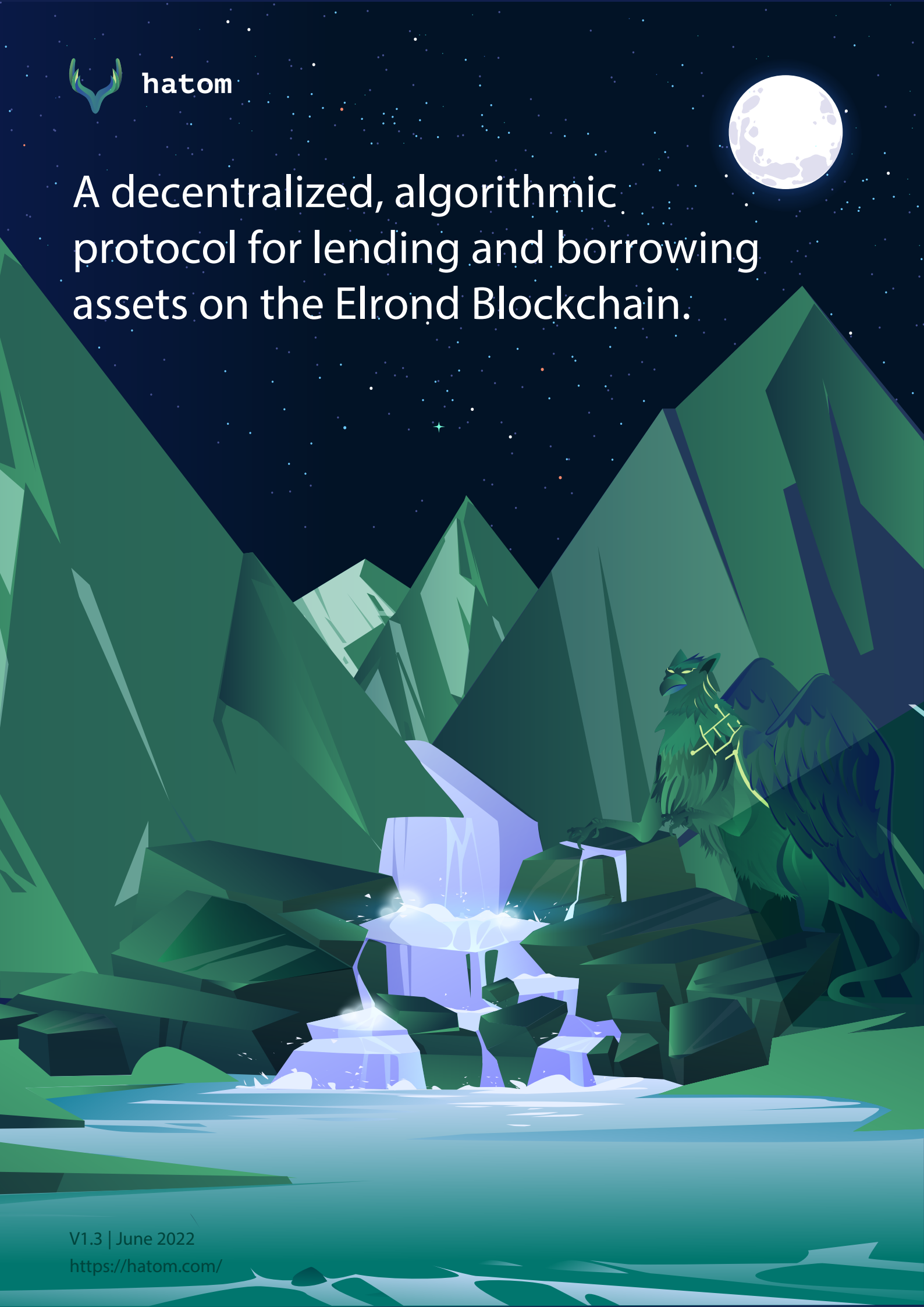
hatom

A decentralized, algorithmic protocol for lending and borrowing assets on the Elrond Blockchain.



V1.3 | June 2022

https://hatom.com/

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Abstract

This paper describes the Hatom Protocol, which is a decentralized, algorithmic protocol for lending and borrowing assets on the Elrond Blockchain. It allows users to earn interest on their deposits, and take loans in a collateralized fashion.

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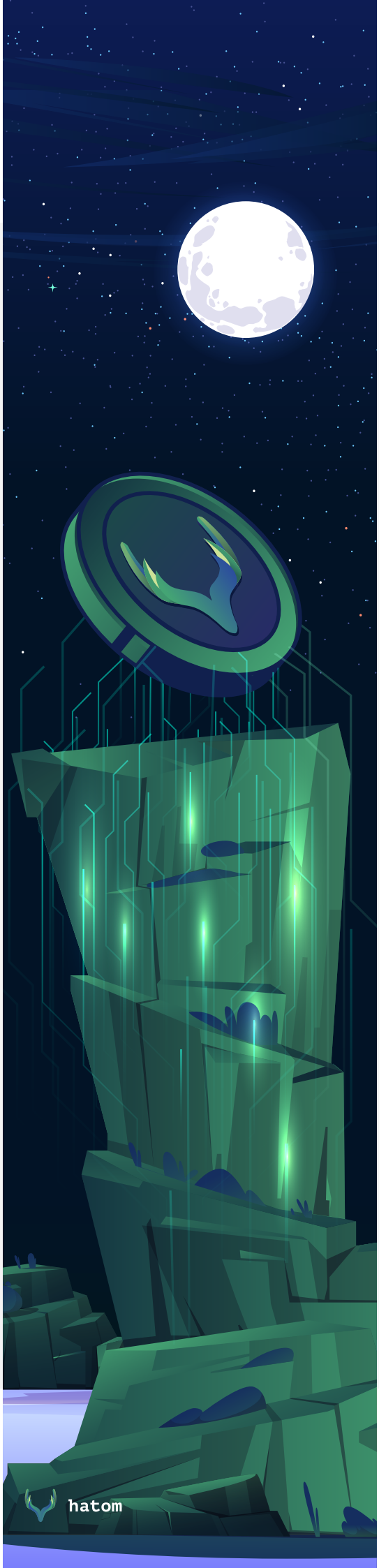

1. Introduction:

The cryptocurrency market has been evolving continuously during the last years, it has soared to an all-time high value reaching a combined market cap of $3 trillion as of November 2021.

Financial markets weren't able to follow up and offer cryptocurrency users (traders, investors, speculators ..) the possibility to use the « time value » of their assets at its full potential.

Trading the « time value » of assets opens an opportunity for people who have assets they don't use to earn interest on them, and for people to be able to get liquidity without having to sell their assets, thus closing their position on the assets and not being entitled to the potential upside value gain.

Centralized exchanges (Binance, Bittrex, Kraken ..) have tried to implement solutions to fulfill those needs, by making it possible for their users to trade blockchain assets on margin through borrowing markets available on the exchange. But it implies the user's use of trust-based systems and gets exposed to hacks, absconds of their assets, software bugs, and tech errors, users will not be the real owners of their assets as long as they are deposited in a centralized exchange. In addition to that, all positions and assets are virtual, operations are done on the exchange, and can't be moved on-chain.

We will present in this paper a decentralized approach to borrowing crypto assets without the risks and flaws of the alternative approaches available on the market.

2. The Hatom Protocol:

Hatom is a peer-to-pool based protocol on the Elrond Blockchain, lenders provide liquidity by supplying tokens to a pool of assets, and borrowers borrow liquidity by taking these tokens from that same pool. Both the lenders and the borrowers interact with communal pools that are managed by smart contracts. These pools algorithmically and dynamically adjust the interest rates lenders earn and borrowers pay depending on demand and supply. In other words, the interest rates are calculated automatically with no intermediary party needed.
Each pool is an exclusive money market for a single ESDT token, and all of the transactions and historical interest rates of all the money markets are public.

2.1 Supplying Assets:

Supplying is the process of lending tokens to a pool. In exchange for giving liquidity to this pool, users will gain interest in the tokens they have deposited. After depositing your tokens, the pool will mint hTokens and credit you. These hTokens prove that you have supplied assets to Hatom protocol. The system will ask for those hTokens back once you will try to withdraw your assets from the supply side.

2.1.1 Primary Uses Cases:

The main use case is providing users who have a long-term investment in Elrond or its tokens with the possibility to earn interest on their assets without having to fulfill any loan request or take speculative risks.

2.2 Borrowing Assets:

Hatom offers users the possibility to take loans in an over-collateralized manner through a simple and easy-to-use user experience. The borrowing process is instant and doesn't require users to negotiate the loan terms and decide the funding periods or maturity dates. The borrowing cost of each money market is represented by an interest rate based on the demand and supply of each asset.

2.2.1 Collateral Value:

Users have to deposit assets as Collateral to be able to take loans. The collateral Factor is expressed as a percentage that differs for each money market and is a multiplier used to calculate the maximum amount a user can borrow against his collateral. The borrowing capacity is calculated as follows, the sum of the value of an account's underlying token balances multiplied by the collateral factors. Users can take loans up to their borrowing capacity, in other words, they won't be able to borrow, transfer hToken collateral, or redeem hToken collateral if it would raise the total value of borrowed assets above their borrowing capacity. Those measures have been put in place to protect the protocol from default risk.

2.2.2 Risk & Liquidation:

A position is eligible to be liquidated when the value of an account's borrowing exceeds its borrowing capacity, which means there is no longer enough collateral to back up the amount that has been borrowed. A fragment of the outstanding borrowing can be repaid in exchange for the user's collateral at the current market price minus a liquidation incentive; this creates an ecosystem where liquidators reduce and eliminate the protocol's risk.

The close Factor is a percentage that indicates the amount of a position that a liquidator can close and repay at one time when performing a liquidation. The liquidation process can be repeated until the user's loan is less than their borrowing capacity.

All assets and prices are contained within the Hatom protocol, the liquidation process does not rely on any outside systems. Anyone can participate in the liquidation ecosystem. It is a competitive market, and some liquidators even develop their own solutions and bots to be the first ones to liquidate a position and receive the liquidation bonus.

2.2.3 Primary Use Cases:

Selling your asset pushes you to close your position on that asset. If you are long on the asset, you would not be entitled to the potential upside value gain. When you borrow, you can get liquidity without having to sell your asset. Users usually borrow to leverage their holdings, to make new investment opportunities, or for unexpected expenses.

2.3 Interest Rate Model:

The Hatom interest rate model is based on the supply and demand ratio of the asset. The interest rate of each asset changes constantly depending on market conditions. When demand is low, the interest rate is low, inversely when demand is high, the interest rate is high.

Asset Utilization

At a given point in time t, the money market utilization factor $U(t)$ is:

$$U(t) = \frac{B(t)}{L(t)},$$

where $B(t)$ is the total borrowed amount and $L(t)$ is the amount of underlying liquidity available, given by:

$$L(t) = C(t) + B(t) - R(t),$$

in which $C(t)$ is the remaining cash and $R(t)$ are the protocol reserves.

The borrowing cost of each money market is represented by an interest rate based on the demand and supply of each asset, such that:

$$r_b(U) = \begin{cases} r_0 + m_1 \cdot \frac{U}{U_{optimal}} & \text{if} \quad 0 \leqslant U \leqslant U_{optimal}, \\ r_0 + m_1 + m_2 \cdot \frac{U - U_{optimal}}{1 - U_{optimal}} & \text{if} \quad U_{optimal} < U \quad 1. \end{cases}$$

where r_0, m_1, m_2 and $U_{optimal}$ are model parameters.

The supplier's interest rate is given by:

$$r_s(U) = U \cdot r_b(U) \cdot (1 - F_r),$$

where F_r, the reserve factor, is the fraction ofinterest set aside for reserves.

2.3.1 Liquidity Incentive Structure:

The Hatom protocol depends on the interest rate model to encourage users to provide Liquidity to the protocol. The protocol doesn't guarantee liquidity, which means that in case of high demand for an asset, the liquidity of that asset available to be withdrawn or borrowed will decline; if this happens, interest rate rise, encouraging supply, and disincentivizing borrowing.

3. Implementation & Architecture:

The Hatom protocol is open-source, all smart contracts are publicly available. It is forbidden to fork it for commercial use. Hatom Protocol is protected and subject to a "Business Source License" which is a trademark of MariaDB Corporation Ab.

3.1 hToken Contracts :

The exchange rate between underlying and hTokens in a given money market is just the quotient between the underlying available liquidity and the total supply of hTokens H (t):

$$F_x(t) = \frac{L(t)}{H(t)}.$$

The exchange rate between hTokens and the underlying asset increases as the market's total borrowing balance increases.

3.2 Interest Rate Mechanics:

Hatom money markets are based on an interest rate model built around the supply and demand ratio of the asset. The interest rate of each asset changes constantly depending on market conditions. The Interest Rate Index captures the history of each interest rates money market. The Interest rate changes continuously as users mint, redeem, borrow, repay or liquidate an asset.

The total borrowed amount or total debt dynamics are governed by the following dierential equation:

$$dB(t) = r_b(t) \cdot B(t) \cdot dt,$$

which translates to the following dierence equation when applying a simple discretization scheme:

$$B_i = B_{i-1} \cdot (1 + r_{b,i-1} \cdot \Delta t).$$

Each money market must track both the total borrowed amount as well as each individual account borrows. In that context, the money market smart contract computes and stores an Interest Rate Index given by:

$$I_i = I_{i-1} \cdot (1 + r_{b,i-1} \cdot \Delta t),$$

with initial condition I0 = 1. This index is updated every time a transaction occurs and is also stored when an account takes or repays a borrow. This allows translating any borrowed amount to a present value, e.g. a borrow Bj taken at time tj ⩽ t has a present value given by:

$$B_j(t) = \frac{I(t)}{I(t_j)} \cdot B_j(t_j).$$

In other words, defining a discount factor D(t, T) as:

$$D(t,T) = \frac{I(t)}{I(T)},$$

with $t \leqslant T$, we get:

$$B_j(t) = \frac{1}{D(t_j,t)} \cdot B_j(t_j).$$

Finally, it is worth describing the protocol reserves dynamics. Basically, a portion determined by the reserve factor Fr of the accrued interest is set aside as reserves, such that:

$$dR(t) = F_r \cdot r_b(t) \cdot B(t) \cdot dt,$$

which translates to:

$$R_i = R_{i-1} + F_r \cdot B_{i-1} \cdot r_{b,i-1} \cdot \Delta t.$$

3.3 Borrowing:

Users who have enough balance deposited on Hatom protocol can borrow by calling borrow(uint amount) on the relevant hToken contract. This function call checks the user's account value; if he has enough collateral, it will update the user's borrow balance, transfer the tokens to the user's Elrond address, and update the money market's floating interest rate.

3.4 Liquidation:

A position is eligible to be liquidated when it's under-collateralized, which means there is no longer enough collateral to back up the amount that has been borrowed, it can happen if the value of the collateral falls, or if the borrowed assets increase in value. The public function liquidate(address target, address collateralAsset, address borrowAsset, uint closeAmount) can be called, which exchanges the invoking user's asset for the borrower's collateral at a rate equal to the market rate minus the liquidation penalty.

3.5 Price Feeds:

A price oracle is a smart contract that can be queried for the real-time price of the underlyingToken. The Hatom protocol can this way get the updated price whenever it's needed. Some oracles rely on off-chain services that regularly report the asset's price and write it on-chain. Other oracles are purely on-chain, relying on an AMM.

3.6 Hatom Controller:

The Hatom protocol maintains a gated approach for whitelisting new tokens to sustain a secure lending ecosystem. This process is executed with the admin function, supportMarket(address market, address interest rate model) that allows users to begin interacting with the asset. There needs to be a valid price from the Price Oracle for the users to be able to borrow an asset, and there needs to be a valid price and collateral factor to use an asset as collateral.Each function call is confirmed by the Hatom controller smart contract, which validates the collateral and liquidation before authorizing a user action to proceed.

3.7 Governance:

Hatom on-chain governance uses a mechanism that enables Holders of the 'Hatom Token' to vote for protocol changes directly on the blockchain, it was developed to provide individual users with more influence in the governance process. In this system, governance proposals are shared among the community through polls and are executed if they receive the required amount of votes to be gratified. Hatom aims to completely decentralize the control of the platform over time, allowing the community and stakeholders to update the interest rate model per market, update the oracle address, and make propositions for the next updates.

4. Security of the protocol:

The Hatom protocol will be reviewed and audited by Trail of Bits, OpenZeppelin. The economic security of the Hatom protocol will be evaluated by Gauntlet, through a constructed simulation-based market and stress-testing platform. You can keep track of our auditing progress by checking the security section on our 'Docs Page'.

5. Summary:

- The Hatom protocol constitutes a functioning decentralized lending platform for Elrond assets.
- In the Hatom protocol, each money market is defined by interest rates unique to it, determined by the supply and demand ratio of that asset; if the demand to borrow an asset increases or the supply is removed, the interest rates increase accordingly, encouraging the deposit of liquidity.
- The Hatom protocol allows users to earn interest on their deposits through a decentralized platform.
- The Hatom protocol allows users to take loans using their deposits in the Hatom protocol as collateral.

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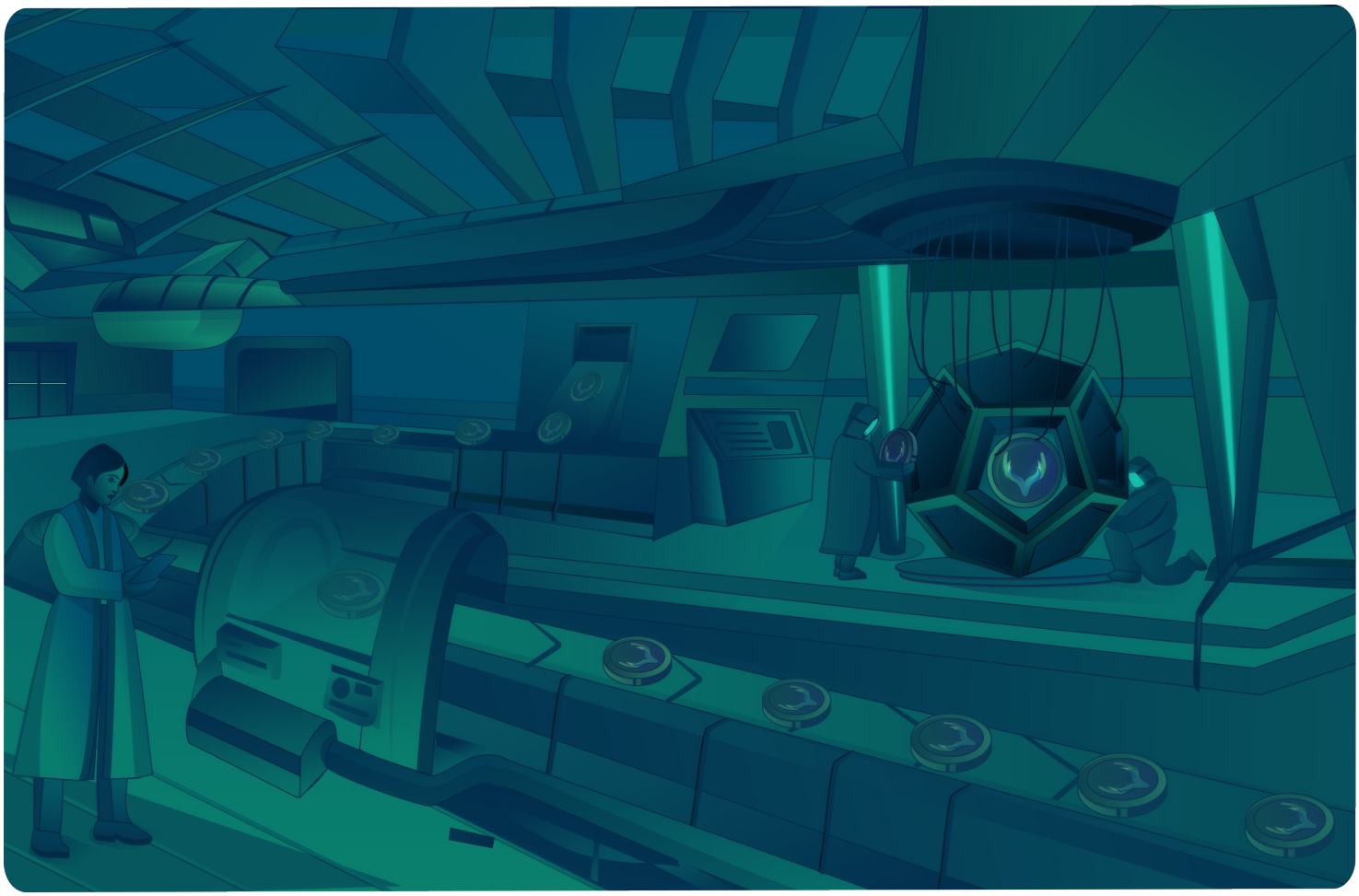
6. Hatom Token:

The Hatom token is an Elrond Standard Digital Token that is powering the Hatom lending protocol. The Hatom token is essential for the governance of Hatom's decentralized lending protocol, it is the fuel for the perpetual decision-making process that will empower the Hatom protocol.

The Hatom token is the key factor of the governance mechanism, it enables the lending protocol to be 100% community-driven. The community will be deciding which upgrade should be added, what feature should be integrated, or what token they want to list next.



7. Why Elrond:

Network

Elrond is a smart contract blockchain network and is among the most powerful blockchains, it enables developers to build decentralized applications, protocols, and crypto tokens on top of it.

Elrond is an internet-scale blockchain that aims to solve the scaling and speed problem by parallelizing transaction processing(Adaptive State Sharding).

The Elrond blockchain can handle 15,000 TPS at a cost of only $0.001 per transaction.

The speediness and low cost of the Elrond network make the blockchain highly attractive for large commercial entities and decentralized finance projects.

This remarkable network efficiency is achieved with an innovative combination of its bespoke Secure Proof-of-Stake consensus mechanism, advanced sharding tech, validator network structure, and native Elrond coin eGold (EGLD).

The Elrond Blockchain is easy-to-use, it has a standard toolkit usable by any programmer, it also has a very friendly user experience with its internet-like interface allowing for accessibility and mass adoption.

ESDT Token and NFTs

The Elrond ESDT standard is implemented directly into the Elrond Protocol, which means that token creation and transfers on the Elrond network are fast and cheap.
Elrond Smart Accounts have an associated data trie, it enables any account to have key-value storage where balances of any number of tokens can be stored, in other words, tokens can effectively belong to an account, instead of being associated with its address in a 3rd party smart contract, which revolutionizes ownership of tokens compared to other blockchains.
Elrond NFTS are ESDTs with additional metadata, they have multiple abilities such as allowing the creator to receive royalties for any transaction involving their NFT.

8. Roadmap:

The Roadmap of the Hatom protocol can be split into two sections, a roadmap before the launch, and a roadmap after the launch :

Roadmap before the launch:

Phase 1: Ideation and UI Development: Done within 6 weeks.

Competitors research.
Product ideation: defining materials, features, and user interface.
Secured enough funding to deliver a final product.
Creation of a UI development team (composed of 2D/3D designers and front-end integrators).
Defining and validating the User flow.
Design propositions and confirmation of the design system.
Creation of all the pages of the site and the application.
Premium domain name acquisition.
Front-end integration.
Partnership with a blockchain development firm (RatherLabs).

Phase 2: Inception: Done within 3 weeks.

- Detailed review of the implementation of Compound protocol, including parameters and security features.
- Understanding all the mechanisms in Compound such as :

1. Liquidations.
2. Governance.
3. Pricing oracles.
4. Borrowing.
5. Lending.
6. Rewarding mechanisms (bounties, etc)

- Transpolate Compound's design to Elrond, identifying all the key points that might differ given to differences in the nature of the two different blockchains.
- Review of the critical vulnerabilities reported in the multiple audits made to Compound and come up with fixes specific to Elrond's environment.
- Document differences between Compound Ethereum-based & Elrond's theoretical implementation, to ease the onboarding of solidity/Ethereum developers that might want to work or interact with Elrond Protocol.
- Contracts design.
- Have a clear understanding of similarities and differences between Compound's architecture and a realistic approach in Elrond.
- Design Elrond contracts with parallelisms between blockchain implementation standards (for example, using ELROND's standard fungible token implementation, trying to replicate ERC20's functionalities in Compound).
- Propose optimizations over Compound's protocol leveraging differences of the Elrond blockchain (for example, Elrond supports natively fungible tokens).

Phase 3: Development: estimated to 10 weeks.

- Writing of Elrond smart contracts in Rust :
1. HToken (Analogous of CTokens in Compound).
2. Controllers (Analogous of Comptrollers).
3. Governance (Custom development, not analogous to standard GovernanceComp).
4. Oracles for accurate pricing indicators.
5. Reservoir.
6. Lenses (if needed).
7. Rewarding mechanism with the ability to provide up to two reward tokens to lenders and borrowers.
8. Libraries for SafeMath, secure calculus, etc...
- Accomplishing similar test coverage to Compound's smart contracts (to a degree).
- Writing deployments scripts.
- Web3 integrations with Elrond wallet for all actions such as :
1. Lending.
2. Borrowing.
3. Liquidating.
4. Connection of wallet.
5. Querying the blockchain for balances, staked balance, borrow & lending rates.
6. Estimating transaction fees (if possible, when needed).
7. Building transactions.
8. Executing transactions in the background, showing notifications for errors & success.
- Development of a simple liquidation script for helping developers develop their own liquidation bots.

Phase 4: Deployment & Testing estimated to 2 weeks.

- Deployment in testnet & mainnet :
1. Set of contracts (controllers, oracles, etc).
2. Initial money markets.
3. Hatom governance token.
4. Liquidity pool in existing exchange to acquire Hatom token.
5. Reservoir and funding with tokens.
- Configure all required contracts to a functioning state.
- Development of scripts :
1. New money markets.

2. Funding reservoir.
3. Incentivizing specific money markets.
4. Configuring airdrop rate.

Phase 5: Documentation & Auditing estimated to 2-4 weeks .

- Writing of the technical documentation on the public Gitbook page :
1. Providing similar (to a degree) coverage as compound.
2. Writing of tuning parameters documentation.
3. Liquidation bot functionalities and everything to get started using it.

- Providing support for audits :
1. Fix critical & high severity vulnerabilities.
2. Answering questions to the audit team

Phase 6: Mainnet launch and Maiar incubation estimated duration 1-3 weeks .

- Maiar launchpad token launch.
- Mainnet deployment.
- Marketing and PR campaigns.

Roadmap after the launch:

Q3 2022

Hatom Token Staking

Hatom will integrate a staking platform where a percentage of Hatom's lending network revenue will be shared among users staking their tokens into a specific staking yield. Users will be able to earn a passive income like shareholders.
When staking their Hatom Tokens, users will earn rewards in EGLD, USDC, MEX, and HTM

Q4 2022

Hatom Safety Module

Hatom token holders will have the possibility to stake their Hatom tokens in a Safety Module and earn high APY. The Safety Module acts as a security layer to the protocol. In case of an unfortunate shortfall event, up to 30% of the staking liquidity can be used to cover the deficit.

Hatom Token Launch

We intend to launch the Hatom token through the MaiarLaunchpad, which is a strategic growth engine for projects using Elrond. A maximum of 1 billion tokens will be generated during the Token Generation Event. It will be distributed to different groups and used to create a liquidity pool. The distributed tokens will be subject to multiple lock periods and vesting schedules. They showcase our willingness and long-term commitment to creating a healthy token economy.

Q1 2023

Hatom Liquid Staking

Liquid staking is a feature meant to increase the protocol's liquidity and to allow users to profit from both the staking yields and the lending protocol yields. Users will be able to delegate their EGLD to the nodes of Hatom's chosen validators and earn a staking APY. They will also receive sEGLD that they can supply to the lending protocol to earn an additional yield. sEGLD will also have its Liquidity Pool on the Maiar Dex.

Hatom dApp SDK

Implementation of Hatom dApp SDK providing easy-to-use methods to interact with the Hatom Protocol.

Q2 2023

Hatom Treasury Module: Hatomtreasury.com

Introduction of the Hatom Treasury Program, where users will be able to deposit their Fiat Currency and earn interest without any of the complexities of crypto.

Governance Delegation Module

The Governance Delegation Module will be integrated into the Governance program enabling all Hatom holders to delegate their votes.

Hatom Risk DAO (to be discussed in due time)

We are creating a Risk DAO that will seek to provide committed and professional risk analysis to support the Hatom Protocol and help the community mitigate risk and take advantage of new opportunities with greater confidence.
This DAO will also make Hatom Protocol fully decentralized.

Hatom Token Burn Module

The Hatom team will allocate a certain amount of Hatom Token liquidity to be burned. The amount that will be burned and the moment this procedure will occur will be decided by the community through the Governance program.
This burn mechanism will make 'Hatom Token' a deflationary asset, allowing it to appreciate in value.

Q3 2023

Hatom Bridge: Soul.io

The Launch of the Hatom bridge will use the Atomic Swap technology, thus making it possible to instantly trade native assets on different blockchains in a decentralized manner and with no risks.

Integration of Synthetic Tokens: Esdt.io

Integration of pegged tokens like ETH, BTC, DAI, etc. Pegged tokens are tokens where the price is designed to remain the same as a designated asset.

Hatom V2 Launch

Launch of a redesigned and more advanced version of the Hatom Platform. Positioning Hatom as a « DeFi Hub » with multiple products such as a Lending app, a decentralized Bridge, and a Treasury module, each with its unique features and functionalities.

Q4 2023

Hatom LP Money Market On Elrond

Introduction of LP Money Market to the Elrond Blockchain. Users who have staked their crypto assets will be able to deposit their liquidity pool tokens in the Hatom Lending Protocol to earn interest. They can also use them as collateral to take loans.

Q1 2024

Create a Defi dex aggregator On Elrond

As DEXes will become prevalent, introducing a DEX aggregator will be a necessity. Hatom's objective will be to provide Elrond blockchain with its first DEX aggregator to find the best prices for users across decentralized exchanges

Q2-Q3 2024

Integrating FlashLoans On Elrond

Hatom anticipates that the Elrond Blockchain will be hosting multiple decentralized exchanges. To keep up with the growth, we plan to bring Flash Loans, which represent a new form of uncollateralized lending, to Elrond's ecosystem. This will open the door to numerous economic possibilities.

Create Defi lego Builder On Elrond

Hatom seeks to develop its own DeFi lego builder-an optimized tool that uses the drag and drop mechanism that will enable people without any coding experience to use flash loans.
You can simply select your desired inputs and broadcast your strategy in a single transaction. Transactions are sent out through secret channels to prevent front-runners from copying other users' ideas.

Q4 2024

Create the Hatom mobile app

The launch of the Hatom mobile app that will combine and feature all the products and services that Hatom has created in line with its roadmap.

R&D Projects

The projects below require R&D phases and may be started at any given point during the Roadmap

ADA/NEO N3 Integration

The Hatom Team will go through a Research and Development phase around the Cardano and the NEO blockchains to expand its network and provide their communities with their first decentralized lending protocol.

Lending Protocol Integration for Elrond NFTs

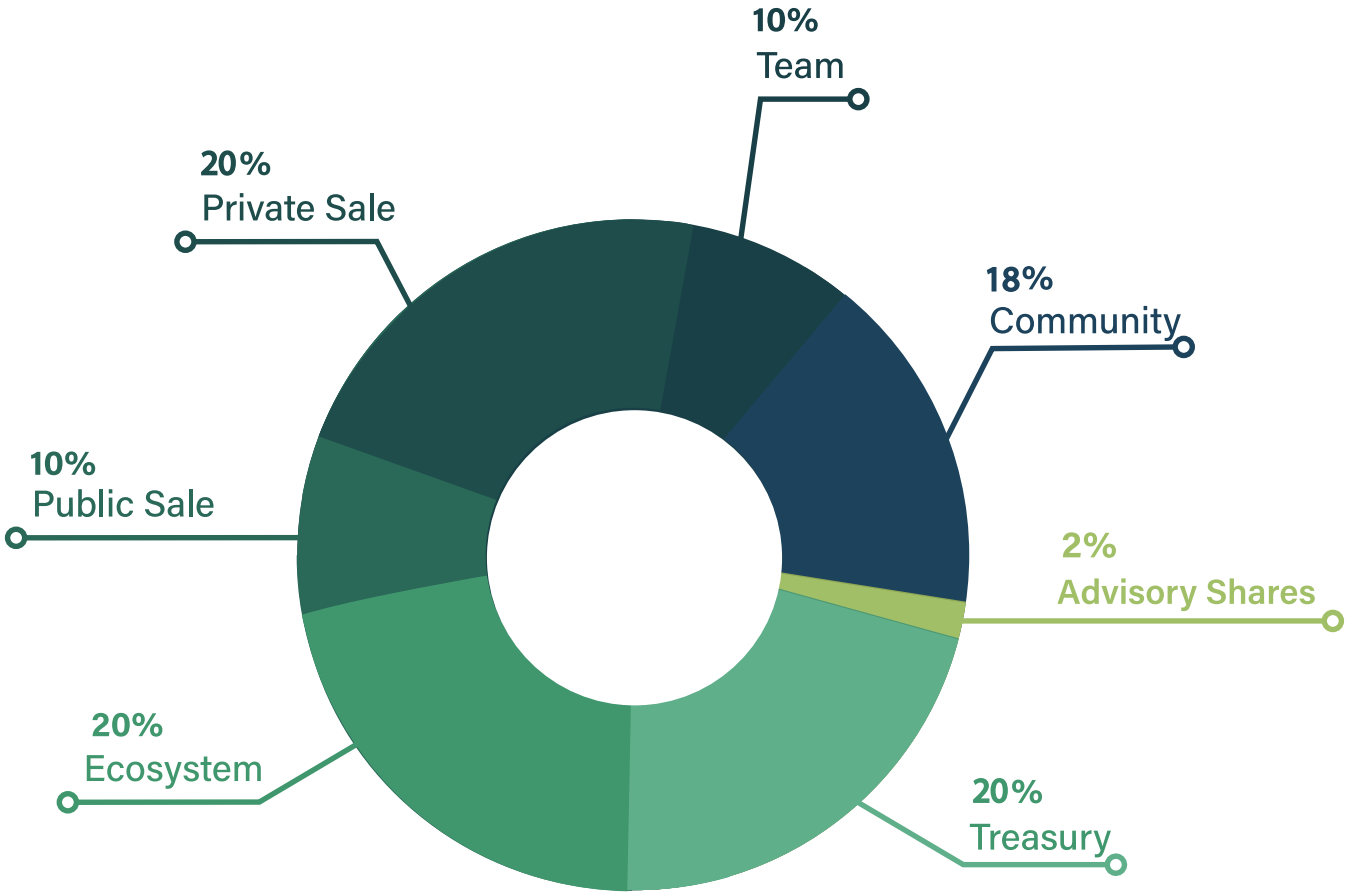
The Hatom Team will go through a Research and Development phase to create the first Elrond NFT Money Market and make it possible to supply NFTs and collateralize them to take loans.

First Cross-Chain Lending Protocol

The integration of the first Cross-Chain Lending Protocol will provide tremendous economic opportunities to the vast majority of blockchain users. It will allow them to supply and borrow assets across different blockchains. For example, you will be able to provide ETH on the Ethereum blockchain and take out a loan in the form of EGLD on the Elrond blockchain. This innovative service will make DeFi lending more inclusive

9. Tokenomics:

In Q1 2023, Hatom will launch the HATOM token which will run natively on the Elrond blockchain and function as a utility token making it the fuel of the governance system and at the core of multiple Hatom Labs services.
A supply of one billion tokens will be created.



-20% of Hatom tokens will be issued for a **Private Sale,** and two hundred million tokens will be sold to strategic and financial investors in the blockchain space.

-10% of Hatom tokens will be sold during a **Public Sale.** This sale is to provide tokens to Hatom's early believers and supporters.

-The **Treasury** allocation is 20% and will be reserved for unpredicted expenses that might surge

-2% will be reserved for **Advisory shares**, to key ambassadors, advisors, and partners who participated in the development of the protocol.

-The **Team** allocation will be 10% of the Hatom token supply. It incentivizes the current and the future team members for their determination and engagement in revolutionizing the Elrond Blockchain by rewarding them; the allocation will be fully unlocked in 5 years.

-20% of the Hatom token will be allocated to the **Ecosystem**, which is mainly dedicated to adoption and growth; we will be able to fulfill our vision by building multiple products and services (as stated on our Roadmap) and allocate grants to developers building on top of us. This will permit Hatom Protocol to take the lead and become a « Defi Hub ». A portion will also contribute to the quarterly burn that will be detailed in due time.

-An allocation of 18% will be reserved for the **Community** and can also include the blockchain community, technical audits, and early adopters. These tokens will be mainly used for liquidity pools, bridge liquidity, and the safety Module, which will add security to the protocol in case of casualties. A portion will also contribute to the quarterly burn that will be detailed in due time.

10. Unlock & Vesting:

To incentivise long-term investments into Hatom , an unlock mechanism and vesting period have been implemented. This implementation aims to reflect the dedication, engagement, and commitments of all partners involved in Hatom's ecosystem. You can find below a clear and detailed token vesting schedule :

Token	Total Supply in %	Lock Period	Vesting Period	Remarks
Public Sale	10	-	3 months (monthly release)	Linear release of 33.33% per month
Private Sale	20	-	24 months (quarterly release)	5% on TGE followed by 8 quarterly releases of 11.875%
Ecosystem	20	-	36 months (quarterly release)	5% on TGE followed by 12 quarterly releases of 7.916%
Treasury	20	12 months	24 months (quarterly release)	8 quarterly releases of 12.5%
Community	18	-	36 months (quarterly release)	5% on TGE followed by 12 quarterly releases of 7.916%
Team	10	12 months	48 months (quarterly release)	16 quarterly releases of 6.25%
Advisory Shares	2	6 months	24 months (quarterly release)	8 quarterly releases of 12.5%

10.1 Use of Funds:

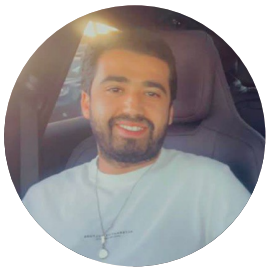
The following section covers the envisioned use of the Private and Public Sale funds by Hatom Labs LLC after deducting any applicable tax payments, fees, or setup costs:

Around 55% of the funds will be solely dedicated to the development of the Hatom platform and new services, which includes team expansion, research and development phases, and creation of new features, or any cost related to the upgrade, improvement, or implementation of new services.

Approximately 35% of the funds will be reserved for the security aspects of the platform which includes security audits and monitoring of the platform and its services.

About 10% of the funds will be assigned to the Marketing side of the project, which includes but is not limited to ads, events, promotions, and diverse actions aimed to increase the platform's popularity and expand its community.

11. Team Summary:



Oussa Guennouni
Co-CEO & Chief Marketing Officer

Ahmed Serghini
Co-CEO & Chief Operating Officer

Federico Caccia
Technical Advisor

Franco Cucchiero
Head of Technical Team

Soufiane El Mouatassim Billah
Chief Development Officer

Carlos Alvarez
Senior Blockchain Developer (Solidity)

Pablo Altamura
Senior Blockchain Developer (Rust)

Ramiro Vignolo
Senior Blockchain Developer (Rust)

Francisco Baralle
Web3 Solution Integration Engineer

Ariel Chang
Project Manager

Manual Quality Assurance

Senior Frontend Engineer

3D Designer

2D Designer

Our team members have attended the most esteemed entities :

LSC London · Manchester 1824 The University of Manchester · WPP · TESCO · pwc · spotbusiness · Founder Institute · Colas Rail · NERVOS · Terrae · Cardiff University Prifysgol Caerdydd · favforme Crowdfunding Solidario · UBISOFT

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