

## **AR/VR Liberland white paper v1.0**

**NOTE: KEY DISCUSSION POINTS FROM OUR MEETINGS HAVE NOT YET BEEN INTEGRATED INTO THE WHITEPAPER, AND ARE THEREFORE INCLUDED IN THIS DOCUMENT AT THE END. THE MOST RECENT DISCUSSION POINTS WILL BE ADDED SHORTLY HERE:**

**[https://docs.google.com/document/d/1-IMxJinMGkRIOyr\\_8b33n2JosgHUdc5dvcvlsGu0dGg/edit?ts=5ee3c3ea](https://docs.google.com/document/d/1-IMxJinMGkRIOyr_8b33n2JosgHUdc5dvcvlsGu0dGg/edit?ts=5ee3c3ea)**

# CONTENTS

## 1. Vocabulary

## 2. Introduction

- Metaverses
- Liberland
- VR/AR Liberland
- Product: Cyber Space Urban incubator

## 3. Market overview

3.1. Current landscape

3.2. Potential clients

3.3. Competitive landscape

## 4. Finance

4.1. Incomes for participants

- Decentralized marketplaces
- Land and properties price growth
- Governance rights
- Digital “twin” assets

4.2. Public land offering (ILO)

4.3. Merit tokens

4.4 Marketplaces

## 5. RoadMap

## 6. Partners

- Who are the partners?

- What partners get?

## 7. Governance

- Land-based voting
- Tokens-based

## 8. Technology

- VR
- Online

## 9. RoadMap

## 10. Contacts/Feedback

## 1. Vocabulary

**Blockchain** - a form of peer-to-peer decentralized database, stored in the same state at different multiple computers, called nodes on a public network.

**Cryptocurrency** - digital assets with properties of fiat money, which are stored and transferred using blockchain technology

**DAO** - Decentralized Autonomous Organization, which governance is performed with usage of blockchain technology.

**Digital Twin** - exact copy inside the virtual reality of the real world assets, which can be associated with real asset ownership through blockchain as a property registry.

**DT Marketplace** - market for digital twins, as a marketplace of any type of goods through its tokenization and sale through blockchain.

**NFT** - non-fungible token, a token, which has unique properties. NFT can't be divided in parts and stored in stacks. NFTs are not interchangeable.

**Decentralization** - in blockchain it is usually assumed as removal of the decision-making centers in order to make the system more stable, efficient and fair for the participants.

**DeFi - decentralized finances**, a technology which represents a transfer of financial services and instruments (such as banks, exchanges, shares etc.) to blockchain.

**Smart-contract** - a piece of code, which is written in blockchain and executed simultaneously by all blockchain nodes.

**Dapps** - decentralized applications (software), which represent one, or more smart-contracts with certain functionality as an App (application).

**ERC20** - token standard on Ethereum blockchain, which uses financial transactions as a cryptocurrencies. ERC20 tokens usually have no restrictions from their contract owners/creators for transfer, and can be divided in parts and accumulated.

**ERC721** - a token standard on Ethereum blockchain for NFT, which allows to store graphic and text information. It is used as property ownership certificate, or can be used as a digital passport etc.

Note: these are Ethereum tokens, but Vit wants to use EOS. EOS and Cardano are the next generation Ethereum ("blockchain 3.0"). Also, there are security issues with ERC721, which has thus far been primarily used to trade the digital collectibles "Cryptokitties". -Daniela

**Metaverse** - virtual reality space for interactions and communication of its users with properties of the offline world such as housing, transportation, business and participants' interactions between each other.

**Token** - cryptocurrency, which is built on top of blockchain with another basic cryptocurrency by usage of code logic implemented as a smart contract

VR - virtual reality

AR - augmented reality

## 1. Introduction

- **Metaverses**

The term "Metaverse" was coined in Neal Stephenson's 1992, who envisioned virtual universes (as many other tech) in his science fiction novel *Snow Crash*, where humans interact with each other and software agents through avatars, in a three-dimensional space that uses the metaphor of the real world.<sup>[3]</sup>

<https://www.tor.com/2011/04/14/neal-stephensons-snow-crash-92s-eerie-cyber-prophet/>

The concept was made famous under another term, cyberspace, which first appeared in the short story 'Burning Chrome' by William Gibson (*Omni*, July 1982) and was a central theme in his 1984 groundbreaking novel, *Neuromancer*.<sup>[5]</sup>

Currently metaverses mostly had a goal to overcome any offline lands restrictions and therefore now are the closest to the science fiction. However, now it is a time to pose a reverse question - can virtual and digital reality actually affect offline communication? Is it possible to set up social networks contacts, introduce property rights, which will

In recent coverage by Forbes several very important points of the Metaverses are outlined, such as communications, economy, culture

<https://www.forbes.com/sites/cathyhackl/2020/07/05/the-metaverse-is-coming--its-a-very-big-deal/#2ee8a989440f>

Several characteristics of metaverses are suggested by Matthew Ball

(<https://builtin.com/media-gaming/what-is-metaverse>):

- The metaverse is always on; it's experienced live and in real time
- It can host any size audience
- It has a fully functioning economy
- It spans across platforms, as well as digital and physical realms (think augmented reality)
- It allows digital assets to be carried across platforms
- Its experiences and content will be created by individual users and huge corporations alike.

In VR Liberland we introduce “digital twin” concept. There is an increasing demand in the blockchain community to integrate ownership rights for assets on blockchain and offline property rights. Liberland is the best place to do it. Right from the start Liberland is built from scratch and can create 100% crypto and blockchain friendly countries by design.

In 2020 we observe an explosion of the Metaverses on blockchain and so called Initial Land Offerings (ILOs). ILOs is a way of fundraising through tokenization and token sales of the future properties and stuff (like land, buildings etc.).

“Digital twin” concept represents a large opportunity for e-commerce and business processes gamifications through tokenization and digitalization of all sorts of assets, properties and services through blockchain-based ownership.

## **Metaverses and blockchain economy**

- **Liberland**

The Free Republic of Liberland (hereinafter “Liberland”) is a sovereign state located between Croatia and Serbia on the west bank of the Danube River. On some maps, this area is referred to as “Gornja Siga.” The nearest towns are Zmajevac (Croatia) and Bački Monoštor (Autonomous Province of Vojvodina, Serbia).

This parcel of land came into existence due to a border dispute between Croatia and Serbia. This area is not claimed by Croatia, Serbia, nor any other nation or private entity. Furthermore, it remained unclaimed since the dissolution of the Socialist Federal Republic of Yugoslavia in 1991. In fact, for many decades, it has been uninhabited and no claim was ever made to this piece of land. It was therefore Terra Nullius – a no man’s land – until Vít Jedlička and Jana Markovicova proclaimed it as the Free Republic of Liberland on 13 April 2015. Liberland has set its boundary with ample margin from neighbouring countries to ensure that it does not infringe upon the territory of Croatia or Serbia. The total area is approximately 7 km<sup>2</sup> and is now the third smallest sovereign state, after the Vatican and Monaco. (For more information regarding the border dispute between Croatia and Serbia see the [article on Wikipedia](#).)

Currently, Free Republic of Liberland is 100% friendly to blockchain and cryptocurrencies. Liberland endorses the usage of cryptocurrencies by its citizens, endorses the management of the companies through DAOs and free securities token sales. Recent developments in token formats has allowed the emergence of the whole industry of metaverses on blockchains, which use such tokens format on Ethereum as ERC721 and ERC1155.

- **AR/VR Liberland**

Virtual reality Liberland is a metaverse, which represents a copy of Liberland. VR Liberland is a case of realistic modelling of de novo design of the communities, which can be applied to complex modelling of architecture, communication, commerce, entertainment, social life etc. of the projected living spaces like districts, cities, or even the whole countries. We create virtual representations of what is then implemented in reality. In contrast to other Metaverses, the very goal

of VR Liberland is to make it as realistic as possible - laws of physics, economics and psychology will be reflected and can help to optimize efficiency of the implementation offline.

The goal of Virtual Liberland is also to model a governance and policies model of the prospective country in the virtual reality in order to transfer them to the offline world, and boost the support for the Free Republic of Liberland and its global diplomatic recognition. Our long-term is creation of the VR/AR model as a tool for research/modelling for the owners/organizers and gamification of the interaction for blockchain businesses.

VR Liberland property rights will be secure by the same types of technologies, which will be then used for management of the property rights in the Liberland itself.

- **Digital twin concept**

For the first time in VR and AR history we construct a Metaverse, which will have a tight connection to the real world and basically represents a digital twin, which is a copy of the real land in virtual reality. We used the case of Free Republic Liberland as a demonstration case for the future scalability of this project.

### ***Real laws of physics***

Our primary goal here is to develop the real land and to model the future architecture, governance, social, etc. solutions as good as possible. Therefore the real-world physics laws will be applied to Liberland VR metaverse. No, sorry, you won't be able to fly in VR Liberland, unless you buy flyboard from Franky Zapata, or jet pack from Gravity Industries Ltd.

### ***Avatars as digital twins***

It is very crucial that every part of VR Liberland Life is connected to the offline life as tight as possible and in reverse. We need to model a new state after all.

### ***Marketplace for digital twins***

Not only architectural projects, or land can be sold in our marketplace.

In white paper I elaborate now around digital twin concept. What is unique about this project is that it should represent offline world as real as possible and even avatars should represent the copies of the real person with same weight, height etc. parameters, so that real world physics will be reflected in VR Liberland and can be easily transferred to the real Liberland, when it is recognized. Also digital twin concept can be introduced into any sort of goods and a market for real goods can be constructed through escrow mechanisms and P2P through digital ownership rights certificate. We can spread these certificates through partner marketplaces. Let's say I am buying an iPhone from some marketplace (Amazon for example), if this marketplace partners with us, then buyer gets digital certificate in the form of NFT and he can sell it on our marketplace. In order to secure the deal he puts the value of this iPhone as collateral. Anyone, who purchases this NFT (digital right certificate) can claim the iPhone and the seller of the certificate should ship it, or he will lose his collateral. This will help us to: 1. Enlarge digital twins concept 2. Create basis of the marketplace, trade and properties rights protection through blockchain for the Liberland, when it is implemented. Also this will generate more profits for our marketplace.

### **3. Market overview**

#### **3.1. Current landscape**

- Problem

Visualization and modeling of the area/space developing, architecture

- Solution

- Market validation

- Market size

#### **3.2. Potential clients**

#### **3.3. Competitive landscape**

### **4. Finance**

#### **4.1. Incomes for participants**

- **Decentralized marketplaces**
- **Land and properties price growth**
- **Governance rights**



- Digital “twin” assets
- Advertising

#### **4.2. Budget for project development**

#### **4.3. Initial Land Offering**

### **Decentralized marketplaces**

Currently many marketplaces for digital goods and services are available on blockchain (primarily Ethereum blockchain), such as <http://rarible.com>, <https://opensea.io> and <http://marketplace.decentraland.org/>.

The goal of digital twin assets is to introduce the blockchain properties rights far beyond the estate/land ownership, but also to design mechanisms for decentralized P2P marketplaces for any sorts/types of goods.

#### **Realty marketplaces**

- Land
- Properties
- Architecture projects

Game participants will be able to do all sorts of operations with reality like buying, selling, renting, developing and managing it. It is very important that digital twins concept means that exactly the same procedures will be used for the VR Liberland marketplace and for the real Free Republic of Liberland, once implemented. All real physical laws define the requirements for the buildings and materials, used for the construction. In VR Liberland though the construction speed is expected to be different, which may help us to speed up all the processes in our models. We expect to give market development to the growing community of our users and partners. We are going to make open framework for any business, which can leverage from offering its services and its digital twins in VR Liberland.

Let's say we have a producer of furniture, who wants to advertise its services in VR Liberland and actually make an additional income through sales of its products through tokenization. Then they basically can form an industrial partnership with corresponding partners like construction company, which will perform construction both in VR and then in real (offline) Liberland.

So the “Digital twin” concept can go more far beyond the realty and properties development and management.

Users can create and sell digital items "Digital twin" items can be used as a claiming right for the offline world assets.

#### Digital certificates redemption

- The user places collateral and issues a digital certificate, which represents claiming right over the offline purchase.
- Two users meet offline (or anyhow perform the offline sale) and after the sale, digital certificate is burned and collateral is returned to digital certificate issuer.
- Size of the collateral. Size of the collateral is defined by digital certificate issuer and is specified in stablecoins, or ETH. Issuer defines himself the size of the collateral and it is attached to the information in the NFT certificate. Therefore buyer of the digital certificate takes upon himself the risks of th
- Then this digital certificate
- Such mechanism allows tokenization of the standard offline goods.

#### Land and properties price growth

#### Governance rights

#### Advertising

##### SDKs and APIs

Advertising can be another source of income for the business in VR Liberland. Blockchain-friendly modern thinking audiences from the IT industry can be attractive for many potential advertising partners.

We are not going to tokenize and digitalize everything, but rather provid SDK and programmatic opportunities for any business to create frameworks for digitalization and tokenization of their products and services.

### 3.2. Public land offering (ILO)

### **3.3. Merit tokens**

Merit is an internal currency of the Free Republic of Liberland. It is used for purchases of all digital twin goods and services inside VR Liberland, which basically can represent any service, or goods outside of VR Liberland. Merits are also used as governance tokens for VR Liberland and Free Republic Liberland as well. As far as VR Liberland is a digital twin of Free Republic of Liberland, they have the same currencies and the same governance as well as properties registries.

### **3.4 Marketplaces**

Communication

Communication inside the Virtual Reality Liberland is performed using decentralized messaging system such as status messenger, dchat, or

#### **Roadmap**

Stage 1.

Concept of Liberland development and Roadmap are published

Step 2. VR Liberland as digital twin is constructed with possibility to travel inside it

Step 3. Land sales private round 1 starts

Step 4. Engine for construction of the objects is created. Engine uses blueprints. Blueprint represents an NFT token, which can be used for construction of anything in Liberland. Bluechip has characteristics of the real world object - plot of land, size of any goods etc. So, once bluechip is purchased, its owner can plug and play it in any part of the Liberland - on his own plot, or in

Step 5. Virtual Liberland develops its governance and legal system, which then will be implemented in the offline Liberland therefore representing 100% digital twin in everything - laws

For example -

Speed of movement in Free Republic of Liberland is defined by the transportation usage:

- By feet
- Boats
- Cars
- Helicopters
- Hoverboards

The main point is that you can own something in Virtual reality only in case, if you own it in the offline realty.

We invite different businesses to use Liberland marketplace for providing NFT certificates to their customers.

## **Partners**

### **Project initiator**

Liberland ltd.

### **Prospective partners:**

Zaha Hadid architects → <http://improbable.io/> : cyber-physical 3D platform + design services

Arch Agenda (<https://archagenda.com/>) → (<https://www.bullblockchainlaw.com> )

Voronkov Ventures ltd. → Galt Project ([galtproject.io](http://galtproject.io)) : smart contracts, block chain

Vit / Liberland - fund raising, being awesome.

Online marketplaces, interested in “Digital Twin” concept

Partners are businesses, who want to sell a digital twin in VR Liberland.

The point is that we are not going to provide any stuff in VR Liberland - it will be given only for real purchases of real goods in our partners network.

This is costly, yes, but we expect that our investors will have incomes above average and that this will increase the value of AR Liberland.

How does it work? For example, you buy a hoverboard on the eBay, or Amazon.

If eBay and Amazon become partners of Liberland, then once you buy

References:

<https://medium.com/sandbox-game/land-token-economics-1efe442eb49>

<https://dclplazas.com/cryptovoxels/cryptovoxels-whitepaper/>

We should not think of this as a general marketplace, we are not trying to be Amazon or Alibaba on blockchain.

Plots can be combined into estates.

Plots can be purchased during LAND sales.

## ZHA contributions and cost table

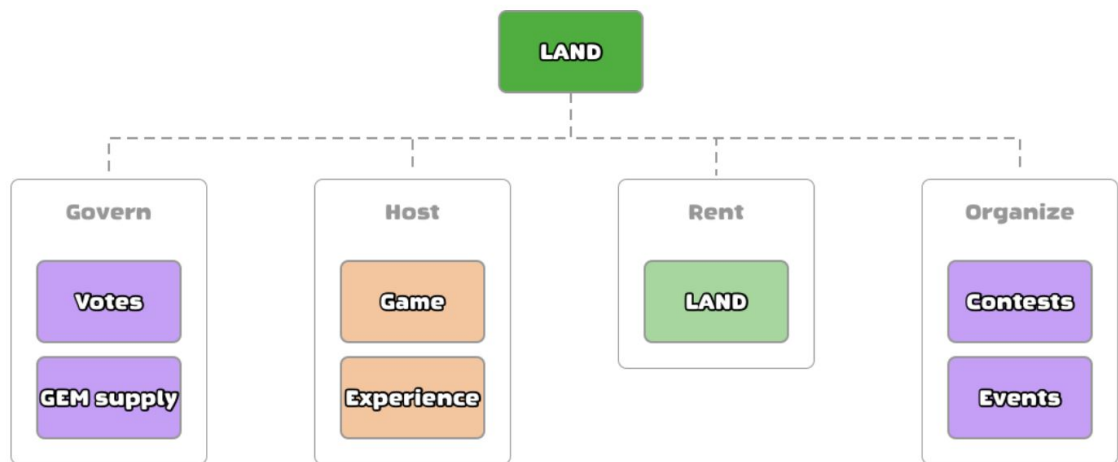
STAGES	A Feasibility / marketing / brief dev writing			B MVP			C launch in liberland, early users and refine			D application to other land owners and large developments/townships								
months	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<b>ZHA DESIGN SERVICES</b> <i>creation of parametric city and its Arch &amp; urban parts</i>	3D sketches for masterplan options including: - initial voxelisation - initial CBD layout - schematic design of HQ of big ticket investors - marketing materials - guided design exploration at AADRL			creation of digital assets suitable for 3D platform - masterplan scale assets each with multiple options : Infrastructure such as road-types, landscape such as park-types and public squares, - building scale assets each with multiple options : office types, residential types, retail types - regulatory framework / rulesets			refinement of services from previous stage			TBC								
ZHA design Costs £																		0
<b>ZHA TECH SERVICES</b> <i>creation of 3D augmented reality infrastructure for marketplace</i>	Proof of concept 3D platform for CBD site with pilot urban innovation seed buildings - 4 user types - developer, tenants, architect, contractors - curated use cases - outlook of potential other use cases			Coordination & supervision of : - out-sourced MVP implementation of 3D platform with 3 major components (a) Participatory components : end-user facing, interactive info display and choice registration (b) Industrial construction component : expert-facing computing construction feasibility & regulatory compliance (c) Interaction of 3D platform with blockchain and crypto-currency secure services.			refinement of services from previous stage			TBC								
ZHA tech Costs £										0								0
<b>Total ZHA costs £</b>	0									0								0
<b>SUB-CONSULTANTS</b>	consultants for - private cities policy & regulation - 3D graphics and platforms - blockchain for AEC			consultants for - private cities policy & regulation - 3D graphics and platforms - blockchain for AEC			consultants for - private cities policy & regulation - 3D graphics and platforms - blockchain for AEC			consultants for - private cities policy & regulation framework - 3D graphics and platforms - blockchain for AEC								
Total subconsultants *assumes fully loaded tech employees = 10K £/mo appropriate % reductions can be applied if development is outside EU. £																		0
																		0

STAGES	A			B				C		
	Feasibility / marketing / brief dev writing			MVP				launch in liberland, early users and refine		
months	1	2	3	4	5	6	7	8	9	10

<p>ZHA DESIGN SERVICES</p> <p>creation of parametric city and its Arch &amp; urban parts</p>	<p>3D sketches for masterplan options including</p> <ul style="list-style-type: none"> <li>- initial voxelisation</li> <li>- initial CBD layout</li> <li>- schematic design of HQ of big ticket investors</li> <li>-marketing materials</li> <li>- guided design exploration at AADRL</li> </ul>	<p>creation of digital assets suitable for 3D platform</p> <ul style="list-style-type: none"> <li>- masterplan scale assets each with multiple options : infrastructure such as road-types, landscape such as park-types and public squares,</li> <li>- building scale assets each with multiple options : office types, residential types, retail types</li> <li>- regulatory framework / rulesets</li> <li>etc</li> </ul>	<p>refinement of services from previous stage</p>
<p>ZHA design Costs £</p>			
<p>ZHA TECH SERVICES</p> <p>creation of 3D augmented reality infrastructure for marketplace</p>	<p>Proof of concept 3D platform for CBD site with pilot urban innovation seed buildings</p> <ul style="list-style-type: none"> <li>- 4 user types - developer, tenants, architect, contractors</li> <li>- curated use cases</li> <li>- outlook of potential other use cases</li> </ul>	<p>Coordination &amp; supervision of :</p> <ul style="list-style-type: none"> <li>- out-sourced MVP implementation of 3D platform with 3 major components</li> <li>(a) Participatory components : end-user facing, interactive info display and choice registration</li> <li>(b) Industrial construction component : expert-facing computing construction feasibility &amp; regulatory compliance</li> <li>(c) interaction of 3D platform with blockchain and crypto-currency secure services.</li> </ul>	<p>refinement of services from previous stage</p>

SUB-CONSULTANTS	consultants for - private cities policy & regulation - 3D graphics and platforms - blockchain for AEC	consultants for - private cities policy & regulation - 3D graphics and platforms - blockchain for AEC	consultants for - private cities policy & regulation - 3D graphics and platforms - blockchain for AEC
-----------------	--	--	--

### Initial Land Offering



Land ownership can be used for promotion of goods and services.

How Virtual Liberland is different from other MetaVerses?

There are several differences.

“Digital twin concept”

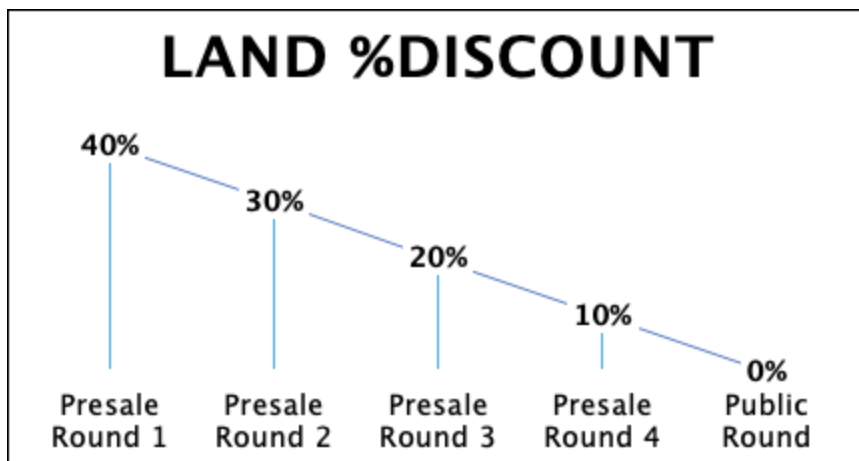
What is Digital Twin?

Digital twin an object in Virtual reality, which is exact representation of real offline object. In the case of the Free Republic of Liberland, “digital twin” relates to multiple categories, such as:

- Plots of land
- Architecture projects
- Design landscapes
- Any other object in virtual reality, which represents ownership rights for the real objects offline. Free Republic of Liberland uses NFT certificates as a right to claim real property and thus all NFT's are minted in Free Republic of Liberland only as real ownership certificates guarantees

Major difference: in Virtual Liberland, the land is bound to real land in Liberland - land in VR gives a 99% discount for purchase of land in actual Liberland, once it is recognized and this right to discount exclusively bound to digital twin owner.

1 sq m price = 100 usd





<b>LAND Sales<sup>1</sup></b>	<b>Avg LAND price (USD)<sup>2</sup></b>	<b>% of Discount/round<sup>3</sup></b>	<b>Max # of LANDS<sup>4</sup></b>	<b>% of LANDS for Sale<sup>5</sup></b>	<b>%LANDS<sup>6</sup></b>
<b>Presale Round 1</b>	\$28.80	40%	3,096	2.50%	1.86%
<b>Presale Round 2</b>	\$33.60	30%	6,192	5.00%	3.72%
<b>Presale Round 3</b>	\$38.40	20%	12,384	10.00%	7.44%
<b>MoonSale</b>	\$38.40	20%	7,254	5.86%	4.36%
<b>Presale Round 4</b>	\$43.20	10%	18,576	15.00%	11.16%
<b>Public Sale</b>	\$48.00	0%	76,725	61.95%	46.09%
			<b>123,840</b>	<b>100.00%</b>	<b>74.39%</b>
<b>Sandbox LANDs</b>			16,704		10.03%
<b>Reserve</b>			25,920		15.57%
<b>Total Supply</b>			<b>166,464</b>		<b>100.00%</b>

Each of our LAND sale rounds will feature a sliding percentage discount scale. This first sale offers the best discount at 40% and the discounts on LAND parcels will decrease by 10% per round until the release of our public round, which will last until all LANDS are sold.

#### **LAND ownership will allow you to:**

- Secure desirable locations from the finite amount of LAND in The Sandbox
- Participate in gameplay in The Sandbox
- Host games or experiences on your LAND
- Earn SAND by hosting gameplay or renting the LAND
- Organize businesses, entertainment, events on your plots and estates

- Participate in Liberland governance

---

NOTES BELOW FROM OUR MEETINGS HAVE NOT YET BEEN INTEGRATED INTO THE WHITEPAPER. SOURCE FILE:

[https://docs.google.com/document/d/1-IMxJinMGkRIOyr\\_8b33n2JosgHUdc5dvcvlsGu0dGg/edit?ts=5ee3c3ea](https://docs.google.com/document/d/1-IMxJinMGkRIOyr_8b33n2JosgHUdc5dvcvlsGu0dGg/edit?ts=5ee3c3ea)

**June 12 2020**  
**(Notes by Daniela)**

**Document creators:**

- Vit Jedlicka (Liberland)
- Andrey Voronkov (Liberland)
- Ivan Podmasko (Emery Capital)
- Shajay Bhooshan (Zaha Hadid Architects)
- Daniela Ghertovici (ArchAgenda LLC)

**June 12 Zoom Meeting Notes:**

- Shajay: EPIC Games "Unreal Engine 5" (creators of Fortnite)  
<https://www.unrealengine.com/en-US/blog/a-first-look-at-unreal-engine-5>
- Shajay: <https://improbable.io>
- Andrey: ZHA as Lead Partner of this platform
- Vit: Produce: (1) Letter of Intent (list what we want from the platform) (2) List of target investors to fund the platform & initial designs
- Andrey: VR coupled with real implementation of Liberland as a state, powered by blockchain.
- Shajay: 2 step process: (1) Digitally create land/parcels and first few buildings (2) Offer land as part of an IPO

- Shajay: **Crucial differentiator: “Digital Twin” optimized for representing digital assets vs. Digital Metaverse optimized for online economy with participation of a lot of people. (Where on this spectrum will Liberland metaverse be?)**
- Ivan: Existing worlds are built to include persons and are accessible through browsers (“society in VR”). Technical quality is very important (implement as digital twin).
- Daniela: Perhaps a combination of the two (digital twin and participatory metaverse) with high-resolution “rooms” within the metaverse to showcase digital assets.
- Ivan: Market depth: Tie VR to the real world, and make the VR world much bigger. Issues with decentralized platform with regard to foreign land transactions.
- Shajay: with the advent of Covid, increasingly VR is used as a “shop window”, showcasing to sell.
- Andrey: the main goal is to bring VR to real life transactions
- Shajay: Formulate a timeline. As an example, Prospera took a year to plan. ZHA is excited about participating, but also needs to clarify business interests.
- Shajay: Not speaking strictly on behalf of ZHA, but just commenting: Discuss the political “optics” for the platform. Perhaps it is not strictly allied with “free private cities” as defined by Titus, but broader scope considering the diversity of real-world conditions. Consider the complexities of real-world projects.
- Shajay: Experiments have been going on in academic settings for many years. See Patrik’s essay from 20 years ago.
- Daniela: Let’s not present on July 18, but rather make a separate conference surrounding the topic of a new Blockchain powered VR Metaverse for architecture. We can invite some of the same speakers as the July 18 symposium. We can make the “unveiling” into a much bigger production than the July 18 symposium.

## **SB links**

### **UNREAL engine - digital twins**

[https://www.linkedin.com/posts/kenneth-pimentel-45b12b\\_wellington-city-3d-real-time-model-in-unreal-activity-6676405594175471616-oL\\_v](https://www.linkedin.com/posts/kenneth-pimentel-45b12b_wellington-city-3d-real-time-model-in-unreal-activity-6676405594175471616-oL_v)

## **DG link**

**Twitch TV (Amazon):** mostly for gamers, huge following “the next thing”

Twitch.tv <https://www.twitch.tv>

Twitch Prime: <https://twitch.amazon.com/tp>

**JUNE 19 2020**

**(Notes by Daniela)**

### **ZOOM MEETING NOTES**

- Shajay: Technology wise, we will use Epic’s Unreal engine (partially owned by Ten Cent)
- Shajay: Consider the community/popularity of the VR platform, to make it easier for people to use
- Vit: How much money will we need in order to launch?
- Shajay: How much did Decenterland have in seed money before their 2017 IPO?  
(Andrey to check) note: Decenterland raised \$26 million in 30 seconds! They have 12,000 active users, monthly transactions in the \$1 million range (was \$40/parcel and now \$200/parcel). Vit noted Somnium Space is much more expensive.
- Shajay: Stages: (1) Cost of platform seed (2) Constructing the metaverse. (3) Master-planning / parcels to sell (4) Some very well designed buildings.
- ZHA may do the initial effort at Current Market Cost + IPO Equity
- Shajay: Staged (1) Master-plan parceling, (2) Preparation/ consultancy on the encoded digital spect for the architecture (3) Consultancy on the marketplace (ie material supply chains), (4) Design of seed buildings. (See Shajay’s scenarios below)
- Shajay: Decenterland has its own proprietary tech, equivalent to Somnium
- Vit: Look at <http://conferomatic.com>. They are eager to work with Liberland. Their platform is a step up from Somnium Space. Less CPU consumption, works on multiple browsers. Vit will invite the CEO of this company to our next meeting.
- Daniela: Will invite Tyler Harttraft from “Bull Blockchain Law” (<https://www.bullblockchainlaw.com>) to the next meeting. He deals strictly in Blockchain real estate, gaming, and more. (Done)
- Shajay: The blockchain aspect (legalities and tech) have to be figured out by others, this is not ZHA’s area of expertise.

## FROM SHAJAY - PRELIMINARY ZHA SERVICE SCENARIOS - June 19, 2020

---

### Seed Phase - 4 Months: services/contributions

---

Proof-of-concept / feasibility study :

ZHA services : Strategy and technical consultancy / feasibility study for a cyber-physical city and its first city center

This would be similar to the studies we did for Roatan (5-6 sq km) including the more detailed study for crawfish rock (1 sq.km)

+ a proof of concept technical platform (like the Honduras Configurator but larger scale)

+ financial (based on crypto-currency) and legal platform ( based on block-chain) : this part will be taken care of by Vit and his partners.

This proof-of-concept can be used to raise further funds to fully develop the platform, including the master-plan of the city and the architectural designs of the city center buildings for target clients like tesla / ten cent etc. **Overall, I expect this phase to cost £500-1M\$** ; Vit seemed confident of raising private funds for this.

ZHA costs to be estimated on the basis of the effort on Honduras + digital infrastructure costs + outsourced technical developments. Typical indie-game development costs : \$XX ?

Potential partners : <https://improbable.io/>

Home - Improbable : Improbable acquires US-based games studio Midwinter Entertainment, developer of 'Scavengers' Insight: Nostos by NetEase. Explore a vast, breathtakingly beautiful new world - and fight to bring it back from the brink. Faster, more effective, more flexible game development. [improbable.io](https://improbable.io/)

### DG NOTE:

- **Per Shajay** this \$500k-1m figure is not a researched estimate; needs further study.
- **Andrey** agreed to look into Decenterland's seed \$ prior to IPO.

---

### Series A : services/contributions

- 
1. Development of architectural aspects of the platform/marketplace, and/or
  2. Master-planning services for cyber-physical city, and/or
  3. Design services to design cyber-physical buildings for the high-profile initial investors / target companies.

---

### IPO/ ILO

### Phase 3

---

Initial land offering to wider public via a auction mechanism, and subsequent opening of trading platform to wider audience. As a indicator, each parcel of land (100 sqm) on decentraland sells for 0.4-1.75 ETH / 100-300\$ and each land offering raises about \$200K; The initial land offering / Initial coin offering (ICO) by Decentraland in 2017 raised \$26M ( in 30 seconds), and currently has about 12K active users. Most land-parcels are selling \_\_\_\_\_ links  
: <https://medium.com/block-street-journal/cashing-in-on-virtual-parcels-of-land-46cd119d2216> s  
omnium-space is the other online realty metaverse :  
<https://medium.com/@SomniumSpace/road-to-secondary-land-offering-slo-2ce310323755>

### MESSAGE TO VIT FROM DANIELA

Andrey will finalize a list of potential investors for you this week, and also get started on a letter of intent.

Shajay just sent me a preliminary outline of various possible stages of involvement by Zaha Hadid (ie consultancy, master planning, design). It's very preliminary. Not costs, just outlines of possible services. He also said that when we know better what we are doing, he'll ask Patrik to join our meeting.

Daniela will invite the blockchain legal expert mentioned to our meeting next Friday.... will see if he is interested in getting involved on this team.

### MESSAGE TO VIT, ANDREY, IVAN FROM DANIELA

I just sent Tyler Harttraft at Bull Blockchain Law (<https://www.bullblockchainlaw.com>) articles and information about Liberland. He is very interested, and may be able to join us next Friday on Zoom.

@Vit I am looking at <http://conferomatic.com>. Looks very interesting. Shajay made a good point in that we should find a very established VR partner platform. He is going to look into this too. Keep in mind that most social VR platforms utilize very low resolution, and what we are talking about developing will most likely be a stand-alone VR engine, because the metaverse we are creating is much higher quality than anything out there at the moment. Definitely we will utilize the Epic Unreal 5 software, which Zaha Hadid Architects already uses on a regular basis. It will have spectacular results compared to anything I've seen in VR right now. Looking forward to our conversation next Friday. I sent out the google calendar invitation.

## JUNE 20 2020

### DANIELA NOTE:

- Our Metaverse should include bodies of water for **Seasteading**.
- The SEASTEADING INSTITUTE was established in 2008 in California.

- So far the architecture produced for these water-based societies is mediocre, but the movement is quite intriguing.
- FYI, **Titus Gebel** was a board member of the Seasteading Institute with **Peter Thiel** and **Patri Friedman**. (Peter Thiel is a German-American billionaire entrepreneur and venture capitalist. He is a co-founder of PayPal, Palantir Technologies and Founders Fund. We can probably get him interested in our project and appeal to him for contribution to seed capital, if we are able to pitch the metaverse as an opportunity to expand on Seasteading)
- **Links:**  
<https://www.seasteading.org>  
[https://youtu.be/jCTXGC\\_yIF4](https://youtu.be/jCTXGC_yIF4)  
<https://youtu.be/NReXVeD24zI>

## **JULY 10 2020 MEETING**

### **Zoom Meeting Notes by Daniela**

#### **PATRIK SCHUMACHER'S COMMENTS:**

- Project summary: Design a TOOL to help develop larger master plans in a new way, allowing the virtual process to be transparent, anticipating co-location synergies.
- The goal is to bring together key tenants to form bottom-up synergies: Incubator culture synergies, business synergies, co-living synergies, etc.
- This "tool/platform" is also good for district developments outside Liberland, SEZ's, free trade zones around the world, etc.
- Consider the Liberland prototype perhaps in the free trade zone
- THREE LAYERS OF CUSTOMERS:
  1. Initial Investors (buying shares)
  2. Real Estate Developers (picking up buildings)
  3. End-Users (tenants settling in, plan participators)
- Developers would see a digital world developing and purchase assets
- Development as a "dating site" for potential tenants (ie Tinder for real estate)
- Offer the platform to the Serbian government, setting up a free trade zone...
- Will this scenario give us enough motivation for real developments? Who will be the angel investors? How do we initialize? Mock up? Funding?
- Option if we cannot obtain sufficient funds for ZHA: Work out first through AADRL (will take longer than one month), as a resource to work through 3D modeling and thinking through the design problem. Essentially getting this tool "Liberland ready".
- Initial coin offering or land offering?
- Business opportunities: digital ownership certificates.
- Digital land registry: certification needed
- Digital twin involves the same registry for virtual and real Liberland

- ILO - enough to raise seed money
- Development work gives virtual marketing, co-location synergies (including AADRL contribution)
- ZHA will make the initial effort at cost, with the reward being something happening for real, plus equity/shares.

#### **DISCUSSION (Shajay, Andrey, Daniela, Ivan):**

- We need to develop:
  1. Business Plan (include roles and fees for every stage)
  2. Investment Database
- Shajay: Production Costs - early angel stage, seed stage, Series A stage, then land offering.
- Shajay: the concepts are the same as for Prospera: Make pixels, sell pixels, put whatever you want in the pixels. (Incorporation of design materials)
- Andrey: Galt Project - tokenize any part of building, virtual assets, etc. Tokenize incrementally.
- Shajay: Proof of Concept ZHA overall fee: \$250,000-\$300,000. Similar to other technologies. But: how guaranteed is the future work? Rather than offering just to private cities, it's less risky to offer to smaller scale developments that are actually happening.
- Consortium - clarify who are the partners and who are the consultants!
- Shajay: It should not be difficult to raise \$1-2M seed, \$6-7M valuation. The partners are strong with a lot of credibility.

## **JULY 17 2020 MEETING**

### **Zoom Meeting Notes by Daniela**

#### **SUMMARY OF LAST MEETING (Daniela)**

1. Determine roles and fees of every company in partnership: Liberland, Voronkov Ventures Ltd, Zaha Hadid Architects, ArchAgenda LLC.
2. Partners or Consultants: Bull Blockchain Law, Galt Project, Confer-o-Matic, Improbable... who else?
3. Offer the "tool/platform" to developers, free cities, special economic zones, etc
4. Concept is like Prospera: Make pixels, sell pixels, put whatever you want in the pixels.
5. Summary of Patrik's comments: A tool for developing master plans in a new way. Three layers of customers (initial investors buying shares, developers picking up buildings, end users/tenants settling in VR and reality (like a dating site for potential tenants, forming synergies online). Business opportunities (digital ownership certificates). Offer the platform to Serbian government. AADRL as a design resource. Will this scenario give us enough motivation for real developments?
6. Initial Land Offerings enough to raise seed money



## DISCUSSION (Vit, Shajay, Daniela)

- Shajay: The academic route: Exploratory time is needed. Design the territory and the kinds of cities that could emerge. Realistic policies.
- Phases/services/costs, technical design, sub-consultants.
- 18 months.
- Shajay's Spreadsheet: Costs for ZHA: Determine whether ZHA will do only design, only technical, or both? \$500,000 for technical work (cost only. Time). \$1M for both technical and design work, PLUS consultants. Plus equity/profit. Equity/profit depends on the valuation of the company. Opportunity cost as equity.
- Vit: This is within the expected price range. Main shareholder Liberland, percentages for the Partners, with 25% to investors.
- Shajay: Raise \$2M at \$8 valuation.
- Vit: Who develops and maintains the IT product? Internal or outsourced?
- Shajay: ZHA can supervise as CTO
- Vit: Build the platform with a small firm OR partner with a big player?
- Shajay: Confer-O-Matic seems capable, and Improbable has to offer the big data service. Form a core team PLUS critical strategic tech consultancy with big players.  
*Game developers analogy: Make a game for \$200,000 with small teams, get up to Series A (up to 10 months), sell to other cities and raise more capital. First 10 months design Liberland Proof-of-Concept, followed by other large developments and charter cities.*
- Shajay on Prospera in Honduras: The land is pixelated in 3D. Choose the number of pixels, choose air rights, occupation rights, exclusion rights, etc. Choose the subdivision of the house, all the way down to furniture. The 3D property is uniquely encoded NTF on blockchain. Prospera tech is browser based, it's no game technology as we want to use on our platform. For the master plan, we have to go into game technologies.
- Vit: How does the developer come in?
- Shajay: The developer gets pixels, and can upload his own options.
- Shajay: Divide Liberland into cubes, people choose cubes, each architect transaction is in the pixel level once one has the pixels. Developers and architects can buy pixels. ZHA can provide design guidelines.
- Shajay: Patrik is suggesting exploring in an academic setting for 3 MONTHS: Will it be a free-for-all zone, restricted, or hybrid? The semester starts in SEPTEMBER. Prep work in August by ZHA, the tech tool is somewhat ready since it was used in Honduras. This would be a combined effort in both Patrik's and Shajay's studios. For the school effort, \$1500 is needed for students to be supported by a technical assistant at AADRL. ZHA has to do the 3D sketches of the master plan, central business district etc. Students can get going independent of ZHA. (AADRL cannot provide promotional images to Liberland due to ownership of the student work by the Architectural Association. Copyrights belong to the AA. But ZHA can use the ideas that emerge in the studios. The goal is to generate an idea mix for master planning and policies.
- Daniela: Andrey developing a test tool with Galt Project (NTF tool)

- Vit's Concern: backlash from the community if they see a bunch of skyscrapers. We want green design, to embrace the national park. We need a super green development.
- Daniela: Ecologically sensitive design is a very typical requirement that architects address on almost every project. Here we would produce designs and images that convey the green strategy, and communicate the development as "super green".
- Shajay: ZHA takes into account the investor optics, produces risk-mitigating images (Shajay showed Prospera designs/renderings to make the point).
- Shajay: Start small, and over 10-15 years grow a city. Planning: let the ecosystem grow by itself. There is a "secret" development idea, but let developers develop their proposals. Focus on the green part of the public image. ZHA lays out the land in pixels, people can start trading, trees and roads...
- Shajay: ZHA will design some pilot areas for design attraction, "Seed Buildings" to set the tone of the design ambitions. ZHA needs 3 months upfront for marketing/ideas/feasibility, including the production of some marketing images. ZHA requires \$100,000 for this three month period, which represents COST.
- Vit: Using Napredak, the prime leisure property in Apatin (hotel, leisure, etc). Also the new 8ha land that is situated 4km from Liberland deal is closing, up to 25 ha in future (Privacy, green spot, lake: houses, perhaps hotel) - 20-25 plots, inviting architects for expo of the residential potential.
- Daniela: We will design a new Competition for the 8ha land, "houses of the future".
- Shajay: If we use the 8ha area as part of the proof-of-concept, a competition is not the best route.
- Vit: The land value of Liberland is \$7M. Roger Ver is prepared to contribute \$10M for the first development in Liberland. We need a mature business plan, long terms sustainability plan, showing that we have a serious plan.
- Vit: We need a person on the team who is in business development, a business oriented specialist that works with investment funds and banks, to develop the financial plan. Discuss with Michael Flight.
- Daniela: I will discuss with Michael Flight and Adam Carswell whom I meet with through the Chicago Blockchain Real Estate Collective that we all belong to.
- Daniela: We should consider approaching Patri Friedman's current company, which invests in start up cities.
- Vit: Raise \$100,000 angel investor capital to develop the business plan (?). WE NEED TO CLARIFY: market size and risks
- Daniela: Shajay, please prepare an overview presentation of the tool, development steps, design process, technology etc. In plain language.
- Shajay: Will write in our own words 10 sentences about "the tool", in plain language.
- Vit: We need: Name for the product, what is it, why is it necessary.

## **JULY 28 2020 TYLER & DANIELA MEETING**

**Zoom Meeting notes by Daniela**

I met briefly with Tyler from Bull Blockchain Law this morning. The aim was to give him an update on what we decided in our last meeting, but he mentioned some key items that he will elaborate further on Friday when he joins us:

1. To start we will of course need the seed series documents drafted.
2. Most importantly we need a private offering memorandum that spells out the investment strategy, board of managers, etc, and most importantly the long list of risk disclosures (a typically 40-60 page document). It is not required, but is in standard use in case of court or SEC review. If a dispute arises with an investor, this document overrides any previous discussions and assumptions.
3. He recommended we go for a Private Placement rather than IPO (AKA “Reg-D Offering”), a sale of securities to a pre-selected number of individuals and institutions (accredited investors with more than \$1M value).
  - Private placements are relatively unregulated compared to sales of securities on the open market.
  - Private sales are now common for startups as they allow the company to obtain the money they need to grow while delaying or foregoing an IPO.

Additionally I asked him to assess his fees (at cost) for initial time investment. He can provide a standard budget for preparing investment documents, but the transactions contract will be a unique and novel type of contract. He is open to either serving as consultant, or partnering in the start-up, but in either case needs a better understanding of his initial time contribution.

Lastly I brought up the issue of possibly transacting general goods (phones, cars, etc) in addition to transacting digital architectural assets, land coupons, and VR communications (conferences), and his response was that it would get very complicated. But we did not have a chance to get into details on what exactly that means from a legal perspective.