METAVERSEAIR

MetaverseAir(MVRS)

White Paper_v2.2

Into the Metaverse

MetaverseAir creates an open blockchain platform for real-time metaverse and digital-twin.

In the near future, the metaverse will become the mainstream of the virtual space that succeeds the Internet. The metaverse of the future will be very similar to reality, and human avatars with AI (Artificial Intelligence) will live together in it as in the novel Snow Crash did.

MetaverseAir is building the core blockchain platform and planning to introduce to the world a platform that supports augmented, virtual extended and mixed reality applications based on the foundation technology that is absolutely necessary in the new metaverse world.

"Metaverse is coming." - Jensen Huang (Nvidia CEO)

"I'm completely in the middle of the metaverse right now. I think the metaverse is snugly approaching all of us. We'll see more and more real-time three-dimensional (3D) worlds." – John Riccitiello (Unity CEO)

CONTENTS.

01. Introduction

1.1. What is the "Metaverse"?

The word metaverse is unfamiliar, but meta means "topmost" and verse means "world". In other words, it is "all the world perceived as a higher level". The metaverse combines four categories: AR(Augmented Reality), Mirror World, lifelogging (the act of recording one's daily life with a portable camera or digital device), and Virtual World.

The word metaverse comes from Neal Stephenson's 1992 novel Snow Crash. The word that comes with this word is the avatar. The metaverse has the potential to grow strongly. Artificial intelligence(AI) has also grown tremendously after 75 years of not seeing the light, thanks to the development of deep learning and hardware created by Jeffrey Hinton in 2012. The metaverse will go the same way.
Market research firm Gartner also referred to the term "multi-experience" in 10 strategic technologies released last year, highlighting the need to pay attention to the interactions taking place in the metaverse.

Recently, Nreal, a startup in Beijing, China, launched AR Glass, and LG Uplus (Top3 operator in Korea) imported 1000 units of this product and sold it for 699,000 Korean Won. Sold out in an instant. That much interest. Oculus device by Facebook is also supporting the great popularity of metaverse. The price has become very cheap, and the display performance has improved. It is expected that Apple will create an important impact in a similar way as the smartphone ecosystem is universal.

Facebook is also conducting a wide variety of AR & VR research in an organization called "Reality Lab". Projects like AR Glass "Aria" were also

released. Apple has been talking about the launch of AR Glass for a long time. Now we are seeing the harbinger of the AR and VR era.

The same goes for companies. In the case of smart factories, AR is used a lot in management, control, and operations. It is also widely used in the field of logistics. VR is widely used in the fields of education and sports.

In a game called Fortnite developed by Epic Games, American hip-hop singer Travis Scott made his own avatar and held a concert. There were 12.3 million people who enjoyed it together. There are various attempts in the media, including the New York Times. It is also famous for Domino's Pizza to allow customers to order their own pizza through AR world.

The future of metaverse is the future of connection. The future of connection will create endless opportunities by expanding our lives, content and space.

1.2. Metaverse Market Environment

The emergence of the AR & VR world has long been extensively covered by movies and novels. In particular, since the appearance of smartphones in the 2000s, the AR sector has seen a variety of technologies and services that use smartphone cameras to recognize texts, faces, images, and objects, or overlay digital 3D images onto particular areas. However, these technologies all involve multiple technical issues in respect of the completeness of the hardware and software technologies involved and the UX (User Experience).

In contrast to the AR sector, the development of the VR sector has been led by major console game companies and such companies had already

produced a variety of concept products since the 1990s. However, the real growth in the VR market segment was ushered in by the variety of VR devices, platforms, and contents released to the market from the mid-2000s as consequences of acquisitions of the relevant VR technology and hardware companies by IT industry giants including Facebook, Samsung, and Google.

In particular, Facebook acquired Oculus VR, i.e., the company behind the success of Oculus Rift, in 2014 for the astronomical sum of USD 2 billion, thereby ushering in the era of VR for the masses. Subsequent to such purchase, Facebook attempted to combine the technologies of Oculus VR with Facebook's powerful content platform. Furthermore, with Samsung's release of their low-cost VR device, the Gear VR, even greater anticipation was formed in the market for the imminent arrival of the mass-market VR era.
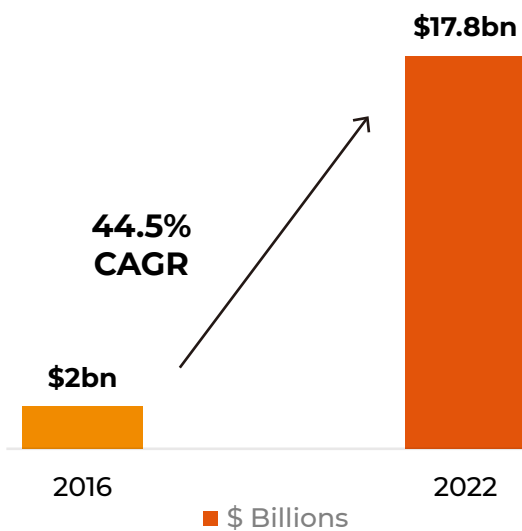
However, despite the astronomical investments into the VR sector by major IT companies and the releases of a variety of VR devices that are cheaper than ever before, the VR market is experiencing a stunning growth. This prompted Facebook's CEO Mark Zuckerberg to even announce that the company will focus more on the AR market than the VR market going forward from 2017 at the F8 2017, the largest annual meeting of Facebook.

There are multiple reasons why Facebook announced its intent to shift its focus to the AR market from the VR market where it had made significant investments. In July of 2016, Niantic, an American company founded by former Google employees, released the augmented reality (AR) game application Pokémon Go. This game used the long beloved Pokémon characters together with smartphone cameras to permit users to capture the aforementioned characters that exist in their surroundings, resulting in global revenues of over USD 1 billion in just seven (7) months after release.
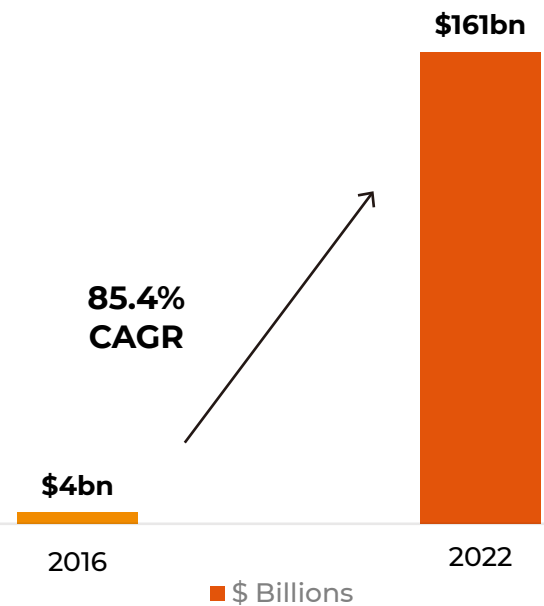
Until the explosive success of Pokémon Go, augmented reality(AR) apps were merely provided as tech demos; however, the record-breaking commercial success of this app had truly opened the gate for the beginning of the AR era.

Market research institutions are also predicting greater growth in the AR and VR market to boom to $170 billion by 2020. Heio Garrelfs, a Secotor Prinicipal at Hampleton Partners said that "The new reality for many businesses will involve augmented, virtual and mixed reality technologies to increase efficiency and improve customer service and employee engagement. Progress is slower than the optimists had hoped, yet it seems to be stronger and more sustainable than the pessimists predicted. The reality is that many businesses now need to have a full AR/VR strategy to ensure they are not left behind [1]."

[VR Global Market Size]   **[AR Global Market Size]**

$17.8bn $161bn

44.5% CAGR   85.4% CAGR

$2bn $4bn

2016   2022   2016   2022

■ $ Billions   ■ $ Billions

The metaverse combines four categories: AR, Mirror World, and Virtual-World. The growth of the AR VR market is expected to be an unstoppable trend for building metaverse. Moreover, the emergence of the glasses and the combination of AR VR technologies with AI (Artificial Intelli-

gence) will make AR VR become an indispensable part of our daily lives.

Why should we pay attention to 'Metaverse' now?

1. Hardware w/GPU performance improved dramatically
2. Connectivity w/zero margin cost and faster speed
3. Everything on cloud. storage, app stores, and communities
4. Camera, sensors, and Haptics for context awareness technology improvement
5. AI for vision, recognition, simulation, and decision technology improvement
6. Familiarity of remote and social interaction due to corona virus pandemic
7. Price for tipping

As a means to ensure that benefits of the high-growth metaverse market are shared by all participants, our team firmly believes that a blockchain currency provides the most upside as a compensatory tool, which could be introduced for fair compensation based on blockchain technology and contribution by the participants. Under blockchain-based compensation system, the metaverse market can grow in a healthier and more organic manner.

02. MVRS Metaverse World

2.1. Current State of MVRS Metaverse

MVRS Metaverse is a platform that allows even more participants to jointly create and accumulate AR & VR content on top of the platform developed based on the experience, skills, and content.

Our team has developed a beta version of MetaverseAir SDK (Software Development Kit) providing a development environment including various core AR VR technologies offered by MVRS Metaverse, which allows developers to easily upgrade/build AR VR apps.

The MetaverseAir SDK is an integrated development environment containing the development tools that help support the device companies, app companies, and individual developers wishing to develop new AR & VR services by allowing them to use the latest AR VR technologies to create AR & VR features and contents for various different devices. As such, AR & VR apps created through the use of the MetaverseAir SDK allows for the realization of AR VR services within each individual app by allowing for the easy use of AR VR technologies even if the developers do not have any technical knowledge relating to AR VR. In addition, an API, which permits the applications to directly use the diverse array of AR VR content provided by the MVRS Metaverse marketplace, is provided.

The diverse array of AR VR content uploaded onto the MVRS Metaverse marketplace can be used by end users through variety of different interface points, such as the basic camera functions of a mobile application made using the MetaverseAir SDK, AR VR glasses, or the like; furthermore, it also supports Geo-AR VR (location-based AR VR), where virtual

AR VR content related to a physical location anywhere in the world could be uploaded into the specific geo-point.

Going forward, various other functions will be added to the MVRS Metaverse marketplace so that users can choose AR VR content that they seek to directly upload or set the scope of sharing and price of such AR VR content. Moreover, the new functions would also establish a marketplace where the users could check the information such as the use status or sales status of the content that the users own and where the users could also make direct sales.

By incorporating the MetaverseAir SDK and connecting to its content server through API, the smartphone manufacturers, AR glass manufacturers, app developers, and the like could create an environment where the users are able to consume and enjoy diverse AR content, apps, and GeoAR (location-based AR) content created by other users worldwide and to participate in MVRS Metaverse by directly creating their own AR content and presenting them in the global space.

2.2. Use Cases of MVRS Metaverse

MVRS Metaverse is expected to provide new lifestyle patterns that would be of practical use of metaverse content in our everyday lives. Here are a few examples:

First, anyone can use the MVRS studio authoring tools provided by MVRS Metaverse to create metaverse content such as AR VR stickers or 3D objects and use devices such as smartphones, tablets, applications, and AR VR glasses that support MVRS Metaverse to distribute those new contents to the entire world for a profit.

Second, developers can use MVRS Metaverse to develop original applications that provide AR VR services they desire (i.e., AR VR games, AR VR educational apps, etc.) and sell them globally through the MVRS Metaverse marketplace. MVRS Metaverse would provide supports to such developers by providing free resources at the beginning, and developers could freely promote their own applications on various devices and applications that include MVRS Metaverse.

Third, users can explore MVRS Metaverse, the AR & VR surrounding the users, by using the camera viewfinder of various MVRS Metaverse devices and find or save new location based content. For example, when a user's friends look at such a user while wearing AR VR glasses or through a smartphone camera, the friends could discover the user's digital selfie as they would be able to see the user wearing the user's own preferred digital gear, such as AR & VR stickers, masks, sunglasses, avatars, accessories, or outfits from famous movie or animation.

Fourth, if a user were to share AR VR content created at the Eiffel Tower in France, then when other users actually visit the Eiffel Tower, they would get a notification informing the existence of such AR VR content and would be allowed to download such created content. This would allow people to enjoy messages or memories in AR VR form that have been left by their friends, or even create their own memorable pictures or videos using AR VR stickers designed and shared by their friends.

Fifth, users can use MVRS Metaverse to share restaurant menus or coupons with everyone in the restaurant, upload collaborative documents to an office environment in advance, and develop and distribute AR VR games that can be enjoyed in particular locations, much like Pokémon Go. Furthermore, users can leave video messages to their loved ones at home to be viewed only by such loved ones. Users can use MVRS Metaverse to enjoy a variety of different AR VR content based on the user's current location

and they can create their own digital worlds through MVRS Metaverse. In particular, the Geo-AR function supported by MVRS Metaverse allows for push notifications to be sent to users automatically through a particular app on MVRS Metaverse when they approach a physical location where such content is available. Once at the location, users could then activate the content or an app, or see or peruse the content in MVRS Metaverse if they are using AR VR glasses, and save it to their own storage (Basket).

The paid content can also be purchased by using cryptocurrency issued by MVRS Metaverse, i.e., MetaverseAir Coin(MVRS). We expect the development of MVRS Metaverse to bring about the birth and provision of various different secondary services, such as camera views used to identify real world text, images, human faces, products (objects), and the like in real-time to conduct a real-time Google search in order to display relevant information, conduct real-time translations, or recognize a criminal's face in advance and sound an alarm.

2.3. The Future of MVRS Metaverse

MVRS Metaverse aims to evolve into a platform that is more than just a marketplace where various digital AR VR content could be distributed to and from anywhere in the world without being limited by device, operating system, or infrastructure. The MVRS Metaverse provides a new content distribution channel that allows for the various types of virtual content and information that had previously been distributed through closed web or app channels to be utilized directly at a user's current physical location. In other words, if Google could be characterized as a system that had provided a variety of information and services as the portal that go beyond the limits of time and location through standardized channels such a PCs or mobile devices on the network called the

MVRS Metaverse would then be characterized as an attempt to utilize, in the real world, the infinite expansion of the digital world at our fingertips as a distribution channel for new forms of information and digital content in future.

From the perspective of a content creator, the distribution method for personally created digital content – in other words, the scope of sharing, price, Geo-AR VR feature support, etc. – can be set by the creator directly, which would allow the expansion and growth to happen on their own through the same principles of supply side economics that applies in the real world. Creators can carry out various types of actual business activities in MVRS Metaverse, such as PR, information exchanges, commerce and the sale of authored works. In the future, spaces in MVRS Metaverse would be sold and leased just like actual real estate.

From an application developer's perspective, the MVRS Metaverse development environment can be used to create and distribute various applications even with a limited amount of resources, and a developer would be able to also make open source contributions of its own newly developed AR & VR technologies to the MVRS studio under the GPL (General Public License), allowing for a licensing business model where royalties or a share of the revenue may be received from the device manufacturers and content creators by using such technology. Under such system, blockchain technology will enable not only the management of such integrated, open, and collaboration-based licenses, but also just compensation for technological developments and their subsequent use.

From the perspective of a user, the metaverse apps and content of MVRS Metaverse can be enjoyed anywhere and at any time through various devices that support MVRS Metaverse, such as smartphones, tablets, and AR VR glasses. The initial screen of services supporting MVRS

Metaverse would be the camera view or the initial display screen of a device such as AR VR glasses that can show virtual world and objects. Through this initial screen, users would be able to experience "MVRS Metaverse," a new virtual digital world superimposed on reality. Additionally, there are also plans for MVRS Metaverse to support AR VR content, apps, and the location-based AR VR content that could be used without having to turn on a device's camera functions.

From an application developer's perspective, the MVRS Metaverse development environment can be used to create and distribute various applications even with a limited amount of resources, and a developer would be able to also make open source contributions of its own newly developed AR VR technologies to the MVRS studio under the GPL (General Public License), allowing for a licensing business model where royalties or a share of the revenue may be received from the device manufacturers and content creators by using such technology. Under such system, blockchain technology will enable not only the management of such integrated, open, and collaboration-based licenses, but also just compensation for technological developments and their subsequent use.

From the perspective of a user, the metaverse apps and content of MVRS Metaverse can be enjoyed anywhere and at any time through various devices that support MVRS Metaverse, such as smartphones, tablets, and AR VR glasses. The initial screen of services supporting MVRS Metaverse would be the camera view or the initial display screen of a device such as AR VR glasses that can show virtual world and objects. Through this initial screen, users would be able to experience "MVRS Metaverse," a new virtual digital world superimposed on reality. Additionally, there are also plans for MVRS Metaverse to support AR VR content, apps, and the location-based AR VR content that could be used without having to turn on a device's camera functions.

Furthermore, even individuals could upload themselves digital AR VR content and apps, and get compensated based on their popularity (i.e., degree of usage). New forms of AR VR content could be created directly through MVRS Metaverse, and information such as the management of the content and profits, and the status of its usage could be freely accessed. In addition, business users who wish to increase the number of offline visitors to the store using MVRS Metaverse could do so by giving away free MVRS Metaverse coins as promotional campaigns or by providing coupons within the store's MVRS Metaverse space.

MVRS Metaverse would allow people to use and enjoy the various digital services and content they had formerly consumed within the closed space represented by online space in a whole new manner. The emergence of MVRS Metaverse would not only allow us to enjoy an even greater variety of AR VR content and services through ubiquitous smartphones and tablet devices, but also accelerate the emergence of innovative new products and services by allowing the users to experience a variety of different virtual content through new smart devices of the future like AR VR glasses.

"Over the past 100 years, every tech communication trend was met with understandable apprehension (radio, TV, Internet, social media).

Our best guess is we are 10 years away from a time where a virtual world similar yet very different from our own becomes an integral part

in the future of work, play, and Communication." – Pat Boccicchio (Loup Ventures analyst)

03. MVRS Metaverse - Open Platform for Metaversentroduction

Our team aims to establish an open and integrated platform called MVRS Metaverse, which would allow anyone to create and distribute a variety of different AR VR content and services. Through this platform, developers will be able to release AR VR apps and individuals will be able to create AR VR content without having to rely on the traditional somewhat monopolized markets or technologies, and users can use this platform with any compatible hardware devices such as mobile devices or AR VR glasses regardless of specific manufacturers or specific operating systems. Based on the current existing systems, in order to release or launch a product or service in digital world, it requires registering and distributing the service through a traditional marketplace (marketplaces fragmented by devices, operating systems, and internet portal sites, e.g., Apple App Store, Google Play Store). As a result, developers and creators have no choice but to abide by the policy set by a traditional centralized marketplace where they must pay high fees. This, in turn, would cause an imbalanced and somewhat unfair distribution of profits.

MetaverseAir Platform
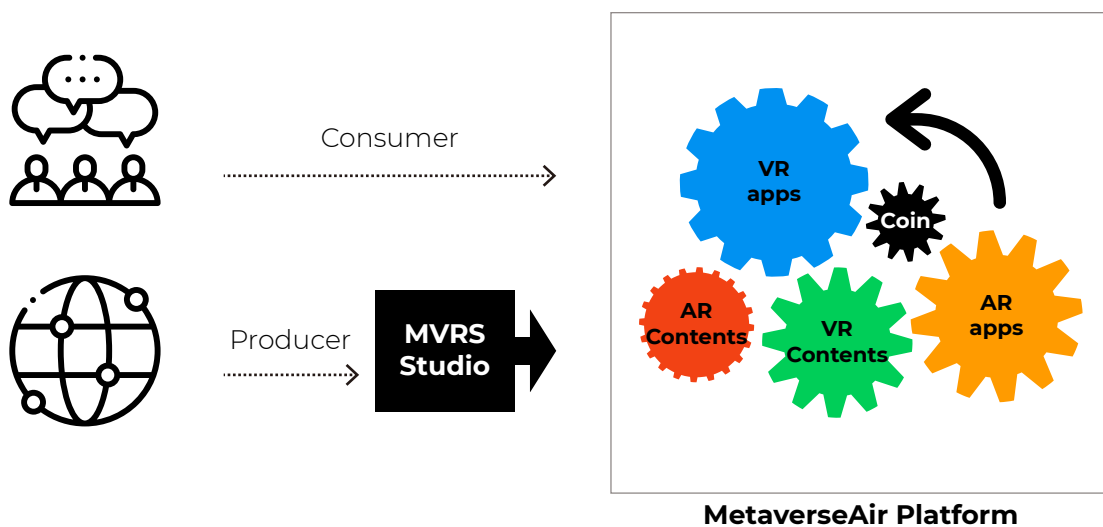
It is this current commercial environment that led us to start building a platform providing a more integrated service environment where AR VR content and apps are not dependent on the traditional centralized markets. In MVRS Metaverse, AR VR content and apps can be created and developed, registered, distributed and operated more democratically, and we plan to extend MVRS studio and SDK into an integrated platform and upgrade it by developing new features.

All MVRS Metaverse users will first come into contact with a type of portal or a view including the default services as MetaverseAir Apps. Through this portal or view, users will be able to see and experience the most basic services of MVRS Metaverse, and will be able to approach and access a variety of different MetaverseAir Apps that are provided by MVRS Metaverse.

The service can be accessed through an iOS / Android / Windows smart devices or an application on newly invented device such as AR VR glasses. Further, all MetaverseAir Apps are made to support standard web interfaces, so there is a support for directly accessing the various different MetaverseAir Apps within MVRS Metaverse without having to go through any existing centralized marketplaces or existing distribution channels. The basic services of MVRS Metaverse are as follows:
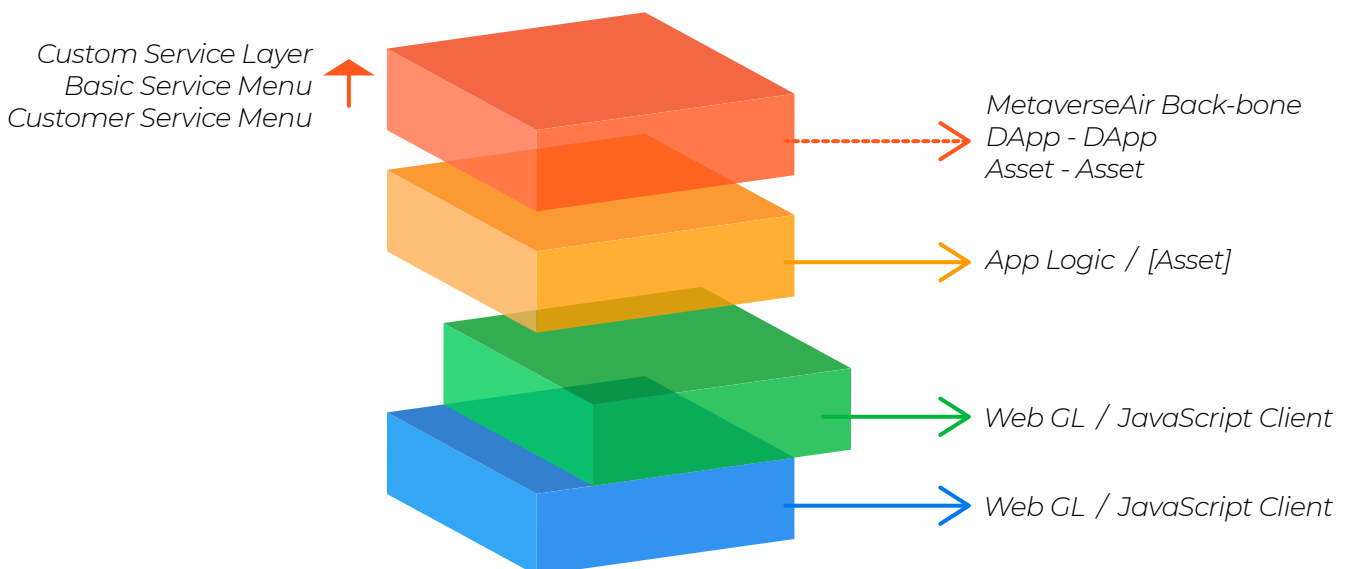
Basic View	Basic View for each accessing device: - Smartphones: an AR camera screen onto which digital objects can be projected - AR VR glasses: a camera display screen that supports AR VR - A smartphone app: the map screen or the app's default screen - A web app, a custom web browser and the app's default screen
Global Menu	Default menus always accessible in the Basic View: - Exit - Wallet - Market - Global Navigation Menu - Message / Chatting Menu
Custom Menu	App or service default menu screens that extends from the Global Menu

3.1. MetaverseAir Applications

MetaverseAir Applications refer to the AR VR content and apps that consumers can use in MVRS Metaverse (collectively referred as "MetaverseAir Applications" in this chapter) and they are decentralized applications that operate on MVRS Metaverse through the default menus or Basic View of the MVRS Metaverse. All MetaverseAir applications are operated on the web-based MetaverseAir Engine, and will be distributed through the MetaverseAir Back-bone Platform. The types of MetaverseAir applications can be defined as follows:

- Native App (iOS / Android / Windows)
- Web App (applications that are used browsers in the forms of Chrome, Firefox, Safari, MS Edge)
- Custom App (Applications that can be used with AR glasses and the like)
- AR VR content consisting of simple images, 3D objects, and AR VR stickers (comprised of assets).

Moreover, MetaverseAir applications can be formed from any unit of digital content or general services that can be expressed as a specific MetaverseAir service, such as text, images, videos, software code, or links. Hence, MetaverseAir Applications can be exclusive services that take up all of MVRS Metaverse's screen and resources, or they can be a single unit of digital content within a separate MetaverseAir Application. In other words, an AR VR sticker created by a designer and distributed through MVRS Metaverse can be considered a single unit of digital content.

Custom Service Layer
Basic Service Menu
Customer Service Menu

MetaverseAir Back-bone
DApp - DApp
Asset - Asset

App Logic / [Asset]

Web GL / JavaScript Client

Web GL / JavaScript Client

[MetaverseAir Application Layers]

All MetaverseAir applications will have a standard web runtime environment, meaning that they can be run on all devices that support a standard web runtime environment without requiring any additional work.

The MetaverseAir Engine supports such an environment by creating a digital environment that runs the native web client application of each device, allowing for the decentralized AR VR apps to carry out AR VR functions independent of device manufacturers or operating systems. The specific application runtime environments supported by MVRS Metaverse are as follows:

- Native Web environment
- Web OS environment
- Embedded environment

Native Web environment refers to a web runtime environment running on iOS / Android / Windows operating systems, and it supports an environment where the web-based code blocks can be run/operated.

This provides a method whereby applications can be run even as web apps, and if a compatible native app is installed on a mobile device that supports the web, then the environment that can run MetaverseAir Applications can be provided.

Web OS environment refers to an environment that can be run / operated on a Web OS such as Chrome OS, and it is a runtime environment specific to a web browser much like Chrome Extensions and Chrome Apps.

Embedded environment refers to a standard web base runtime environment that can be used by devices such as AR VR glasses. This environment provides a virtual web runtime environment so as to avoid run-

time environment fragmentation based on device manufacturers and operating systems. Furthermore, the MetaverseAir Engine that supports the APP runtime environment on which the above-explained Metaver-seAir Applications are run is composed of the ARVR WebGL Engine and AR-VR Core Engine elements.

As the WebGL based application engine supports web standards, **AR-VR WebGL Engine** supports the final runtime environment in which most OpenGL 2D/3D objects, scenarios, and scenes are interpreted and run by the relevant engine. The AR VR WebGL Engine has the following interfaces and engines, and is responsible for running the binary builds compiled by AR-VR Studio.
- HTML5 Interface, WebGL Interface 3, JavaScript Interface, Rendering Engine.

AR-VR Core Engine is an engine that provides a computer vision and image processing interface for the various sensors and devices/hardware that are relevant to AR services, such as camera input, sound input/output, face detection/tracking, hand gesture recognition, and ground plane detection. AR- VR Core Engine provides the following functions.
- Camera, Audio, Geo-Location, Face Tracking, Face Recognition, Eye Tracking, Hand Gesture Tracking, Head Tracking, Light Tracking, Ground Planes / World Planes, Depth Image Segmentation.

3.2. MetaverseAir Studio

MVRS studio is a software package made up of tools that allow for the creation of MetaverseAir Applications, which are finished product of MVRS Metaverse. Users will be able to directly create and upload various types of digital work through MVRS studio. MVRS studio currently supports

web-based services, and in near future, it will provide authoring tools that support native desktop app development environments where high quality 3D content can be created directly, as well as an IDE (Integrated Development Environment) allowing developers to easily develop AR apps using the latest AR technologies.

The current MetaverseAir marketplace allows uploading of created AR VR content and distributing such content to devices or apps using the MetaverseAir SDK. The MVRS studio, in near future, will allow even individuals to create and distribute their own AR VR content and AR VR apps.

In order to provide authoring tools in near future, there must be the ability to build and distribute software in the form of a single application that imports, edits, and properly defines within the scenario the 2D/3D objects to be used by AR VR apps, and also includes the programming for various additional AR VR functions and effects. In order to do this, the following tools are planned for release through MVRS studio.

- IDE Tool, MetaverseAir SDK, Asset Market, Build/Debug Tool, Distribution Tool Additionally, there are also plans to provide plug-ins for the representative development environments used by the traditional AR VR and game industries (Unity / Unreal) that can create/ build / distribute AR VR content and apps.

The IDE (Integrated Development Environment) where AR VR content and apps can be created using MVRS studio, which provides an authoring tool similar to Unity or Unreal where AR VR content and apps can be created. A single program that provides a development environment where all of the works that go into developing a program including importing assets created using existing 3D / 2D creation tools (Maya, 3D Max, Photoshop, etc.), creating scenes to fit the application scenarios, connecting scenes together, adjusting the order of scenes, and all of the

related coding, debugging, compiling, and distribution can be done.

MetaverseAir SDK supports the most basic AR VR functions, such as the basic AR VR Plug-in / Face Tracking Plugin / GeoLocation Plug-in / Object Tracking Plug-in / Hand Tracking Plug-in in an SDK (Software Development Kit) form. The SDK supports the add-on of individual AR VR technologies through an Open Interface Plug-in format, and will also allow for the inclusion of support for existing devices and a diverse array of compatible open-source AR VR technologies through the Plug-in Interface of the SDK.

The Asset Market is a marketplace within the MVRS studio where users or creators can register, reproduce, or sell the 3D / 2D objects, or scenes that apply various service scenarios, that they have created; the creations can be registered and sold / shared free of charge or for a price, and a developer or a service provider can use this marketplace to create AR VR content and apps using pre-existing assets.

The Build / Debug tool allows for building and debugging AR VR content/apps projects in DApp binary form, and creates a proper DApp binary for the DApp's runtime environment. The final build environment will provide support for device-optimized DApp binaries by providing debugging and preview functions that can check optimization and proper implementation for each device.

The distribution tool is a tool that allows for finalized AR VR content and apps to be distributed via the MetaverseAir Cloud, and as such, it supports product registration, price registration, sales, releases, and service controls for the product in question. The final form will be similar to the current mobile app market registration screen; however, the big difference will be that products will be able to be distributed to the MetaverseAir Cloud, in addition to which the use logs for the relevant product will be trackable due to the blockchain.

3.3. MVRSBlock - MetaverseAir Blockchain

MVRS

Our token will have several functions:

1) means of exchange in the MVRS metaverse ecosystem;

2) staked collateral for validators;

3) the governance token.

MVRS will be available for purchase through Uniswap v3.

MVRS Bridge

Bridge is a common concept in the defi space. When a user tries to send their tokens from one chain to another without crossing through a centralized party, they must use a bridge. In the NFT space, however, this concept is just beginning.

Two of the major issues raised for the NFT bridge are:

1) the risk of the bridge validators manipulating the bridge and taking the NFTs locked in each side of the smart contract ;

2) the existence of the NFT on the other chain is not common.

The first issue we tackle by what we call the Safety Collateral Rebalancer (SCR). Liquidity will need to keep rebalancing between liquidity pools and those staked by validators. If there is too much capital in liquidity pools, the locked NFTs are unsafe. If there is too much capital bonded by nodes, the network is inefficient.

Thus, the protocol will change the reward mechanism between pools and validators to keep the balance of staked MVRS 50% larger than the NFT values in market price, provided by the oracles. This concept is called SCR.

We will develop in-house oracles that will aggregate the price of major

NFTs while at the same time spamming and wash trade, self-trading or fraudulent price making.

We see the issue in the second part in that there is nothing to experience, for instance, even if the crypto punk moves into the Luna blockchain. We solve this by making a cross-chain ecosystem that people can interact with by using Tendermint. We will use an in-house developed version of Ethermint (Cosmos-Ethereum bridge) called Eth-metabridge. This will be our primary market, followed by Solana, Polygon and Klaytn.

MVRS Avatar
Avatar is the existence of one's identity in the metaverse. As explained in the davaproject.com, the single or multi identity each will be able to act like a person in the real world. They will be able to move around dapps integrated with the MVRS ecosystem — we call this ecosystem the MetaAirWorld.

The Avatar will be able to visit Aave and meet the Aavegotchi's to take out a loan. Avatars will move into the CryptoVoxels space to build a house. Once CryptoVoxels becomes part of our ecosystem, Avatars will also be able to carry items across chains.

also be able to carry items across chains.

Avatars will be able to buy meta-items from 24-hour liquidity provided by AMM for each market: metaverse will not only be a physically unlimited space, but a space that is not limited by time.

Avatars will be based on ERC-1155 which will enable Avatars to be upgraded when staked together with other ERC-1155 items, such as wearing clothes or drawing a tattoo.

Avatars will be able to communicate in real time by using voice rather than keyboards.

MVRS Items

Items cover a comprehensive range of meta-objects that the Avatar needs or wants to use in the MVRS ecosystem.

They can range from shoes, cars to jetpacks and lightsabers. Anything can be made into the MVRS ecosystem through the mint function, and people will be able to purchase NFTs not because their price will rise, but because they want to express themselves through their Avatars' items.

There will be no obligatory items that Avatars must have such as food or house — they can starve and sleep on the streets, but one thing that cannot change is the identity unless the Avatar is sold. Once you are labeled in the MVRS ecosystem, basic individual traits such as names, age, physique and gender, will not be able to be changed. This will in some extent limit the potentials of the metaverse, but what we focus more is the 'reality' aspect and 'self-presence' — we don't want people to become anything they want and get lost with their self-identities.

Earlier in the roadmap, items will generated in part by the MVRS team and mostly by NFT artists who will be able to use the mint function. Later in the ecosystem we will develop partnerships with other ecosystems to integrate their items into the MVRS ecosystem.

4.2. Participant Scenarios

The economic activity scenarios from the perspective of actual MetaverseAir Platform community participants to provide a more detailed explanation.

Scenario 1. User

A user can download AR & VR content/apps and use it for free, or it can use MVRSs to purchase pay-to-use AR & VR content/apps, and possesses or uses them. In addition, a user could earn MVRS by downloading apps including advertisements provided in MVRS Metaverse and using them for an extended period of time, or by sharing images or videos including AR & VR content on Instagram or other social media platforms, or by providing reviews, rating or clicking recommendation buttons. Moreover, users can also make AR & VR content using the tools provided by MVRS studio and upload them onto the MetaverseAir marketplace and earn MVRS as sales proceeds.
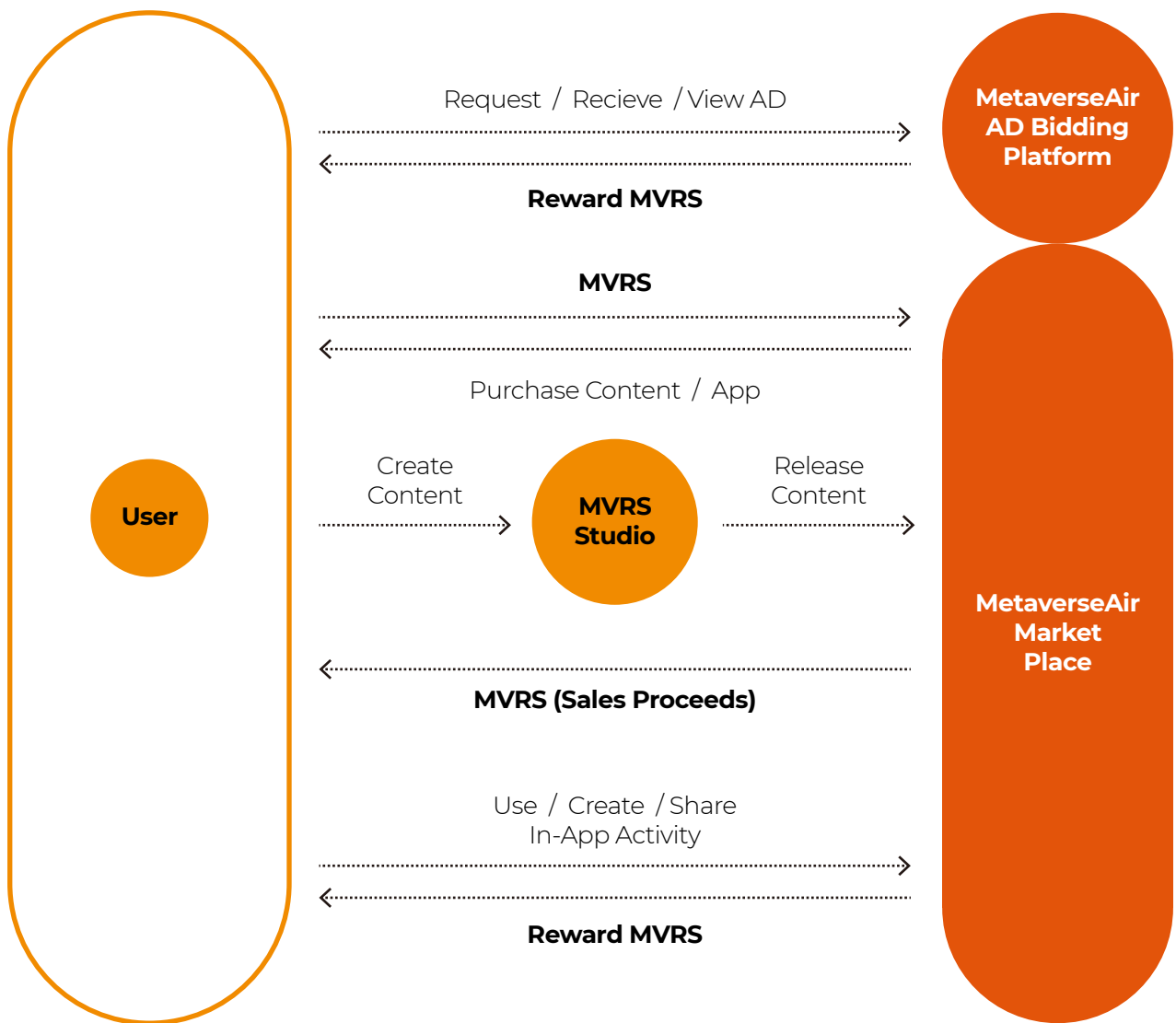
[Examples of Users' Activities]

A user can register and distribute the created content, and such created content will belong to the creator and the authorship will be recorded under the creator's ID in the MVRS Metaverse, which would then allow the creator to exercise its ownership right if necessary.

Scenario 2. Developer

A developer can build and service app on MVRS Metaverse. It would be easier to build because all the tools would be provided in MVRS studio as well as content, and it would be cheaper to service due to the token economy provided by MVRS Metaverse where it is devised to earn money as the usage grows. Also the tools provided in MVRS studio would get updated as more developers use MVRS studio and continue to add new technology to its technical library or provide a plug-in for the new technology. Developers would be incentivized to contribute new technology because they would get license fees or revenue shares or some type of benefits from using that technology. In addition, a developer can promote its own app by ranking up in the marketplace using MVRS. Users' ratings would also be used in determining popular apps ranking.
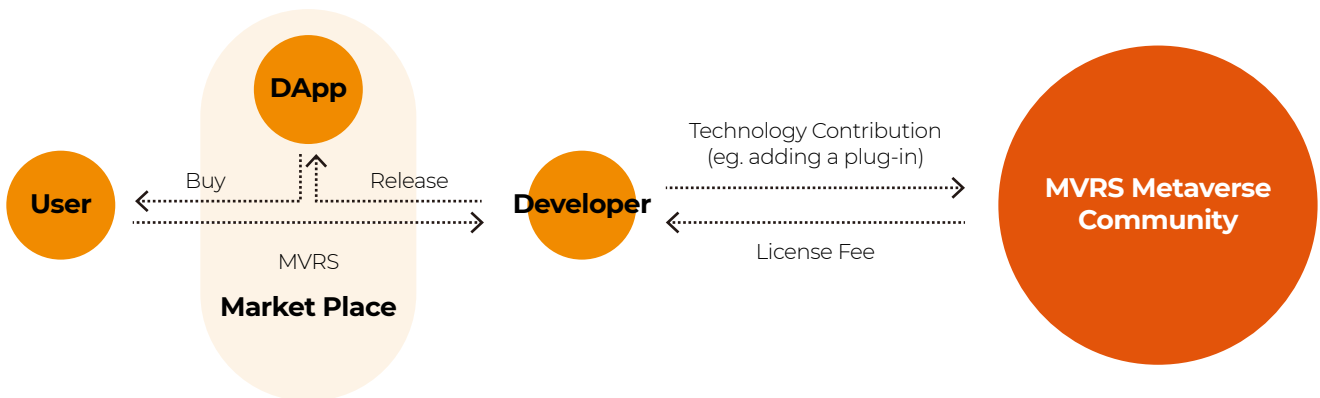

[DApp Registration and Technology Contribution]

Scenario 3. Advertiser

An advertiser wants to expose its brand/product in the MVRS Metaverse and there are diverse brand/product promotions and exposure methods. EP determines the advertising exposure range and the order of priority. An advertiser can use AWC to buy the exposure range, time and a specific geo-fence location, and use the default advertising bidding platform in MVRS Metaverse to place its ads on those apps in MVRS Metaverse which employ advertising inventory services, or at some spe-

ific location it can deliver a direct advertising compensation to the app developer that actually exposes the advertising and the users who have been exposed to the advertising.
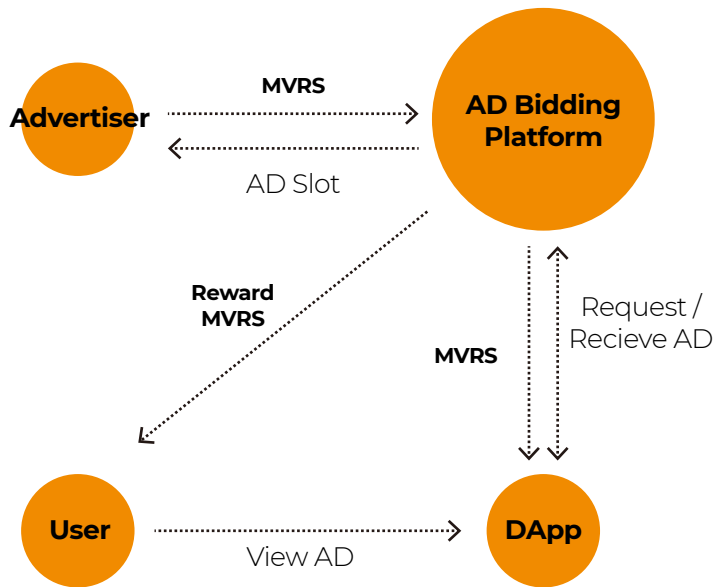
[Activities involving AD Bidding Platform]

Scenario 4. H/W Maker

A H/W maker can air-drop MVRSs for promotional marketing to MVRS Metaverse users. The air-drop procedure is performed through a smart contract wherein MVRS is automatically transferred to a user's wallet once such user registers the serial number of the H/W maker's hardware product in MVRS Metaverse. A H/W maker can develop its own OS and SDK, and create/provide its own AR service and market platform only for its own hardware device. Instead of incurring a large sum of project development, marketing and operation costs, the H/W maker can provide its own service for its hardware device at a much lower cost if it adopts MVRS Metaverse.

[Exaples of H/W Maker's Activites]

05. Token Distribution