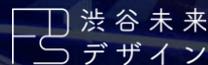


# バーチャルシティコンソーシアム

*VIRTUALCITY CONSORTIUM*

Virtual City Guidelines v1.5.1  
Summary Version

April 28, 2023



# Summary Version

The purpose of this document is to give an overview and understanding of the key issues surrounding the Virtual City Guidelines drawn up by the Virtualcity Consortium.

The latest version, as of April 2023, is ver. 1.5.1.

This summary version focuses on the issues frequently asked about. However, in order to reduce the amount of text, we have kept descriptions to a minimum. Please refer to the relevant section of the Virtual City Guidelines for details on the issues discussed.

In the text  P.xx indicates the corresponding page number in the Virtual City Guidelines.

The Virtual City Guidelines are based on Japanese laws and regulations.

For any questions or queries, please contact the Virtualcity Consortium.

Virtualcity Consortium

[www.shibuya5g.org/research](http://www.shibuya5g.org/research)

Virtual City Guidelines

[www.shibuya5g.org/research/docs/guideline.pdf](http://www.shibuya5g.org/research/docs/guideline.pdf)

Declaration of Virtual City

[www.shibuya5g.org/research/docs/declaration.pdf](http://www.shibuya5g.org/research/docs/declaration.pdf)

# Purpose of the Guidelines

The Virtual City Guidelines have two objectives. The first is to foster a common understanding in terms of the development and operation of a Virtual City, or City-linked Metaverse, among multi-stakeholder groups, including those involved in the development and operation of real cities and metaverse platforms, as well as product and service providers, and users and creators.

The second objective is to provide guidelines for all of the major issues in the development and operation of a City-linked Metaverse.

In other words, the guidelines are a compilation of information and ideas necessary for the establishment and operation of a metaverse or City-linked Metaverse, and for urban development utilizing the metaverse. They are thus intended to assist stakeholders to develop and operate a Virtual City effectively with a common understanding.

The guidelines will also be continually updated to provide information tailored to current situations and to provide a basis for open discussion.

# What is a City-linked Metaverse?

A City-linked Metaverse is a concept that goes beyond that of a normal metaverse to create a virtual environment based on the landscapes and culture found in real cities, linking these virtual environments with those of real cities both functionally and economically.

A City-linked Metaverse aims to provide a more enriched living space by linking cities in the real world with those in the virtual. Specifically, there must be a virtual environment consisting of a three-dimensional "space" that can be accessed permanently from multiple devices, and operable alter egos (avatars) that can act within the virtual environment, or in a real space superimposed on a virtual environment, via the avatar itself or via one's own body.

In addition, because a City-linked Metaverse links a physical space with a metaverse that can be considered a city on the Internet, it is important that all parties involved have a common understanding of the development, operation, and coordination of the metaverse.

A City-linked Metaverse, and metaverse, are concepts that are now being formed based on various initiatives and discussions. The Virtual City Guidelines therefore define all the relevant components based on the knowledge gained from the Virtual Shibuya activities being conducted in Shibuya.

# Components of a Metaverse

- 1 A virtual environment composed of a three-dimensional "space"
- 2 An operable alter ego (avatar) that can be used to act in the virtual environment
- 3 Real-time interactivity
- 4 Permanent access from multiple devices
- 5 Ability for a large number of users to connect simultaneously and share a virtual environment
- 6 Interoperability with other virtual environments
- 7 A self-sustaining economy within a virtual environment

# Components of a City-linked Metaverse

- 1 A virtual environment composed of a three-dimensional "space" based on the notions of a real city
- 2 An operable alter ego (avatar) that can act within the virtual environment, or in a real space superimposed on a virtual environment, via the avatar itself or via one's own body
- 3 Real-time interactivity
- 4 Permanent access from multiple devices
- 5 Ability for a large number of users to connect simultaneously and share a virtual environment
- 6 Interoperability with other virtual environments
- 7 Links between self-sustaining economy in virtual environment with economy of real city
- 8 Links between virtual environment and real city
- 9 Concrete collaboration with stakeholders in city that forms basis of virtual environment, such as support from local government or organizations in real city.

# Background to Establishment of Virtual Shibuya

Based on the city of Shibuya in Japan, Virtual Shibuya was launched in May 2020 with the goal of extending the experience of the city by developing a City-linked Metaverse, linking the real city with a virtual space.

Behind the development was a project to provide a new urban experience using extended reality (XR) technology, and based on the Shibuya model of urban development, led by KDDI, the Shibuya City Tourism Association, and Future Design Shibuya. However, in light of the state of emergencies and lockdowns owing to the pandemic, the course of action was instead changed to realize the previous concept of another Shibuya on the Internet.

Virtual Shibuya was developed to fulfill the following elements in order to provide the experience of meeting people on the streets of Shibuya, even in an environment where it is physically impossible to go out and visit the city.

- Can be used easily by anyone with devices widely in use
- Can reproduce the Shibuya Scramble Crossing as a 3D virtual space
- Virtual space can be accessed by multiple users simultaneously on the Internet
- Users who access the virtual space can recognize and interact with other users
- Can hold virtual reality events that are unique in the virtual space

# Background to Establishment of Virtual Shibuya

Development was conducted through open innovation with a launch event held after the roughly two months of development was completed. After the launch event finished, the virtual space remained open and accessible to many different visitors.

The response immediately following the launch event was far greater than expected. Hopes were raised for urban experiences beyond the event itself, such as shopping experiences, daily communication, and solutions to city issues. In response to these expectations, the project team continues to develop business through co-creation.

Virtual Shibuya



Image of launch event



# Main Topics of the Guidelines

## City-linked Metaverse

⑥

Reproduction and modification of real city landscapes

⑦

Concept of publicness

⑧

Linkage with real cities / sales channels

Topics that need to be considered in a city-linked metaverse

## Metaverse

①

Activation of the creator economy

②

Copyright of user generated content

③

Protection of avatars

④

Portrait and publicity rights of avatars

⑤

Virtual property

Topics that need to be considered for both city-linked metaverse and metaverse

# ① Activation of the creator economy



## Activation of the creator economy

### (1) Possibilities of blockchain technology

### (2) Establishing interoperability with users themselves

### (3) On-chain and off-chain

- In a City-linked Metaverse and metaverse, it is important to encourage user creativity and provide an environment where users can create their own content and services.
- In this case, users are responsible for providing content and services. When it can be provided, it is also important to design the content and services so that users can obtain not only economic value but also qualitative non-economic value.
- The use of blockchain technology is not required in the metaverse.
- However, blockchain technology could be used to enhance users' creative activities based on its economic value.
- Regarding the interoperability under discussion, the key point is the ability to unify digital identities across multiple platforms.
- In addition to cultural elements such as avatar data and technical specifications, interoperability of cultural elements such as rules and norms should also be considered.
- In blockchain, it is important to combine on-chain and off-chain to provide metadata and content data to users.
- For off-chain, there is a risk that users may not be able to use the content.

# ① Activation of the creator economy



## (4) Utilizing NFTs in the Metaverse

- Currently, the primary use of NFTs is in digital art and content.
- When NFTs are used for art and content, issues such as high learning cost, authenticity and reliability of publisher, transfer of copyrights, and currency of revenue sharing at the time of further distribution have been pointed out.

## (5) Utilizing NFTs in the City-linked Metaverse

- When NFTs are used in a City-linked Metaverse, the main objectives are to increase the number of people involved in the real city, foster a sense of pride in the city, and link to the functions of the real city.
- If, as a sales channel, a mechanism can be established whereby a portion of the NFT purchase price is reinvested in city development, this will also help to encourage users to develop a sense of pride in the city.

## (6) Mechanisms for user self-government of space

- It is preferable to have a system that allows users to self-govern the world and engage in community activities.
- DAOs are not required. However, it is important to prepare the necessary functions to properly organize and manage organizational activities by users in the metaverse.

## (7) Challenges in utilizing NFTs in the metaverse

- The basic assumption is that NFTs will help, to a certain extent, reduce the inequality of opportunity in the realization of the creator economy, but it does not guarantee the ability to actually generate revenue.
- Public addresses on the blockchain may fall under the category of personal information under the Act on the Protection of Personal Information, so platform users should be careful when handling them.
- It is also important to design the mechanism from the user's perspective across industries.

## ② Copyright of user generated content

➡ P.33

- In principle, the copyright of user creations, such as avatars, belongs to the creator.
- It is important to balance the protection of users' rights with the efficient operation of the platform, while confirming in the terms of use that the rights to UGC belong to each user.
- When encouraging a chain of further UGC creation, it is important to establish a flexible rights handling mechanism that allows for the granting and easy confirmation of open licenses such as Creative Commons licenses, in addition to the establishment of the terms of use.

## ③ Protection of avatars

➡ P.35

- It is important to note that avatars have different rights depending on their method of creation and appearance.
- In some cases, it can be difficult to determine, so in principle, you should assume that copyrights exist. In other words, permission from the user for public transmission, reproduction, and redistribution must be included in the platform's terms of use, etc.
- In terms of ensuring interoperability, avatars are an important component in maintaining users' digital identities. Therefore, it is important to collaborate across industries in the future to standardize avatar data specifications and establish methods of storage of avatar data independent of the metaverse platform.

## ④ Portrait and publicity rights of avatars ➡ P.38-39

- The closer the avatar's appearance to that of the user, the more likely it is that a problem similar to that of infringement of portrait rights will arise if the avatar's appearance is taken, as a screenshot, etc., and published in the virtual space.
- Especially for well-known accounts and avatars, it is desirable to treat them as having rights similar to publicity rights since the account name and avatar's likeness have the power to attract customers.

## ⑤ Virtual property ➡ P.9

- With the integration of Web3 and the metaverse to create a new economic sphere, user interests (like rights) that are not protected by current law, but should be, such as ownership of data and digital assets, are emerging.
- At this stage, when dealing with virtual properties, such as NFTs (non-fungible tokens) using blockchain technology, it is important to include protection through the terms of use.
- In the future, it will be important to design mechanisms from the user's perspective, not the business', such as by collaborating with industry groups and businesses across industries to develop rules and use cases.

## ⑥ Reproduction and modification of real city landscapes P.21

- Regarding the reproducibility of urban landscapes, it is not always essential to reproduce the landscape of a real city in its entirety. Under the current law, it is not mandatory to obtain the consent of residents when recreating or altering the landscape.
- However, it is important to avoid residential areas and to build relationships with local governments and community groups so that residents' private lives are not threatened.

## ⑦ Concept of publicness P.21

- City-linked Metaverses, by their very nature, tend to be public. As such, they should be designed so that local governments and communities can easily carry out their activities.
- In addition, interoperability and continuity are more important than in a typical metaverse. It is desirable to use blockchain technology to ensure interoperability.

## ⑧ Linkage with real cities / sales channels P.22

- In a City-linked Metaverse, it is important that the physical and virtual environments do not exist as separate entities but are connected through functional and business-related means.
- As a City-linked Metaverse, there is nothing special about cooperation with individual entities existing in a real city. It is sufficient to arrange linkages and sales channels based on normal business practices.

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