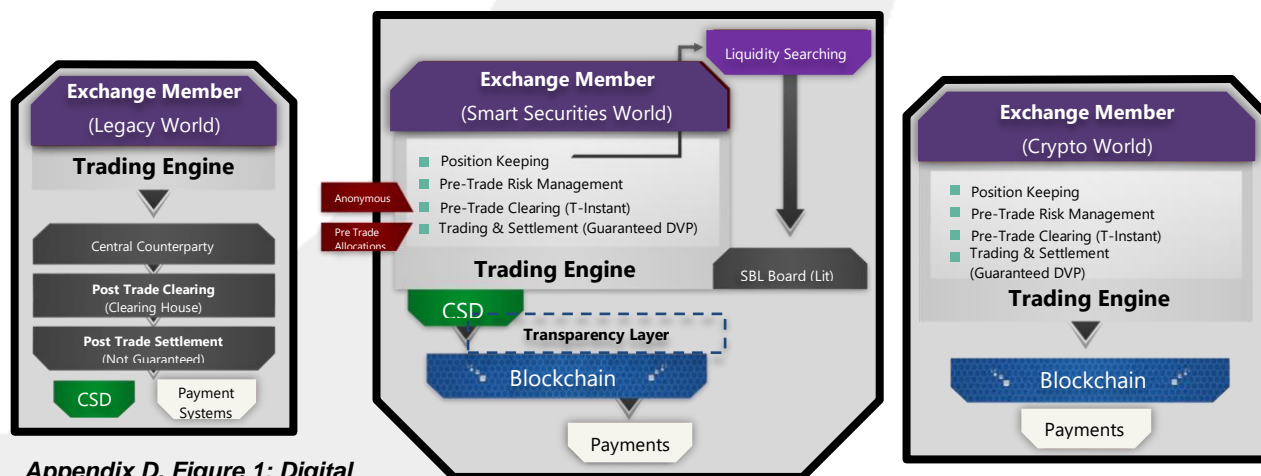
In the pursuit of its objectives, we will seek to implement standard CSD functions for:

- Settlement;
- Central Securities Depository (or Register); and
- Initial recording of securities in the CSD.

Normally the Settlement function and services are wholly CSD services, but in our model the settlement function is included in the ATS – as separate functionality to the trading. In addition, the CSD will maintain accounts and registers for Securities, Currencies and Utility Tokens. CSD Securities Accounts are primarily used for holding securities (equity, debt securities) and for settlement (through transferring positions to the ATS). Securities Accounts in the CSD will also be used to record (directly, or linked to) Securities Account holder's other assets, such as Utility Tokens or Tokenised Currencies Receipts (TCR) used as "settlement coins". Securities will only be recorded in the CSD (and traded/settled in the ATS settlement function).

Overview of Our Model

Our model combines the strengths of the "legacy", "crypto" and "smart securities" world to create a new model for trading and holding of tokenised Securities, Currencies and Utility Tokens.



Appendix D, Figure 1: Digital FMI with T-Instant Solution



CSD Model – Central Asset Depository (CAD)

The CSD Model has been extended from a pure CSD to a CAD covering tokenised:

- Securities
- Cash
- Utility Tokens

CSD Model – Services and Functions Perspective

The CSD Model - ATS trading platform combined with the integrated post trade (settlement) facilities would use the CSD system to perform two main post-trade functions that support orderly markets (settlement and registration):

- DVP instant settlement: ATS trading platform coordinates the simultaneous trading and irrevocable exchange of cash and financial instruments (DVP) between buyers and sellers on a gross basis, instantly with executed trade (settlement at trade model), and employing BIS DVP Model 1.
- ATS – settlement function (module), or domain: is part of the ATS trading platform, and performs instant debits and credits on the Securities and Currency accounts of final holders held within the ATS.
- Asset registration: the CSD maintains a 'register' of (legal) holders of Securities that are listed or admitted to trading on the ATS as a licensed trading venue. The CSD updates the CSD register, in near real time, to reflect all transfers and movements between buyers and sellers received from the ATS and entitlements resulting from corporate actions. Outside trading hours, the account balances held in the CSD shall be the final records.

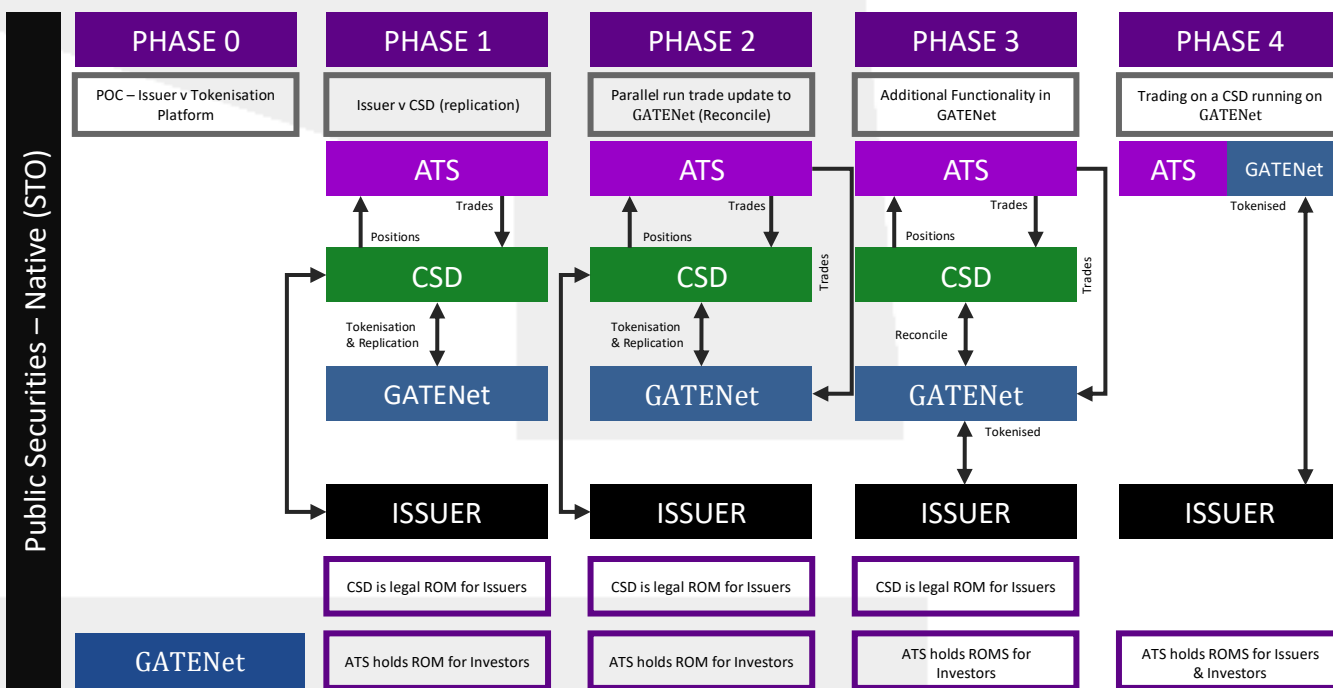


Appendix D, Figure 2: GSX Settlement and Trading Approach



Phased Approach

The intention is to develop our model via the following phased approach:



Appendix D, Figure 3 - Approach to Launching the CSD TOM into Production

The CSD Model will be supported by the blockchain technology (in parallel in Phases 0, 1, 2 and 3 and independently in Phase 4).

The parallel run will start with replication in the blockchain in Phase 1, followed by replication and reconciliation in Phase 2 and Phase 3. In Phase 4, the aim will be for the ATS and CSD to be eventually integrated into the blockchain, which is required for true end-to-end immutability.

Blockchain in this document refers to technologies that allow individual stakeholders (nodes) within a system to securely propose, validate, and store operations in a synchronised dataset (ledger) that is distributed across all nodes in the system.

Vision, Business and Technology Advantages – Unique CSD Features

1. Vision to become the world’s most trusted financial markets infrastructure:
 - I. Digital assets issued by GSX as the operator of the GSX ATS settlement.
2. Customers:
 - I. All to all customer on-boarding options with strong DMA/Sponsored Access, lowering KYC/AML costs and enhancing competition – via a Member and possibly through the CSD network in Phase 4.



- II. Simplified access to assets positions (decreased roles of intermediaries and allowing them to unlock principal capital requirements on behalf of customers).
 - III. Direct STP access to the issuer and corporate actions.
 - IV. Avoiding erroneous account positions through gross settlement and by optional orders re-confirmation directly by investors on a separate device.
 - V. With a SBL facility to be provided to customers, this will be Member to Member or client to Member and will not affect T-Instant settlement finality on the GSX operated exchanges. Market Risk is between Member and Member or clients and Member.
3. Tokenisation in DLT environment (Phase 1 to 3) and the parallel blockchain operational basis for:
- I. Legally recognised cash currencies tokens (TCRs).
 - II. An extensive range of secure smart contracts.
 - III. Single source of truth, with pre-trade self-validation of orders, other instructions and corporate actions.
 - IV. Immutability.
 - V. A parallel run blockchain technology to prove the new workflow model during Phases 1 to 3, prior to inserting the blockchain into the trading engine.
4. Legal certainty of tokenisation and blockchain environment (in Phase 4):
- I. Tokenisation in regulated and licensed trading venue and CSD.
 - II. Enforceability of rights and obligations of all stakeholders in the GSX trading platform, including its operator (ATS and CSD).
 - III. Securities tokens legally recognised as “Securities” and qualify as “financial instruments” under the relevant legislation.
 - IV. Legally recognised cash currencies tokens (TCRs).

Legal and Regulatory Paradigm Shift – Decentralised FMI in Blockchain environment (Phase 4)

There are already a number of organised financial market infrastructures in the blockchain world (e.g. cryptocurrency exchanges, wallet providers). They provide the link between the traditional, centralised regulated financial world and the new decentralised blockchain and blockchain models, which are typically unregulated.

This paradigm shift (i.e. the **shift from centralised to decentralised structures**) also poses major challenges for the supporting legal structure. It seems clear that further legal conceptual development of regulatory approaches and instruments is necessary in view of the paradigm shift from central to decentralised financial markets and infrastructures triggered by blockchain and blockchain models.

In our model, a “*top-tier account*” refers to a two-tier registry system, structured in two levels, where the CSD which is maintaining a central registry, aggregated balances (held across multiple accounts of the same investor using the unique identity code of the account) of Securities recorded in other types of accounts opened by “*account operators*” (i.e. Members). The CSD top-tier accounts reflect the total amount of Securities held by each Member on behalf of its clients (in a blockchain environment in “*wallets*”). Depending on specific jurisdiction and local laws, usually an investor only acquires a proprietary right when the inscription in the “*top-tier*” central registry.

The notion of “*Securities Account*” (or wallet in blockchain environment) in this document does not have a legal meaning (as referring to an agreement between the account provider and account holder) but as pointing to a technical means of book-keeping evidencing rights of the holder (or investor).



It is assumed that from a legal perspective, the GSX trading platform should be able to act as a CSD in terms of the relevant CSD regulations by creating a security token on a blockchain ledger (although “decentralised”) which functions as the “top-tier account” and by settling trades in such security tokens. We believe that legal certainty can be mainly achieved by way of contractual legal framework (CSD rulebooks), and with legislative clarifications or regulatory guidance in parallel. Accordingly, the CSD rulebooks and internal regulations would concentrate more on specific activities (activity-based approach) and thus be geared to both central and decentralised CSD and SSS operations.

As the CSD would operate in multiple jurisdictions, we would continue to observe regulatory developments accordingly and present practical regulations and internal rules on potentially decentralised financial market infrastructures in due course.



Appendix E GSX - ATS Target Operating Model (TOM) Overview

WARNING

The ATS TOM Overview described in this Appendix C may be subject to regulatory and legal approvals and therefore remains an strategic aspiration

Introduction

GSX is seeking to create a market for TDRs and TCRs on a global basis. GSX's initial launch markets are intended to be Labuan, Malaysia and thereafter the US and other venues, however, this ATS TOM is designed with the intention for it to be compatible for all markets (albeit laws, rules and regulations may vary from market to market and jurisdiction to jurisdiction which may have an impact on this ATS TOM Overview).

Key Vision, Business and Technology Advantages – Unique Features

1. Vision to become the world's most trusted financial markets infrastructure:
 - I. The only marketplace where true immutability is fully delivered in real-time, simultaneous with trading and guaranteed in contract. GSX intends to uniquely create this paradigm shift as its financial markets' infrastructure is re-organised around a single source of final legal balances with the blockchain CSD inside the trading engine.
 - II. A revolutionary trading, settlement, custody, registry and banking model delivering self-validation at the time of transaction (order, negotiated deals, other) entry.
 - III. A new paradigm of low latency with algos co-located on the same processor as the trading engine.
 - IV. Reduce end to end costs by 80% while unlocking capital.
2. Tokenisation: the legal and operational basis for:
 - I. Legally recognised security and fiat tokens.
 - II. An extensive range of legally secure smart contracts.
 - III. Single source of truth, with pre-trade self-validation of orders, other instructions and corporate actions.
 - IV. Immutability.
 - V. A parallel run blockchain technology to prove the new workflow model during Phases 1 to 3, prior to inserting the blockchain into the trading engine.
3. Liquidity Development: unique price formation and liquidity discovery models:
 - I. First tokenised public securities, TSTs, CFDTs, together with new models for developing liquidity in private securities.
 - II. Broad range of boards with advanced sweeping between boards for efficient price formation and liquidity discovery models.
 - III. SBL:
 - i. Automatic shorting to SBL which is lower latency than traditional markets.
 - ii. Algo provision of SBL liquidity to unlock returns and "light up" dormant securities.
 - iii. New price formation algo which rewards volume.
 - IV. TSTs: TSTs allow the Members to extend liquidity options to clients by providing a facility for its clients to enter a TST contract with the Member against liquidity/inventory on the TDR order book, or the SBL board:



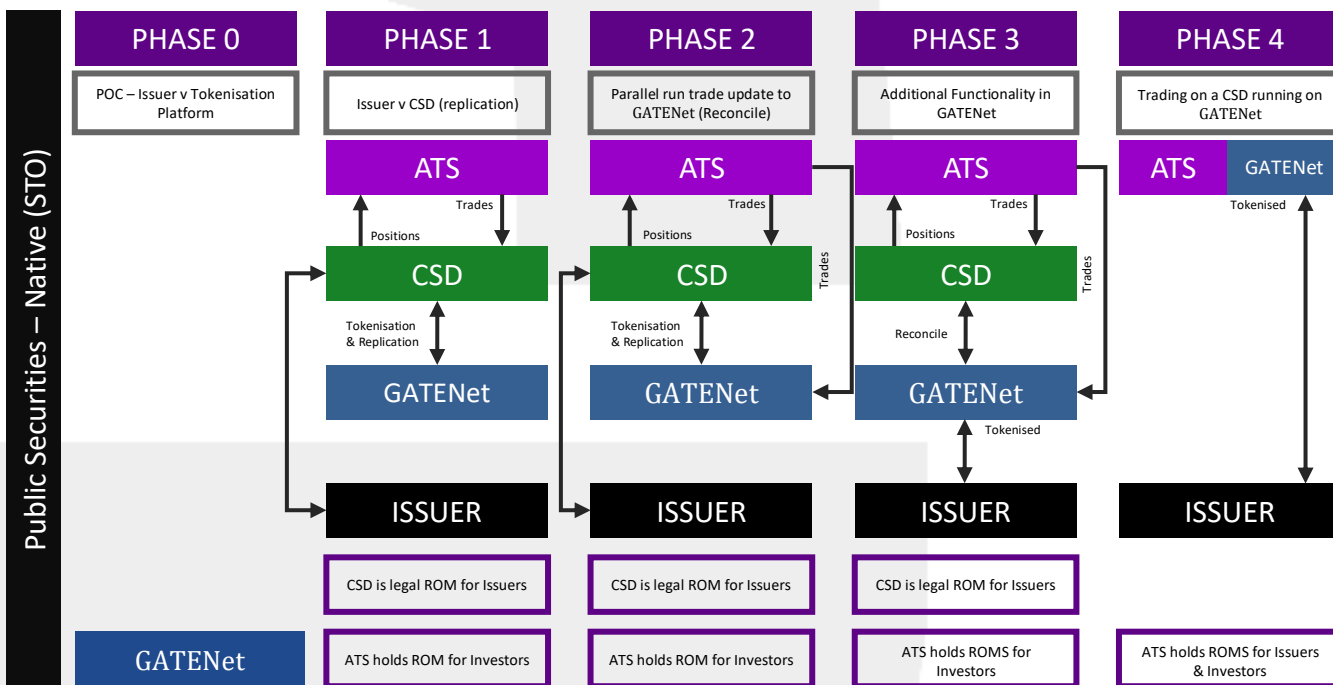
- i. Alternative to SBL for short selling.
 - ii. A hedge to price fluctuations while buy-in is in progress in the underlying legacy markets.
 - iii. Zero stamp for non-market makers.
 - iv. De-tokenization is allowed, subject to a premium collateral deposited.
 - V. CFDT: a CFDT allows a bilateral relationship between the Member and the Member's client. It allows the Member to extend liquidity from other markets, which would otherwise not be available on GSX. This additional liquidity will be offered as CFDT on the GSX operated exchange by providing contractual liquidity between the Member and the Member's client.
 - i. Alternative to SBL for short selling.
 - ii. A way of globalising the product without incurring regulatory barriers.
 - iii. Zero stamp for non-market makers.
 - VI. Auction based atomic swapping of securities and currency portfolios, settling on a DVD basis.
 - VII. Currency trading without unfair "last look" facilities.
 - VIII. Unlocking trading hours - out of hours trading within the ecosystem using final legal balances, removing counterparty risk.
- 4. Risk Management: eliminating risk rather than managing it:
 - I. Pre-funding model with bi-lateral credit creating instant settlement leading to the removal of:
 - i. T+2 settlement. It will be replaced by final irrevocable instant settlement simultaneous with trading.
 - ii. Settlement fails (no requirement to deal with settlement discipline).
 - iii. Counterparty risk. No CCP requirement and no requirement for Clearing Member risk requirements (no country has solved the recovery and resolution requirements without creating a moral hazard).
 - iv. All multilateral insolvency risks.
 - v. Multilateral syndication of credit via CCPs, to save costs, unlock capital and avoid cross subsidies on default.
 - II. Eliminating margin requirements for cash markets unlocking a 5-10% capital contribution of net ADTV on an on-going basis and avoiding the risk of collateral being locked up on insolvency of a Clearing Member and CCP (pending a lengthy multi-year insolvency administration).
 - III. Smart contract creation for TSTs (CFDs) directly to collateralised and ring-fenced assets to minimise close out risk.
 - IV. Conservative approach to leverage – 100% asset backed in lit/dark book with no possibility to detokenize while positions are part of open contracts e.g. SBL, TST, CFDT.
 - V. Leverage is obtained between Member and the Member's client removing market wide cross subsidies. Loss recovery is bilateral, not syndicated across the market.
 - VI. Self-consensus delivering end to end self-reconciliation of final legal balances.
 - VII. Automatic portability of accounts on insolvency or death through smart contracts.
- 5. Customers:
 - I. All to all customer on-boarding options with strong DMA/Sponsored Access, lowering KYC/AML costs and enhancing competition.
 - II. White-labelled "investor" solutions (re-)uniting issuers and investors, issuers and customers.
- 6. IT Advantages:
 - I. Self-validation to eliminate transaction processing risk.
 - II. A safe road map to delivering guaranteed end to end immutability from Phase 4 massively lowering systemic risk.
 - III. Lowest latency trading (around 4 micros with a plan to achieve nano levels).



- IV. Changing the Colo paradigm, with collocated algos on the same processor as the trading engine.
- V. Safe parallel run development of blockchain including a legally compliant access and control layer.

Phased Approach

The intention is to develop our model via the following phased approach:



Appendix E, Figure 1 - Approach to Launching the ATS TOM into Production

Legal and Regulatory Advantages

The TOM is designed on the assumption that there is no legal and regulatory advantage or disadvantage to trading and holding TDRs and TCRs compared to their underlying. There is also no change of law required.



Functional

This market place is innovative and combines the advantages of:

- Broker portability, Issuer portability and transparency/competition.
- Offering trading in securities, currencies, securities traded on swap (against CFDs) and CFDs as outright instruments.
- DVD trading as an RFQ marketplace with cash settlement of any variances.
- A new SBL/CBL marketplace that monetises dormant assets, matches supply/demand through a range of innovative algorithms and creates a fund management wrapper for account holders who are legally barred from direct participation or do not choose to self-administer.
- An innovative model to eliminate systemic risk, credit risk, replacement cost risk and back office processing, while in certain instances allowing for bi-lateral credit.
- Eliminates all the complexity that the industry is currently facing with settlement discipline, buy-in boards and the cost of such compliance.
- Member client on-boarding – to offer clients direct on boarding to a standard KYC/AML service and allow an account to trade via any Member (operating the model with DMA/Sponsored Access facilities).
- Blockchain immutability, pre-order validation and tokenisation, but as a parallel run with a fully functional CSD/registry so as to eliminate risk.

All of the above would be delivered under legal certainty.

Multilateral netting would not offered as it is systemically risky. Netting allows a Member and Member's client to trade in and out of positions on the same day (so that on settlement date the account is flat). The Member or Member's client need not deposit initial margin on T, but will deposit initial margin on T+1, for any net open securities position.

In our model, there would be no clearing firm, but loans could be offered bi-laterally with deposits made to GSX directly at accounts in a national central bank. This would permit the Member and Member's client to trade within the deposited amount allocated in the loan facility. The Member and Member's client would sign a legal agreement to support a bi-lateral loan facility. The Member's client could trade within the limits of the loan agreements between the Member and the Member's client. GSX would be provided with the power of attorney to risk manage the agreement and close out positions based on volatility parameters.

CSD

The CSD may be either operated as an in-house function, following the procurement of a system (or a live fully licensed CSD), or outsourced as a service.

Globalisation Model

This ATS TOM will take several years to implement and be successful. In addition, there are several significant legal and operational barriers that prevent transcontinental markets for securities.



Appendix F - GATENet Fee Model

CATEGORY	A STANDARD T+2 FEE	GATENet PROJECTED
TRADING (Standard excludes Market Making)		
DEBT (APPROX AVERAGES)	0.90 bps to 4.90 bps	0.10 bps
EQUITY (APPROX AVERAGES)	0.45 bps to 3.03 bps	0.10 bps
CLEARING		
DEBT (APPROX AVERAGES)	0.21 bps to 0.69 bps	0.10 bps
EQUITY (APPROX AVERAGES)	0.21 bps to 0.69 bps	0.10 bps
SETTLEMENT		
DEBT (APPROX AVERAGES)	US\$1.75	US\$0.25
EQUITY (APPROX AVERAGES)	US\$1.75	US\$0.25
SAFEKEEPING		
DEBT (APPROX AVERAGES)	0.15 bps to 0.95 bps	0.05 bps
EQUITY (APPROX AVERAGES)	0.16 bps to 1.42 bps	0.05 bps
SECURITIES BORROWING AND LENDING		
DEBT (APPROX AVERAGES)	lending 0.45% p.a.; borrowing 1% p.a.	0.10% both sides
EQUITY (APPROX AVERAGES)	lending 0.95% p.a.; borrowing 1.75% p.a.	0.10% both sides
CORPORATE ACTIONS		
PROXY VOTING	US\$65.00	US\$10.00
TAX RECLAIM	US\$60.00	US\$10.00
DEPOSITARY RECEIPT EXCHANGE	US\$50.00	US\$10.00



Appendix G - Risk Factors

UTILITY TOKENS ARE UNREGULATED FORMS OF DIGITAL ASSETS. HOWEVER, REGULATION, INTERPRETATION, AND LAWS VARY BY JURISDICTION. UTILITY TOKENS INVOLVE AND RELATE TO THE DEVELOPMENT AND USE OF EXPERIMENTAL SOFTWARE, TECHNOLOGIES, AND BUSINESS MODELS THAT MAY NOT COME TO FRUITION OR ACHIEVE THE OBJECTIVES SPECIFIED IN THE INFORMATION PROVIDED CONNECTED TO THE PROJECT (E.G. AS SET OUT IN THIS GATENET WHITEPAPER).

GATE TOKENS REPRESENT A HIGH RISK TO ANY GATE TOKEN HOLDER. GATE TOKENS SHOULD ONLY BE BOUGHT, SOLD AND HELD BY THOSE WITH SUBSTANTIAL TECHNICAL KNOWLEDGE AND BY PERSONS THAT FEEL COMPETENT IN RESPECT OF THE UTILITY OF THE GATE TOKENS. CAREFUL DUE DILIGENCE SHOULD BE UNDERTAKEN ON THE OBJECTIVE OF THE GSX GROUP, GATENET, THE GSX OPERATING EXCHANGES AND WITH FULL UNDERSTANDING THAT HOLDING GATE TOKENS MAY NOT ULTIMATELY RESULT IN A VALUABLE TOKEN AND THE VALUE OF ANY CONTRIBUTIONS MADE TO ACQUIRE GATE TOKENS MAY BE SUBJECT TO TOTAL LOSS.

Risk Factors Associated with the GSX Group

- 1. GSX Group Limited is Not Regulated:** The GSX Group Limited is a private company. It is not regulated by any competent authority (although certain subsidiary entities and investments, and/or joint venture arrangements of the GSX Group are). As such, GATE token holders are extremely unlikely to have recourse to any regulatory authority, financial compensation scheme or ombudsman in relation to any products issued or services provided by any member of the GSX Group including any services provided by GATENet and the issued and circulating GATE tokens.
- 2. Early Stage Entities:** The GSX Group, including GATENet and the GSX operating exchanges, consists of multiple early stage entities. Early stage entities are highly risky and speculative and they may not succeed and may not achieve their business objectives and the value of GATE tokens as a result may be lost in its entirety.
- 3. Early Stage Technology:** The GSX Group's business model, including GATENet and the GSX operating exchanges, uses blockchain/distributed ledger technology in various businesses. Persons should only hold GATE tokens if they understand and accept that the risk of use of blockchain/distributed ledger technology in business, such as the GSX Group, remains in its early stages of adoption and development. Holding GATE tokens therefore represents a very high risk. There is an inherent risk that the software, technologies and related businesses used by GSX Group could be unfit for their intended purpose and/or not have the value expected and the value of GATE tokens as a result may be lost in its entirety.
- 4. No Assurance of the Success of the GSX Group:** The GSX Group, including GATENet and the GSX operating exchanges, may not achieve its objectives, may experience substantial underestimations and fluctuations in its operating results, and may not have sufficient capital to achieve its objectives. The success of the GSX Group will be subject to the risks associated with the underlying businesses of the GSX Group, including market conditions, changes in regulatory environment, general economic and political conditions, loss of key management personnel and other factors.



- 5. The GSX Group companies require various licences and permits in order to operate:** It is possible that licenses required will not be forthcoming and/or that those currently held may be revoked, with unintended and unknown adverse effects of the relevant business of the GSX Group.
- 6. GSX Exchange Businesses may Merge, Transfer and/or Combine Operations:** The GSX Group has a number capital markets businesses and from time to time for operational, regulatory and/or other reason the GSX Group may make the decision to merge, transfer and/or combine the operations of an exchange or exchange businesses. Such a decision would be made by the GSX Group and GATE token holders will have no say nor representation in respect of such matters. GATE token holders may not consider a merger, transfer and/or combination to be in their interest either in respect of holding GATE tokens and/or utilising the services of the merged, transferred and/or combined businesses.
- 7. GATENet and the GSX Operating Exchanges may use Different Blockchain Technology:** The GSX Group has a number of options in relation to the blockchain technology that it uses for GATENet and the GSX operating exchanges and such blockchain technology may be different from the technology set out in this Whitepaper. Such a decision would be made by the GSX Group, including GATENet and the GSX operating exchanges, and GATE token holders will have no say nor representation in respect of such matters. GATE token holders may not consider a use of different blockchain technology to be in their interest either in respect of holding GATE tokens and/or utilising the services of the different blockchain technology.
- 8. Future Members and Investments of the GSX Group Not Assured:** As of the date of this Whitepaper, the GSX Group has a number of subsidiary entities and investments, and has entered into a joint venture arrangement and may enter into further joint venture arrangements in the future. The subsidiary entities, investments, and joint venture arrangements are, however, private entities and persons will not, therefore, have an opportunity to evaluate for themselves the relevant economic, financial and other information regarding the subsidiary entities and investments and, accordingly will be relying on the judgment and ability of the GSX Group managing itself. There is also no guarantee that any of the subsidiary entities and investments held by the GSX Group as of the date of this Whitepaper will be held in the future and there is no guarantee that the joint venture arrangements will continue to their intended respective business objectives. The GSX Group may make a decision to invest in new subsidiary entities and investments in the future, and/or other joint venture arrangements and equally may divest itself of any subsidiary entities and investments held as of the date of this Whitepaper and/or may make the decision to terminate and/or exit joint venture arrangements. GATE token holders will have no say nor representation in respect of such matters.
- 9. Intellectual Property Rights:** There is a risk that intellectual property that are material to the GSX Group do not or do not turn out to belong to and/or are not owned by the GSX Group and that the GSX Group or any of its constituent parts suffers a loss as a result of the same.
- 10. Lack of Diversification:** The GSX Group has a limited number of businesses and is focused on capital markets and, as a consequence, the aggregate success of the GSX Group may be materially adversely affected by the unfavourable performance of a single investment or a small group of investments within the GSX Group and/or joint venture arrangements.
- 11. Joint Ventures and Third Party Involvement:** The GSX Group may co-invest with third parties through joint ventures or other arrangements or entities in respect of subsidiary entities or investments. Investing with third parties may involve risks not otherwise present, including the possibility that such third parties might become bankrupt, fail to fund their share of required capital contributions or otherwise default on their obligations, make poor business decisions or block or delay necessary decisions. Such third parties may also have interests or goals which are inconsistent



with the commercial interests or goals of the GSX Group. While the GSX Group may seek to maintain sufficient rights with respect to any such co-investments, or joint ventures to permit the GSX Group's objectives to be achieved, such investments may have the potential risk of an impasse on decisions if neither partner has full control over the co-investment, or joint venture. In addition, disputes between the GSX Group and the third parties may result in litigation or arbitration that would increase the GSX Group's expenses and may prevent the GSX Group and their respective employees and affiliates from focusing their time and effort on the GSX Group's business objectives, subsidiary entities and investments. The actions of third parties may also result in liability or loss by the GSX Group.

- 12. Loss of Key Personnel:** The GSX Group will rely on key personnel to manage and control the GSX Group. There is no guarantee that the GSX Group will be able to attract and retain the key personnel that would be involved in successfully implementing the GSX Group's objectives. The loss of any key personnel could have a significant adverse impact on the business of the GSX Group.
- 13. Commitment with No Certainty of Return:** The GSX Group object requires the GSX Group to have a commitment in respect of its subsidiary entities and investments, and/or joint venture arrangements with no certainty of return.
- 14. Limited Access to Liquidity by Selling Subsidiary Entities and Investments:** The GSX Group's subsidiary entities and investments are private companies therefore they cannot be publicly sold. There is currently no public or other secondary market for GSX Group's subsidiary entities and investments, and as such, the GSX Group would have limited access to liquidity by selling or divesting subsidiary entities and investments should the need to do so arise.
- 15. Risk of Insolvency:** The GSX Group's subsidiary entities and investments are primarily early stage companies. Although the GSX Group's subsidiary entities and investments may generate operating income, the value creation for the GSX Group in respect of its subsidiary entities and investments will generally occur only upon the achievement of the GSX Group's strategic and business objectives. Achieving the GSX Group's objectives will require capital and liquid resources. If the GSX Group does not achieve its objective due to lack of liquidity it may achieve significantly less value creation than had it succeeded, and possibly the GSX Group could become insolvent prior to achieving its objectives. There can be no assurance that the GSX Group will have sufficient liquid resources in order to achieve its objectives.
- 16. Lack of Operating History:** While the management team and advisors have capital markets experience the majority of the members of the GSX Group are newly formed entities with no operating history upon which to evaluate the GSX Group's likely future performance. The past experience of the management team and advisors should not be treated as any indicator of the future performance of the GSX Group.
- 17. Black Swan Events:** A black swan event is an event that comes as a surprise, has a major effect, and is often inappropriately rationalised after the fact with the benefit of hindsight. Black swan events occur from time to time and when they do the effect on a business and an economy (in general or specific) can be catastrophic. A black swan event could occur post issuance of this Whitepaper. The likelihood of a black swan event occurring after the issue of this Whitepaper and that such will have a material and/or catastrophic effect on the GSX Group is not known. If such a material and/or catastrophic event occurs then the GSX Group may suffer loss or complete loss and GATE tokens may become worthless.



Risk Factors Associated with GATE Tokens

- 18. GATE Tokens Locked-Up in Staking:** Some GATE token utility requires staking and hence lock-up of GATE tokens over a period of time. The staking and lock-up terms may not be able to be broken and any GATE tokens staked may be required to be staked for the full duration of the relevant staking/lock-up period. There is a risk for persons who participate in any staking and lock-up GATE token utility that the traded price of GATE tokens is higher during the staking/lock-up period than when their staked/lock-up GATE tokens are released. This could have a negative price effect on persons who have staked/locked-up GATE tokens to the effect that they may have been able to achieve a higher price for the sale of GATE tokens during the staking/lock-up period than the date when their staked/lock-up GATE tokens are released. There is also a risk that staked/locked-up GATE tokens are released at the same time to a material number of other persons that participate in staking/lock-up GATE token utility. There is a risk that a material number of persons who receive their GATE tokens after release from staking/lock-up seek to sell them in the market at materially the same time. There is a risk that the traded price of GATE tokens decreases due to multiple GATE tokens coming to the market from a staking/lock-up GATE token utility at the same time.
- 19. Volatility and Trading:** A market in GATE tokens may develop, however, there is no guarantee. Even if a market develops, GATE tokens may be highly illiquid making it difficult to acquire or dispose of them at a desired price, movements in the market may be volatile and may be impaired and be subject to delay which could expose GATE token holders to losses. Persons should only buy and hold GATE tokens if they can afford a complete loss.
- 20. Risk of Governance Failure:** Although governance is a utility relating to GATENet, GATE tokens confer no governance rights of any kind with respect to the voting rights attaching to the GSX Group or any other entity and/or joint venture arrangement connected to the GSX Group, save for GATENet and such governance in relation to GATENet matters may be limited. Save for GATENet, GATE token holders will have no right or say in the GSX Group or its governance, or any party connected thereto. Any failure of GSX Group corporate governance could adversely affect the value of GATE tokens.
- 21. Risk of Lack of Statutory Protection:** GATE tokens are not shares and do not represent deposits, and are not subject to any statutory insurance or guarantees. In the event of the insolvency of the GSX Group there will be no protection in place to recover losses on GATE tokens.
- 22. Regulatory Risk:** There is a risk that the GATE tokens could be prohibited under applicable or new law. Blockchain/distributed ledger technology allow new forms of interaction and it is possible that certain jurisdictions will apply existing regulations on, or introduce new regulations addressing, blockchain/distributed ledger technology based applications and token allocations, which may be contrary to the structure of GATE tokens and which may, *inter alia*, result in substantial modifications of the mechanics of GATE token utility including potential loss of GATE token value. The GSX Group or any related entity may cease operations in a jurisdiction in the event that regulatory actions, or changes to law or regulation, make it illegal to operate in such jurisdiction and/or use GATE tokens or make it commercially undesirable to obtain the necessary regulatory approval(s) to operate in such jurisdictions.
- 23. Risk of a Lack of a Suitable Legal Remedy:** In the event of a dispute or claim against the GSX Group or any related or associated third parties, it may prove very difficult and costly for GATE token holders to assert their legal rights in their home jurisdiction (based on applicable law and jurisdiction and enforcement issues) or in the jurisdiction of the GSX Group and this may dissuade holders from asserting their legal (including contractual and statutory) rights. In addition, even if a claim is brought



it may prove difficult to bring a claim against forward looking statements that are not sufficiently legally certain, nor are they binding promises nor representations.

Risk Factors Associated with Blockchain Networks

- 24. Development Risks:** Small blockchain networks may be developed by private companies, using limited man-power and financial resources. GATENet may engage and use small blockchain networks in the pursuit of its objectives. Any malfunction, breakdown or abandonment of the small blockchain networks may have a material adverse effect on GATE token utility. Moreover, advances in cryptography, or technical advances such as the development of quantum computing, could present fundamental risks to the value, distribution or even use of such small blockchain networks. This risk is mitigated to some degree given that GATENet may use multiple blockchain networks in order to deliver its services to achieve its objectives.
- 25. Risk of Weaknesses:** There is an inherent risk that blockchain networks and related applications could contain weaknesses, vulnerabilities or bugs causing, *inter alia*, the partial or complete loss of value to either the GSX Group, GATENet and/or GATE tokens due to loss of utility. This risk is mitigated to some degree given that GATENet may use multiple blockchain networks in order to deliver its services to achieve its objectives.
- 26. Private/Permissioned Blockchain Networks:** Private/permissioned blockchain networks present different risks to public networks. Private/permissioned blockchain networks may have a limited number of nodes which creates a potential cyber security risk whereby a malicious attack could result in over 51% of the private/permissioned blockchain network nodes being successfully hacked which may cause a corruption of the data on the private/permissioned blockchain network. This risk is mitigated to some degree given that GATENet may use multiple blockchain networks in order to deliver its services to achieve its objectives.
- 27. No Control and Limited Influence:** The GSX Group is likely to have no control and limited influence over any blockchain network that it uses to perform its services. There is a risk that this lack of control and/or influence could result in changes to a blockchain network despite the GSX Group's wishes, lobbying and/or requests to the developer and/or community connected to the blockchain network resulting in amendments to the blockchain network that is not in the interest of the GSX Group and/or GATENet. This risk is mitigated to some degree given that GATENet may use multiple blockchain networks in order to deliver its services to achieve its objectives.

Risk Factors Associated with Blockchain and Distributed Ledger Technology

- 28. Cybercrime:** The acquisition and management of tokens is inherently subject to the risk of cybercrime that is difficult to manage and mitigate. This may result in concerted attempts and even successful attempts to hack GATE token staking/lock-up utilities, and the sites and software used to manage software or blockchain/distributed ledger technology components and to defraud GATE token holders. Any unauthorised access or cybercrime may result in theft or loss, impacting the ability to manage GATE tokens, pay GATE token rewards and other associated features of the GATE token utilities.
- 29. Risks Stemming from Blockchain/Distributed Ledger Technology:** Although blockchain/distributed ledger technology may provide a number of potential benefits, it also raises a number of specific risks and issues. There may be flaws in relation to the technology itself, for



example, in respect of the smart contracts. While blockchain/distributed ledger technology supporters generally see blockchain/distributed ledger technology as more advanced than many existing systems, it may still be possible that smart contracts may not work as intended, i.e., in case of coding errors. Blockchain/distributed ledger technology may raise specific technology risks, because of its very nature and due to the fact that blockchain/distributed ledger technology is still a nascent technology and largely untested in financial markets. Also, the fact that a relatively small group of people have the necessary skills, knowledge and experience to understand the intricacies of the technology may exacerbate operational risks and the risk of fraud.

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