



L A R E D

A Highly Scalable Consortium Blockchain

Trusted Dimension for Economies

[Summary— release 1.0 — revision 1]

March 16, 2021

The LARED Team

Executive summary

Innovative enterprises, financial and governmental institutions recognise blockchain potential and are willing to implement blockchain technology. The difficulties, such as enforcing KYC and AML, are still unsolved. Current solutions do not provide appropriate compliance mechanisms, face applicability issues, and lack simplified use-case implementation. Private blockchains cannot be trusted due to high centralisation levels, lack of interoperability and risk of a single point of failure. At the same time, a decentralised public blockchain cannot ensure both identification and compliance measures.

The long-run experiments and trials of CBDCs, self-sovereign and distributed digital IDs have begun: European Central Bank CBDC testing, Bank of Sweden digital Krona, Bank of Japan, Bank of Lithuania digital collectors coin, etc. Enterprises and governmental institutions have started to turn to the consortium and/or public networks that are regulatory compliant and more efficient and robust than private ones. Global economies and businesses need global decentralised distributed ledger infrastructures to scale and fulfil market needs. A new approach is required to ensure trust between technology, entities, and end-users.

LARED Association

It is possible to combine the best aspects of blockchain technology as distributed governance, with open access to everyone, security, robust compliance, and regulatory framework. Trusted collaborative management is offered in an open regulatory environment with Public-Permissioned Blockchain as a base. LARED provides a self-sovereign mechanism and technological infrastructure, ensuring that developers, merchants, and consumers benefit from the compliance and security built into the infrastructure. The LARED Association is an independent membership organisation headquartered in Switzerland, aims to be a well-respected international institution, and seeks to get the Financial Market Supervisory Authority (FINMA) approval. The Association offers a governance model and reputation system that provides the association members with an operational framework. The association overviews and supports financial institutions and enterprises' use cases with embedded compliant LARED blockchain solutions. The Association coordinates and provides a governance model for the LARED network's decision-making to safely and compliant operations and further develop the LARED infrastructure. In this way, use cases have the power of improving or adding new processes, blockchain features and overseeing the management of the Association. It solves the issue of trust as requirements need to be met and maintained by the members. The consortium network plays a Financial Intelligence Function, similarly to the central bank's role and is managed by its members in a collaborative environment. It will cater the market integrity, provide consumers and investors with appropriate protection levels and a clear understanding of their rights, and ensure financial stability.

The LARED Association well recognises the importance of strong AML/CFT programs and other mechanisms to prevent illicit activities and address threats and risks. It will support regulators, central banks, and lawmakers fighting against money laundering and terrorism financing, while protocol-level controls will encourage the highest standard of compliance. This should ensure that the created concept is trusted with the regulators' proof while future LARED members are safe and compliant to join this movement.

Additionally, the LARED seeks to achieve the United Nations Sustainable Development Goals (SDGs), evaluates network efficiency, and proposes further needed actions. The goal is to ensure that LARED adds its positive mark to nature and society while driving a real impact that improves lives and the planet.

Membership

The LARED Association allows geographically distributed and diverse businesses, public services, and non-profit organisations to join while ensuring that only compliant and reliable entities can be part of the LARED. The Association does not have a specific number of membership slots and seeks to have a big, sustainable, and trusted community. Every potential member that meets high-level due diligence requirements is welcome in the LARED community.

● Summary of membership types and specific roles:

Types	Role	Requirements
The Association and its subsidiaries (if any)	<ul style="list-style-type: none"> Responsible for the governance of the LARED members network and the development of the LARED infrastructure; Conducts due diligence on Association Members & Board Members and service providers; Establishes compliance standards for members and implements compliance controls; Monitors the network and flags suspicious activities; Controls the process of minting and burning LARED tokens. 	The administration is led by the Board, which is elected by the members every two year.

Types	Role	Requirements
Tier 0 – Founding & IMO Members	<ul style="list-style-type: none"> Creates the bases of the Association; Need to be recertified to Tier 1-4 within 36 months. 	Pass Due Diligence
Tier 1 – Financial Sector (Fintech, Subtech/Regtech, Capital Markets, Insurance etc.)	<ul style="list-style-type: none"> Participates in Association governance; Will be subject to periodic due diligence & compliance audits. 	<ul style="list-style-type: none"> Be fully licenced or certified by the Association; Demonstrate a reasonable risk-based regulatory compliance program and controls; Pass risk-based Due Diligence. Have a use case.
Tier 2 – Public Sector (including GovTech, DID, Healthcare)	<ul style="list-style-type: none"> Participates in Association governance. 	<ul style="list-style-type: none"> Not included in the lists of Sanctioned Countries; Have a use case.
Tier 3 – Supply Chain (including logistics, manufacturing, retail services, track, and trace)	<ul style="list-style-type: none"> Participates in Association governance; Will be subject to periodic due diligence & sustainability audits by the Association. 	<ul style="list-style-type: none"> Proof sustainability & pass Due Diligence; Have a use case.
Tier 4 – ICT, Consultancy & others	<ul style="list-style-type: none"> Participates in Association governance; Supports members of the LARED Network. 	<ul style="list-style-type: none"> Pass Due Diligence; If IT company, be certified to provide services to LARED members.

Technological solution

We understand that the governance model, only together with sufficient infrastructure, can solve the problem. The world needs a reliable, trustworthy, and interoperable transaction system to ensure that assets' transfer is secure and straightforward.

LARED infrastructure is a digital ledger technology-based solution with regulatory compliance in financial and money markets in mind, with built-in security features, such as protocol-level compliance infrastructure and sanction screening. The protocol has native compatibility with both private and public chains. Designed for interoperability, users can preserve a permissioned ecosystem in a private chain and communicate freely with the public chain as a decentralised hub of data.

With the LARED infrastructure, tokens and other assets can easily be restricted from being sent to or from any account that meets configurable criteria. This lets easily create regulatory-compliant assets (such as financial products), IDs, and non-transferable votes. High throughput message queues for real-time big data analysis of transactions are accessible via LARED infrastructure. The enterprises can control every client account – allowing for compliance and AML control mechanisms to be implemented to manage these transactions as transaction reversal with full audit trail and accountability are available. Automated protocol-level compliance controls will apply to all on-chain activities enforcing specific compliance requirements for all LARED infrastructure transactions. It utilises a proven platform that has already met and exceeded an EU Central Bank's security, regulatory and functional requirements for CBDC.

LARED supports aggregate transactions containing up to 1,000 inner transactions involving up to 25 different cosignatories. It can merge multiple transaction accounts into one by generating a single-use, disposable smart contract. This feature enables trustless swaps, paying fees on behalf of a user, escrowed transactions, and many other easily configured business uses. LARED users can also create multi-level, multi-signature accounts (max three levels in-depth), allowing more complex account setups. It means that a transaction can be signed-off with multiple approvals, where needed. These permits use cases to implement various use cases such as account recovery, anti-fraud monitoring and ordered multi-stage transaction approvals.

LARED is built with a four-tiered architecture, making it more resilient and faster than current blockchains, with a capacity of over 3000 transactions per second. LARED is written in familiar C++ and supports JavaScript for developing applications. The plugin approach allows developers to introduce different ways to alter the chain's state via transactions without modifying the core engine or disrupting other features. APIs ensure seamless integration with existing enterprise systems and processes, as well as other networks and blockchains, while SDKs give internal developers a familiar and comfortable experience without the need for proprietary programming languages. Further, it is premised on not creating a disequilibrium to the existing system but allowing for sub-system migrations over time. Outlier and non-critical solutions can be ported across without risking the system. LARED ensures that a slowdown in one layer will not slow the others, and each of the layers can be updated independently. Due to its flexible architecture, developers can quickly fix bugs via plugins. Moreover, the LARED infrastructure is ECO Friendly and has an advanced Proof of Stake (PoS) consensus algorithm.

Contract plugin framework makes LARED more resilient to human error and network attacks. LARED supports the compile-time substitution of its primary hash algorithm, which produces a 32-byte value from input data (SHA3). Security features are built into the protocol, including multi-sig, encrypted messaging, and automatic escrow swaps as per the market's highest standards.

LARED has settlement finality implemented on the protocol level. Finality in the blockchain space is the way someone can tell if a transaction or block on a chain is at risk of changing in the future or not. The finality is vital because, without it, any transaction can theoretically be rolled back. Transaction finality in the LARED infrastructure currently takes up to 8 minutes and is highly configurable.

LARED infrastructure reduces the costs and complexities in existing processes and provides a platform for new business models and innovation, bringing together developers, projects, and enterprises to create mutual benefit and value. Our purpose is to evolve the LARED ecosystem and optimise the blockchain platforms to get tremendous success to all its parts. By working closely across the ecosystem, the Association will help make collective ambitions real. A robust and highly customisable blockchain solution can be utilised by financial institutions or entities from other industries as a basis to form its core operating platform in the long term. New and existing products and services can be developed, ported, and launched using this infrastructure. This bespoke and yet highly flexible solution allows the use case time to get accustomed to it and implement solutions on the fly while not losing out on its growth path towards a blockchain-driven system. All the mentioned functions and features already present in the current release of LARED TestNet.

Tokenomics

LARED infrastructure consortium network will be enabled utilising two native blockchain tokens: a governance token called RED and a utility token LARED [LRD]. LRD has a fixed maximum supply of approximately 5 B tokens. At network release, the supply will consist of 420 M tokens, while other LRD tokens will be created as inflationary rewards over time. Consortium Network operated blockchain rewards will be released to each block producer based on its custom proof of stake (PoS) algorithm. The RED token is blockchain governance and permission token of the LARED Blockchain infrastructure. Consortium members have a right to hold RED tokens during the time of their membership. RED tokens can be used for voting at the Blockchain protocol level, staking and plays a part in reward allocation for node operations (PoS – Proof of Stake), but cannot be transferred to any third party. The RED token also permits operating a LARED Staking or/and Finalizing Node, which means that RED token holders who run nodes and/or stake their REDs, get transaction fees and LRD rewards during the inflation period of 120 years from the initial start. To improve LARED infrastructure usage, the higher inflation rate is programmed into the protocol for the period from 2.5 months to 2 years. The Association offers Initial Membership Offering (IMO) as an opportunity to join the LARED Consortium in the first phases of its development. IMO participants get exclusive opportunity to become members with the initial membership pricing and enjoy additional benefits.

LARED Consortium network provides a globally distributed infrastructure for enterprises, the public sector, and non-profit organisations. It is a trusted technological infrastructure for transparent, reliable, and efficient solutions for the present and future needs of blockchain-driven products and service developments. Simultaneously the LARED association ensures public trust with established governance, compliance, and security standards. The infrastructure design and features reduce the cost, complexity, and time of implementation of use cases. Its features enable easy integration with most applications and therefore is agnostic to existing standards.

