

Lepasa Whitepaper (V1)

A blockchain based virtual world

Ashish Agarwal

Alok Joshi

Introduction -

Lepasa is a mythological virtual life conceptualised by team of artists and engineered by blockchain enthusiasts. The vision is to establish an ecosystem that allows users to create, experience, and monetise their content and applications. Every piece of creativity in Lepasa is an NFT token (ERC-721) and always owned by its holders on ethereum blockchain , giving them full control over wherever and whatever they want to use it for. Creature is a non-fungible, transferrable, scarce digital asset stored in the Ethereum smart contract.

Recent times have gathered huge interest of people in virtual worlds, for both leisure and experience.

Unlike other virtual properties, Lepasa is not controlled by a centralised organisation. There is no single authority with the power to modify the rules of the software, contents, economics of the tokens, or prevent others from accessing it.

This document explains the ideology, technical establishments, and economics of Lepasa.

Ideology -

The emergence of large social media platforms, such as Facebook and Tiktok have allowed hundreds of millions of users to gather, interact, share content, and play games. All of these platforms are controlled by centralised organisations. Lepasa aims to establish a platform that allows its content creators to own and capture the full value of their contributions.

The adoption of crypto assets is still in early stage, blockchain based infrastructure makes it robust for creators and holders. Since then, While blockchain infrastructure, spearheaded by Ethereum, It is easier and stabled for developers to build safer applications over Lepasa.

Blockchain technology makes virtual reality more countable and logical business opportunity. There can be infinite possibilities and imaginations.

The Vision -

The vision of Lepasa, is to create a mythological world that habitats beautiful legendaries. Which will offer a social experience with an economy driven by layers of land and unique creatures ownership, with content distribution. Developers will be able to create applications on top of Lepasa, distribute them to users, and monetise them.

In the future project may have possibilities to implement peer-to-peer communications, a scripting system for interactive content, and a system of cryptocurrency payments for in-world

transactions. A communication layer for social experiences, providing positioning, postures, voice chat, and more; This can be achieved with a P2P network. The scripting system is the tool that land owners can use to describe the behaviour and interactions of 3D objects, sound, and applications running on land blocks.

The planned zones and their capability of development on top of land will make Lepasa land blocks unique. Every land block would be defined with a unique address with devoted characteristics of the area. This will help for spatial discovery of new content and the creation of a special theme. Blocks in Lepasa have a fixed amount of adjacencies. Additionally, the content of adjacent blocks can be seen from a distance. For content creators, the establishment of zones provide access to targeted traffic; for end users, it enables discovery of themed experiences. Users can travel through neighbourhoods and interact with applications that they stumble upon. Developers can acquire users by purchasing land in high-interest areas. This will allow secondary markets to develop around land ownership and rentals, as is already happening on another virtual world projects.

In-world Economy -

Lepasa's value proposition to application and game developers is that they can fully capitalise on the economic interactions between their applications and users. To allow those economic interactions, the platform would allow three things to be traded: crypto tokens, digital goods, and services.

A core system can be integrated that allows global, instant, and cost-effective settlements between any two users on the internet.

Possible Use Cases -

Applications & Games

The scripting language would allow to develop the applications, games, gambling, and dynamic 3D scenes and to handle a wide range of capabilities, including creating objects, loading textures, handling physics, encoding user interactions, sounds, payments, and external calls, among others.

Advertising

Brands may advertise using billboards near, or in, high-interest land blocks to promote their products, services, and events. Some neighbourhoods may become virtual versions of prominent locations for advertisers because of high interest of users.

Additionally, brands may showcase products, services and create shared experiences to engage with their audience.

Digital Collectibles (NFT)

We expect users to publish, distribute, and collect rare digital assets issued by Lepasa and the other blockchain projects by their creators. Just as it occurs today in other virtual worlds or through online forums, these digital assets would be traded inside this world through the scripting system and be backed by the aforementioned naming system.

Socialising

Groups that currently gather in online forums, chat groups, or even other centralised multiplayer games could port their communities into Lepasa. Offline communities could also find in Lepasa a space to gather and interactions. For example Facebook has large number of users from around the world and it gives them ability to create groups, applications and sub platforms, where they interact for their objectives. Similarly in Lepasa users should have even better opportunities to explore.

Tourism

Virtual Tourism is something that has a strong future. When artists across the globe can inhabit their imaginations on Lapasa platform, it brings possibilities even for school students and researchers to visit Lepasa for learning, training and adventure.

E-Commerce

Online shopping on websites and mobile are very well established to the core of every corner across the globe, Possibility of large number of Lepasa habitants can inspire global sellers to sell real stuff to the users by their virtual store on the platform. Other virtual world games have witnessed this already.

NFT Overview -

Non-Fungible Token is new and exciting product in luxury market. Since crypto community is blessed in monetary terms, But the current offerings are not enough mature to monetise the market.

NFT is in its early stage in lot of aspects. And there are many strong use cases for potential business in current situation ie.

A. Art

B. Virtual Land

C. Gaming

D. Animated Collectibles

These four categories are considered most promising being NFTs and In the future Lepasa shall serve all of them.

Technology & Architecture -

The proposed protocol has 3 divisions.

1. Registry Layer - This layer records permanent data of land owners and their content.
2. Content Layer - Here it brings assets built on top of the land block using decentralised systems.
3. P2P Layer - Facilitates developer's, land owner's users to interact with each other with various channels like text & voice chat.

Land ownership is recorded at the registry layer, where land content is referenced through a hash of the file's content. From this reference the information can be downloaded from IPFS. The downloaded file contains a description of objects, textures, sounds, and other elements needed to render the particular scene. It also contains the URL of a rendezvous server to

coordinate connections between P2P users that are exploring the tile simultaneously.

Registry Layer

Ethereum smart contract (ERC-721) to maintain a ledger of ownership records for land blocks. These non-fungible digital assets can be called as LAND: each LAND has unique (Direction, Zone#,Land#,) coordinates, an owner, and a reference to the content description file, which encodes what the landowner wants to serve there. Lepasa clients will connect to the Ethereum network to fetch updates to the state of the LAND smart contract.

LAND is claimed by LEPA, a fungible ERC-20 token of fixed supply. And every swap burns LEPA to create scarcity of the token. This token serves as a proxy for the cost of claiming a new land block.

Content Layer

Lepasa uses a decentralised storage system to distribute the content needed to render the scene. For each block that needs to be rendered, a reference to a file with the description of the block's content is retrieved from the smart contract meta data. As of today the Inter-Planetary File System (IPFS) that provides a mature solution for the requirements, shall be used.

This decentralised distribution system allows project to work without the need of any centralised server infrastructure. This allows the world to exist as long as it has contributors distributing

content, shifting the cost of running the system to the same actors that benefit from it.

However, hosting these files and the bandwidth required to serve this content has costs. Sooner, this infrastructure cost can be covered by the use of protocols like Filecoin. Until this technology becomes mature. The sale of LEPA shall cover these costs over the period.

P2P Layer

Peer-to-peer connections are required to provide interactions between users, as well as programmes that the landowner wants to run inside the block. To coordinate the bootstrap of peer-to-peer connections, landowners will have to provide rendezvous servers.

The maintenance of these servers can be incentivised the same way as content servers. When lightweight protocols like STUN13 can cover the functionality required from the server, the costs would be fairly low.

The social experience of users in Lepasa will include avatars, the positioning of other users, voice chat, messaging, and interaction with the virtual environment. The different protocols used to coordinate these features can work on top of existing P2P solutions like Federated VoIP or WebRTC.

To initiate with -

Since Lepasa has been conceptualised by the team of artists, we propose to offer uniquely designed mythological fantasy collectables as NFT against LEPA token. These NFTs are stored as

ERC-721 token on ethereum blockchain and can be integrated into other blockchain projects. Lepasa's value proposition to NFT holders is that they can fully capitalise on the economic interactions on several NFT trading platforms.