



# XR SHOW ROOM

Official Directory

KoVAC — XR SHOWROOM Official Directory 2023



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Official Directory

KoVAC  
Korea VR-AR  
Complex

20  
23



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# Table of Contents



## CHAPTER 01

### Korea VR AR Complex(KoVAC)

- 1 Introduction to the Korea VR AR Complex (KoVAC) 6
- 2 Facilities of the Korea VR AR Complex(KoVAC) 8

## CHAPTER 02

### XR Showroom

- 1 Introduction to XR SHOWROOM 14
- 2 Experience program of XR SHOWROOM 15
- 3 Introduction to XR business program 15

## CHAPTER 03

### Introduction to Exhibitors and Contents

- 1 Police 18
  - XR-driven training system for responding to complex terrorism [POLICE XR] LOCUS Co., Ltd., etc. 19
- 2 Defense 22
  - XR-driven scientific shooting training simulator [MARS] OPTIMUS SYSTEM Co., Ltd., etc. 23
- 3 Firefighting 27
  - Initial fire response capability improvement system for fire safety managers Yonsei University Industry Foundation, etc. 28
- 4 Nuclear fusion 39
  - XR-driven fusion energy facility operation based on digital twin TriTech Co., Ltd., etc. 40

## 5 Industry

### Industrial Digital Twin

- XR-driven manufacturing facility operating system Korea Electronics Technology Institute, etc 48
- Industrial digital twin/ metaverse smart factory solution [FLEXING Metaverse] UVC Co., Ltd., etc. 55

### Construction and Shipbuilding Industry

- Construction machine training solutions [VR CMS] BIG PICTURES Co. 63
- ① Industrial safety VR content ② Tourism metaverse [Tour Planet] NOVATECH Co., Ltd. 68

### Mobility Industry

- Training for VR-enabled electric vehicle certification test WABOTECH Co., Ltd. 71
- VR drone simulator [ISDDS Ver2.0] Doublebears Co., Ltd. 74

## 6 Medical-Health

- Severe trauma education solutions based on tangible content [TNXRtc] DKI Technology Co., Ltd., etc 78
- XR-driven brain cognitive rehabilitation program for pain & paralysis-inflicted patients [TiU] Rising Craft Co., Ltd. 90
- Bio-genome/ medical education & training content based on VR-MR [Medical Reality Training Contents] TMD Education Group Inc. 93
- XR-enabled acupuncture training content using a human dummy [Oriental Medicine Acupuncture XR] Quadrature Co., Ltd. 101

## 7 Education

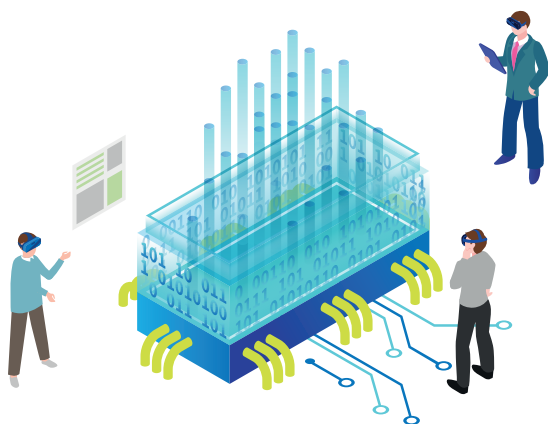
- AI-enabled customizing avatar service [MoiMe (Moi/ StorySelf)] illuni Inc. 107
- Healthy edtech content for children [Curio AR Play Series] PlayCurio Co., Ltd. 111

## 8 Entertainment

- AR-VR-metaverse-AI convergence cloud platform circuscompany Co., Ltd. 116
- ① Prosumer-type metaverse content [bicus] ② Holographic performance solutions [HoloMR] Bibimble Inc. 121
- AR makeup guide platform [VVU.TI] alijas Co., Ltd. 126
- Five-sided interactive AR immersive space [X-Rumpus Box] Sharebox Co., Ltd. 130
- Multilingual digital human video production service [AiVATAR] AIPARK Co., Ltd. 133
- Network-based two-player room escape content [Silent Turn, Adventure Series]YOUCANSTAR Co., Ltd. 137
- ① Physical environment applied metaverse [Real Meta] ② SMU Android special investigation unit SIGONGtech Co., Ltd. 140
- XR-enabled i-VERSE service using MR Table ISPark Co., Ltd. 143

## 9 XR Devices

- Korean XR Devices' Experience and Exhibition Space [XR Device Lab] Gumi Electronics & Information Technology Research Institute 148



# CHAPTER 01

## Korea VR AR Complex (KoVAC)

- Introduction to the Korea VR AR Complex(KoVAC)
- Facilities of the Korea VR AR Complex(KoVAC)



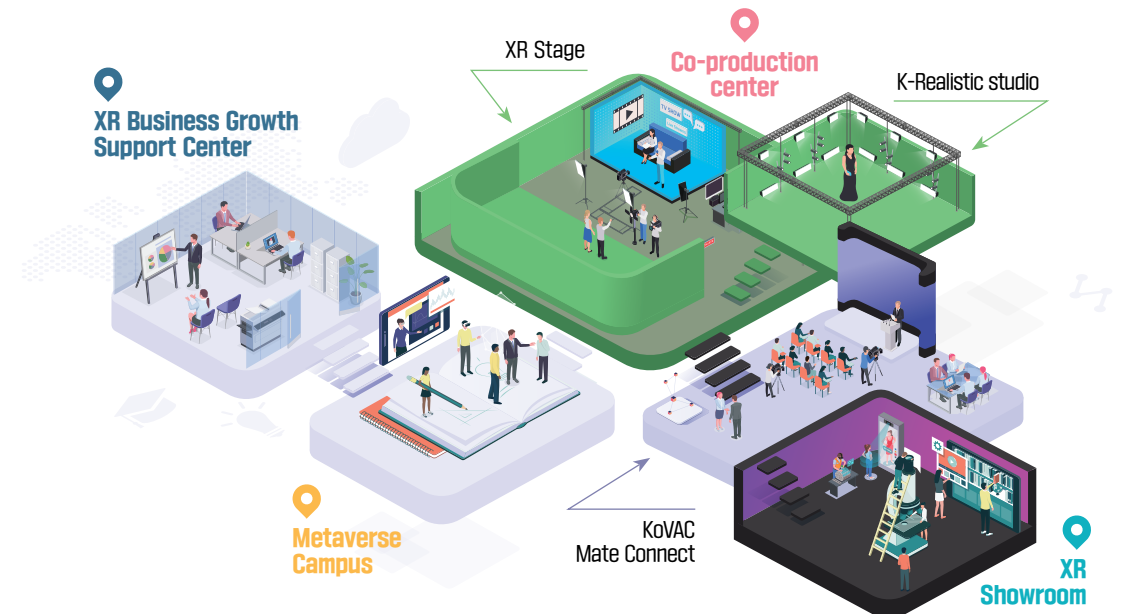


# Introduction to the Korea VR AR Complex (KoVAC)

## 1. What is the Korea VR AR Complex (KoVAC)?

Korea VR AR Complex (KoVAC) integrates diverse support functions (company growth, contents production, business marketing, overseas expansion, etc.) related to XR metaverse contents, and provides end-to-end support from the development of immersive contents to their commercialization.

## Facilities of the Korea VR AR Complex (KoVAC)



### XR Business Growth Support Center R&D Tower

Office Space Support

To promote businesses working in XR, we support workplaces (Office space (68 in total) supported) for companies based on their positions in the business life cycle.



### Metaverse Campus Digital Pavilion 3F

Manpower Training

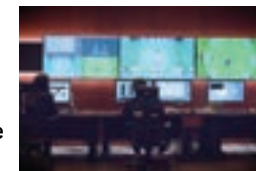
XR education to nurture professionals with production skills and creative capabilities in immersive content.



### Co-production center Co-production Center and Digital Pavilion 4F

Production Center

Promoting the production of immersive content that is linked with various industries by supporting immersive content production infrastructure and technology



- (Production facility) Providing support, including K-Immersive Studio, LED XR Stage and CGI-based content-gear post-correction facilities
- (Infrastructure support project) Implementing the project for supporting K-Immersive Studio and LED XR stage production infrastructure
- (Filming equipment) Providing support, including 360° surround video, 12K high definition wide video and 4K real-time relay equipment

### XR Showroom Digital Pavilion 1, 2, 4F

Business Support

Permanent exhibition To support XR and Metaverse content business



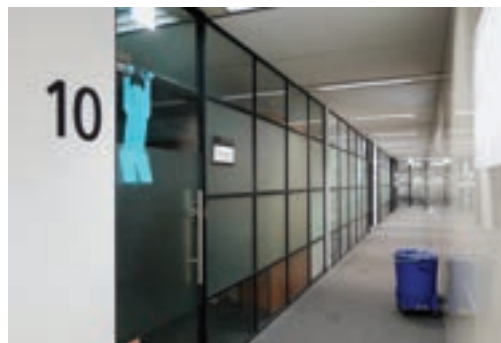
- (XR content experience program) That enhances understanding of the domestic XR and metaverse industries.
- (Business Event) XR and Metaverse Business event to link demand and suppliers by arranging business consultations, seminars, conferences, etc.
- (Commercialization & marketing support) Establish a business foundation through customized commercialization and marketing support for XR content companies.



# Facilities of the Korea VR AR Complex (KoVAC)

## 1. XR Business Growth Support Center

The XR Business Growth Support Center provides office spaces to XR metaverse-related companies at various stages of growth, ranging from startups to small and medium-sized companies, with the aim of nurturing the development of XR metaverse companies.



### Support Info.

Type	Eligibility	Contract area	Monthly Leasing Fees (excluding VAT)	Monthly Management Fees (excluding VAT)	Maximum occupancy period	Note
Type A	less than 3 years (Sole-traders or small and SMEs)	dedicated area 50m <sup>2</sup> or less	Free of Charge	8,960 KRW/m <sup>2</sup>	2 years	- furniture (desks, chairs, filing cabinets), Internet, all-in-one printer
Type B	less than 7 years (Sole-traders or small and SMEs)	dedicated area 70m <sup>2</sup> or less	Free of Charge	8,960 KRW/m <sup>2</sup>	4 years	- meeting rooms
Type C	SMEs	dedicated area 125m <sup>2</sup> or less	Free of Charge	8,960 KRW/m <sup>2</sup>	6 years	
Type D	SMEs	dedicated area 204.5m <sup>2</sup> or less	3,000 KRW/m <sup>2</sup>	8,960 KRW/m <sup>2</sup>	8 years	- meeting rooms only
		dedicated area 250m <sup>2</sup> or less	4,530 KRW/m <sup>2</sup>	8,960 KRW/m <sup>2</sup>		
		dedicated area exceeds 250m <sup>2</sup>	6,260 KRW/m <sup>2</sup>	8,960 KRW/m <sup>2</sup>		

**How to apply** Supporting selected companies by publicly recruiting move-in companies (project announcement on the NIPA website)

**Eligibility target** Companies that produce and supply immersive content related to virtual convergence technology (XR), such as VR, AR, MR, and metaverse, or companies in the XR-related areas, such as application software, contents, platforms, and devices for producing XR-related immersive contents.

**Key benefits**

- Fee discount when using infrastructure equipment for immersive content production (50%, applicable for equipment that can be taken out)
- Discount (50%) on the use of international conference rooms and small/ medium conference rooms in Nurikkum Square
- Supporting information sharing and networking between move-in companies

## 2. Metaverse Campus

The training provided by Metaverse Campus is designed to equip people with the creative skills and production know-how required for the production of immersive contents such as XR and Metaverse.



[metaverse-campus.kr](http://metaverse-campus.kr)

### Course on project development that meets the needs of enterprise customers

This course is focused on the development of projects that meet the needs of enterprise customers.

### Course on advanced technologies used overseas

This course introduces advanced technologies used by leading overseas companies, and includes practical learning, site visits to overseas companies, and meetings with experts.

### Course on content production skills

This course provides XR technical education designed to enhance the skills of workers who are interested in switching jobs.



### 3. Co-production center

The co-production center provides invaluable infrastructure support for the production of advanced immersive contents to domestic small and medium-sized companies specializing in the production of immersive contents.

[www.kovacstudio.kr](http://www.kovacstudio.kr)

Immersive content production facilities	K-Immersive studio content utilization	Multi-stream relay support
Advanced systems and services for immersive content creation	Advanced systems and services for immersive content creation	Multi-stream relay system using 5G network

#### Infrastructure Facilities



#### K-Immersive Studio

A state-of-the-art immersive content production studio where a 360° stereoscopic digital model of a human body based on images of an actual person can be developed.



#### LED XR Stage

LED-based real-time XR contents production facility has its own graphic engine and a background screen on which actual images can be displayed.



### 4. XR Showroom

XR Showroom provides a secure base for developing business and raising awareness of XR contents through its permanent exhibition of outstanding XR contents.



#### XR content experience program

Operate experience programs for each customer type to experience XR and Metaverse contents

※ An immersive exhibition of contents that can be differentiated for different types of customers, such as students, employees, and the general public.



#### Commercialization & marketing support

Establish a business foundation through customized commercialization and marketing support for XR content companies.



#### XR Business Event

Maximize the business performance of XR Metaverse companies by arranging business consultations, seminars, conferences, etc.

# CHAPTER 02

## XR Showroom

- Introduction to XR SHOWROOM
- Experience Program of XR SHOWROOM
- XR Business Program

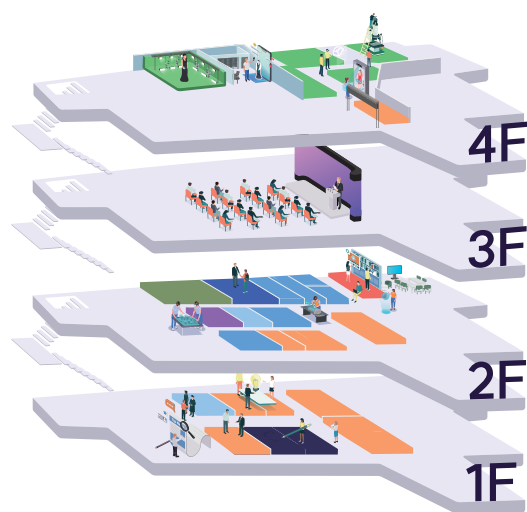




## Introduction to XR SHOWROOM

### Korea's best exhibition hall for XR and metaverse contents, XR Showroom

XR Showroom is an open space that enhances people's understanding of XR and metaverse, and supports the business of related companies. It also exhibits the outstanding achievements of XR and metaverse-related research institutes and companies. XR Showroom allows visitors to understand the present condition of the domestic XR/ metaverse industry with immersive contents converged with various industries such as law enforcement, national defense, firefighting, nuclear fusion, and manufacturing/ industry.



#### Exhibition (25 in total) of excellent XR convergence contents and XR Devices

- 4F : XR contents (medical-Health, entertainment)
- 3F : XR Business Venue
- 2F : XR contents (defense, police, nuclear fusion, industry, ect.)
- 1F : XR contents (education, entertainment.), XR Devices

● Police ● Defense ● Firefighting ● Nuclear fusion ● Industry ● Medical-Health  
● Education ● Entertainment ● XR Devices

## Experience Program of XR SHOWROOM

### Information on Using XR & Metaverse Experience Program


**Operating Hours** 10:00~17:00  
※ The service is closed on Saturday, Sunday and public holidays.


**Eligibility** - Those who work in industries desiring XR and metaverse business matching  
- Employees, students, and general public related to XR and metaverse businesses

**Group Visit** 10 or less persons (free service)

**Group Visit** Reservation should be made at least 2 days in advance until the end of the following month

#### Reservation Information

 [yh9908@nipa.kr](mailto:yh9908@nipa.kr)

 [kovaceng.modoo.at](http://kovaceng.modoo.at)

## XR Business Program

### A place of exchange in the XR and metaverse industry, KoVAC META Connect

KoVAC META Connect is a business event program that promotes exchanges between consumers and demand drivers and helps XR companies grow continuously through XR/metaverse technology seminars, business conferences, business matching, and XR company networking.

\* Refer to the news page related to business event attendance on the website ([kovac.modoo.at](http://kovac.modoo.at)).

#### Technology seminars and expert debates

Sharing the latest technology trends of XR/ metaverse and best practices

#### Business conferences

Matching between buyers and investors interested in XR/ metaverse companies and related industries

#### XR company networking

Supporting partnerships between XR and metaverse companies through networking and identifying ideas and technologies



# CHAPTER 03

## List of Exhibitors and Contents

- 01 Police
- 02 Defense
- 03 Firefighting
- 04 Nuclear fusion
- 05 Industry
- 06 Medical-Health
- 07 Education
- 08 Entertainment
- 09 XR Devices



# 01 Police

## XR-driven training system for responding to complex terrorism [POLICE XR]

- LOCUS Co., Ltd.
- Kaonmedia Co., Ltd.
- DONGGUK UNIVERSITY
- Electronics and Telecommunications Research Institute
- Gumi Electronics & Information Technology Research Institute

### Police

## XR-driven training system for responding to complex terrorism [POLICE XR]

**Hosting institution** LOCUS Co., Ltd.

**Participating institutions** Kaonmedia Co., Ltd., DONGGUK UNIVERSITY, Electronics and Telecommunications Research Institute, Gumi Electronics & Information Technology Research Institute

### Content introduction

The XR-driven training system for responding to complex coordinated terrorism implements the dangerous field situations virtually by using XR technology-driven AR devices, a threesided panoramic screen, and simulated firearms used in the actual field, and effectively reflects it into practical training. The system consists of the scenario editor for instructors to actively design the curriculum for good training results, a training controller system that controls the entire training program, and an evaluation system that closely evaluates training results.

### Applied technology

- High-quality education and training programs to improve the security and complex coordinated terrorism field response capability of the police
  - Analyzing the practical field situation, and developing response HRD-XR scenarios;
  - Programs for cultivating practical capabilities through VR and AR technology-driven feedback system training
- Developing new XR education/ training/ experiential services based on digital-twin resource
  - Linking with XR devices, firearm controllers, and video hardware equipped with three-sided screen
- XR education and training programs designed to gradually improve the capability of field personnel
- Developing a solution for simulating public security threats and complex coordinated terrorism scenarios capable of being edited
- Developing 10 major content scenarios along with transformation scenarios and elements
- Linking the scenario implementation graphic resource asset with a database
- Linking with intelligent NPC and implementing variable scenarios

### Business direction

- Commercializing experience in user-active content
- Producing and commercializing exhibition and experiential interactive content
- Developing new XR//training/experiential services equipped with digital twin
- Identifying and commercializing a new related occupational education and training program such as law enforcement, firefighting, etc.
- Promoting new business areas for XR devices and optical modules for XR devices
- Producing intelligent AI NPC, and commercializing motion-tracking technology



UNMATCHED CGI STUDIOS

# LOCUS Co., Ltd.



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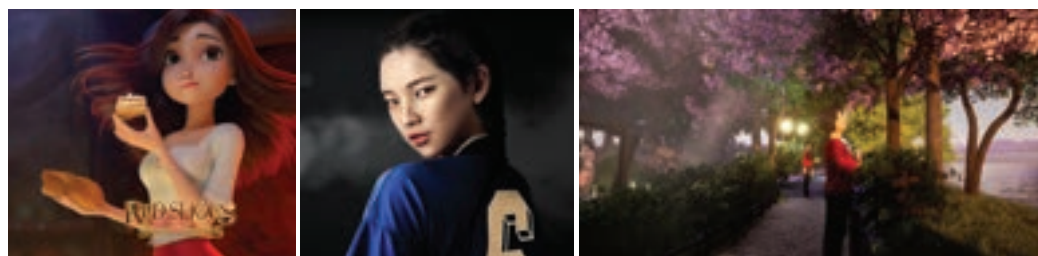
**Type of business** Animation, video, film production

**Business field** Film, drama, advertising content, CG/VFX, exhibition and new media

**Company introduction** Locus is Korea's best studio full of CG/VFX technology and creative stories. Since 2009, it has been creating a creative world where art and technology are harmonized on numerous screens and spaces, including 4,800 global animations, game cinematics, advertisements, movies, and dramas. Locus presents the content that delivers a new experience beyond the limits of content technology through constant investment and efforts in the field of new media, incorporating a virtual influencer, XR content, and interactive media art.

- Core technology**
- **Animation field** : Animation planning, production business, and IP licensing production
  - **VFX** : Planning/ production of CGI-driven digital advertising content, movie drama CG/VFX at the highest level in S. Korea
  - **DX(Digital eXperience)** : Exhibition and new media business, user active content planning/production, virtual environment directing and control technology based on interactive storytelling, and provision of a full lineup of research, planning, and development based on real-time engine workflow.
  - **Virtual influencer** : Advancing virtual influencer production and technology R&D such as Rosy, Hogonheil, and RyuID

- Major Achievements**
- 2012. Produced exhibition videos for Korea Hall at Yeosu World Expo (EXPO).
  - 2016. Produced exhibition videos for Korea Hall at Theme Hall, Kazakhstan EXPO.
  - 2017. Produced promotional content for the PyeongChang Winter Olympics.
  - 2019. <Red Shoes> Won the Presidential Award (Animation category) at the Korea Contents Awards.
  - 2020. Unveiled "Rosy", the first virtual influencer in S. Korea.
  - 2021. Produced CG and animation for TvN drama <Yumi's Cells>.
  - 2022. Incorporated as a subsidiary of Naver Webtoon, and expanded metaverse and IP businesses.
  - 2022. Selected as media art exhibition planning and production for popular webtoon IP.
  - 2022. Won a commendation from the Minister of Culture, Sports and Tourism at the Korea Contents Awards.



Global AI-driven total solutions

# Kaonmedia Co., Ltd.



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**Type of business** Broadcasting equipment manufacturing

**Business field** XR devices, AI solutions, OTT, network equipment

**Company introduction** Kaonmedia runs media, network equipment S/W, and mobile IP/ platform businesses based on AI solutions worldwide. Exports account for a large share of total sales, and the main markets include domestic and foreign broadcasting and telecommunications operators. Kaonmedia enters XR, AI, and 5G-related businesses, generates revenue, and invests in the development of XR devices with communication technology and contents related to the metaverse.

**Core technology** Kaonmedia developed a 2-in-1 hybrid XR device (band and helmet types) in 2021, and an ARdriven remote collaboration solution for technicians in remote places, which has been loaded in the XR device and utilized for the product manufacturing process of an affiliated company. Kaonmedia has also developed an all-in-one AR/VR variable XR device and a proprietary ARdriven solution that is applicable to various industries, and proposed it to various institutions, companies, and global customers for commercialization.

- Major Achievements**
- 2022. 12 : Developed an AR/VR variable XR device.
  - 2022. 08 : Joined UN Global Compact (UNGC), global initiative.
  - 2021. 12 : Developed a 5G-based XR device.
  - 2020. 08 : Received an order to develop an XR-driven complex coordinated terrorismresponse education and training system.
  - 2019. 01 : Obtained the Wi-Fi 6 Wi-Fi Alliance Certification and EasyMesh™ Certification.
  - 2013. 05 : Selected among the Top World-Class 300 Companies.



## Defense

## XR-driven scientific shooting training simulator [MARS]

**Hosting institution** OPTIMUS SYSTEM Co., Ltd.

**Participating institutions** KMA(Korea Military Academy), ISPark Co., Ltd.

### Content introduction

XR integrated observation training system based on spatial synchronization technology. This content is for military training and provides an observation training environment for training at the battalion level or higher to expand the existing small-unit military training. The previously developed small unit-level combat training is possible for small unit-level training within 10 to 20 soldiers. With the introduction of the observation training environment, larger than battalion-level virtual reality combat training is possible. This content mainly performs three types of observation training. Sniper observation training/Artillery observation training/Aerial observation training

### Applied technology

#### 1. Space Synchronization Technology

- A technology that matches real and virtual space's location and direction to realize a three-dimensional space according to changes in user position in the screen environment.

#### 2. Precision trajectory prediction technology

- A technology enables shooting training similar to live shooting by predicting a trajectory very similar to the real one according to season, weather, temperature, wind, type of gun, and bullet, through a 6-DOF (six-degree-of-freedom) trajectory prediction algorithm.

### Business direction

#### Commercialization of XR integrated observation training system

- In the process of introducing an observation training system to enhance the training capabilities of the ROK military's scientific training system
- Promoting export by entering the overseas virtual reality military training market



## 02

## Defense

## XR-driven scientific shooting training simulator [MARS]

- OPTIMUS SYSTEM Co., Ltd.
- KMA(Korea Military Academy)
- ISPark Co., Ltd.



Zeroing fire training



Record firing training



Combat firing training - Urban/outdoor areas



Combat firing training - Mountain/coastal areas



Specialized in next-generation VR education and training systems

# OPTIMUS SYSTEM Co., Ltd.



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• **Phone** 031-234-6176

### Type of business

Development and sales of software system, AR/VR Equipment Development

### Business field

Development and sales of virtual reality education and training system and contents  
Development and consulting of digital manufacturing simulation S/W.

### Company introduction

Optimus Systems is a supplier of next-generation virtual reality-based education and training systems. Optimus System provides an education and training environment with a new concept using its own technology that suits the user's goal.

### Core technology

Patents for robot control technology and virtual reality simulator-related element technology

### Major Achievements

- Virtual reality-based practical combat training system development (2017-2018)
- Development of XR integrated observation training system based on spatial synchronization technology (2020)
- Supplied to the virtual reality combat shooting training field of the Korean reserve forces (2019-2020)
- Supplied a virtual reality combat shooting simulator to Military School of Army Student (2020)
- Expanded application of virtual reality military training simulators to the Korean military is in progress. Overseas export of related products is in progress.



# KMA(Korea Military Academy)



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**Type of business** A four-year military college to train army officers  
Conducting R&D in various military fields such as artificial intelligence, virtual reality, robots, etc.

**Company introduction** Founded in May 1946 as a four-year Military Academy that fosters Korean army officers, it is an educational institution that aims to cultivate elite officers who respect humans.

**Core technology** Possession of virtual reality military training element technology and various military element technology such as artificial intelligence, robots, etc

**Major Achievements**

- Development of VR-based practical combat training system (2017-2018)
- Development of XR integrated observation training system based on spatial synchronization technology (2020)



# 03

## Firefighting

### Initial fire response capability improvement system for fire safety managers

- Yonsei University Industry Foundation
- SIMNET Co., Ltd.
- Hanbitsoft Inc.
- UTEC Co., Ltd.
- Hoseo University Industry-University Cooperation Foundation
- National Fire Assessment Institute

Firefighting

# Initial fire response capability improvement system for fire safety managers

**Hosting institution** Yonsei University Industry Foundation

**Participating institutions** SIMNET Co., Ltd., Hanbitsoft Inc., UTEC Co., Ltd., Hoseo University Industry-University Cooperation Foundation, National Fire Assessment Institute

03

Firefighting

### Content introduction

Participating institutions have developed tangible virtual training systems and contents driven by VR (virtual reality), AR (augmented reality), MR (mixed reality), digital twin, immersive 3D-treadmill, and haptic gloves technology in order to improve the capabilities of fire safety managers.

Participating institutions have developed a total of three simulation systems, including firefighting facility operation check simulation for fire safety managers using AR technology in order to develop contents of the above metaverse training system, immersive firefighting education and training simulation inside the virtual digital twin building using VR and 3D-treadmil technology, and an online remote education system that does not require separate VR/AR equipment.

### Applied technology

- (Offline) XR-driven VR education and training system (fire evacuation simulation);
- (Offline) XR-driven AR training system (firefighting facility operation/inspection simulation);
- (Online) Non-face-to-face XR content online simulation platform
  - Developing a module for analyzing digital twin scenario deployment to reproduce fire scenarios in a tangible way;
  - Developing a module to enhance firefighting facility inspection capability equipped with digital twin interaction using voice/motion recognition;
  - Designing core technology for firefighting facility training materials exclusively for fire safety managers, firefighting scenarios, and education/training/evaluation factors;
  - Analyzing fire spread scenarios for XR implementation, based on the actual field according to various response measures in the event of fire outbreak;
  - Developing XR systems and authoring tools to support realistic fire safety training using advanced technology

### Business direction

#### Packaging a solution by lowering interdependence between core technologies to configure variable and parallel pipeline based on modularization

- Carrying out a 2-track strategy for transfer (sale) of developed technology;
- (Direct transfer) Smooth technology transfer and solution distribution by forming a consortium through collaboration, co-production, and outsourcing with related companies and developers/ producers using the existing CGI pipeline;
- (Indirect transfer) Evaluating the business value by verifying and improving commercial quality continuously and checking the profitability of the completed solution, while also supplying products by linking with vendors specializing in technology commercialization and industry-university-institute.

#### Type of commercialization: B2G and B2B market sales as an XR-driven firefighting education/training solution.

- The demand for education and training related to firefighting is increasing worldwide, as large-scale fire outbreaks get more frequently at home and abroad.
- More firefighting, security and anti-terrorism equipment are exported continuously, based on Korea's excellent ICT technology.



03

Firefighting

# Yonsei University Industry Foundation



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## Type of business

School

## Business field

Business facility management, business support and rental service

## Company introduction

\* Based on the chief officer

- Developing an AR-driven integrated training simulator for responding to disasters
- Developing multi-media and multi-path adaptive network technology
- Developing emergency preparedness training technology in units of organizations based on simulation
- Developing vertical mobile communication network technology based on wireless optical communication
- Developing intelligent stealth technology that minimizes unwanted exposure of information and communication resources for public affairs and duties
- Developing reliable linking technology in a mobile national defense environment for sharing information in real time
- Developing a dynamic thematic map based on a fixed/mobile platform to build nextgeneration digital land information

## Core technology

\* Based on the chief officer

- Holds many papers and patents on AI, big data, and 5G networks.
- Implemented many development projects for XR and AI-driven technology and camera motion recognition technology. (Development of an AR-driven integrated training simulator for responding to disasters, real-time convergence monitoring system driven by complex AR and AI for unconscious workers and workplaces)
- Consulted on various evaluation systems in the ICT field.
- Conducted a development project for an integrated AR-driven disaster response training simulator (Won an award from the Minister of Public Administration and Security).
- Made strong contribution to R&D in the field of smart public security for the National Police Agency.

## Major Achievements

\* Based on the chief officer

### (Papers)

- (SCI/SCIE) DQN-Based Optimization Framework for Secure Sharded Blockchain System, IEEE IoTJ, 2021
- (SCI/SCIE) URLLC Mode Optimal Resource Allocation to support HARQ in 5G Wireless Networks, IEEE Access, 2020
- (SCI/SCIE) Clustered Virtualized Network Functions Resource Allocation based on Context-Aware Grouping in 5G Edge Networks, IEEE TMC, 2020
- (SCI/SCIE) Prediction-Based Conditional Handover for 5G mm-Wave Networks: A Deep-Learning Approach, IEEE VTM, 2020
- (SCI/SCIE) DEFT: Multipath TCP for High Speed Low Latency Communications in 5G Networks, IEEE TMC

### (Patents)

- Apparatus and method for offloading the computing amount by task priority in a fog computing-based wireless network;
- Apparatus and method for adaptively managing the Deep Q Network-oriented sharded blockchain network;
- Real-time analysis classification method of signal data using hybrid machine learning;
- Adaptive control method, apparatus and user device for providing real-time video with network cameras

Specialized in national defense modeling & simulation

# SIMNET Co., Ltd.



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## Type of business

Software development and supply, and consulting

## Business field

National defense M&S system, simulator and CBT, ICT/SI

## Company introduction

Established in 1999, Simnet is specialized in modeling & simulation, has contributed to the development of domestic AR-related industries by participating in various defense field simulation and simulator development projects in order to develop core technologies, and has cultivated technical manpower since its inception. Simnet is becoming the best defense M&S company in S. Korea by combining defense experts with advanced ICT technologies (IoT, augmented reality, AI, etc.).

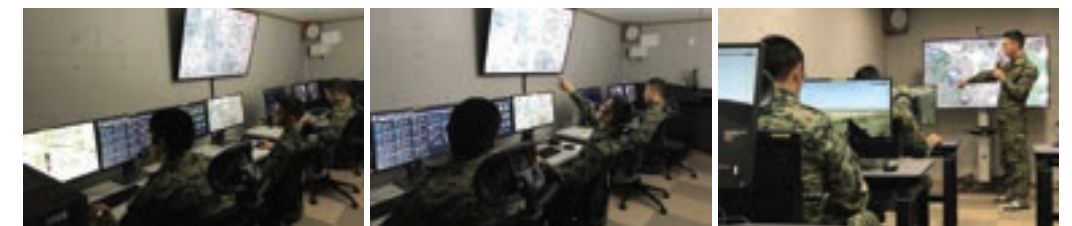
## Core technology

- Engagement simulation technology in the unit of troops/units;
- Multi-resolution conversion/ modeling technology;
- Live-virtual-constructive integration architecture technology;
- XR technology-driven virtual environment creation technology;
- Haptic feedback and motion platform interface technology

## Major Achievements

- Intelligent virtual training system for special forces-geared tactical training (2017);
- Development and mass production of the joint firepower simulator system (~2021);
- Development of the integrated battlefield training system (Build-I) for the Army (2021-present);
- Production and performance improvement of the tank gunnery simulator (~2022);

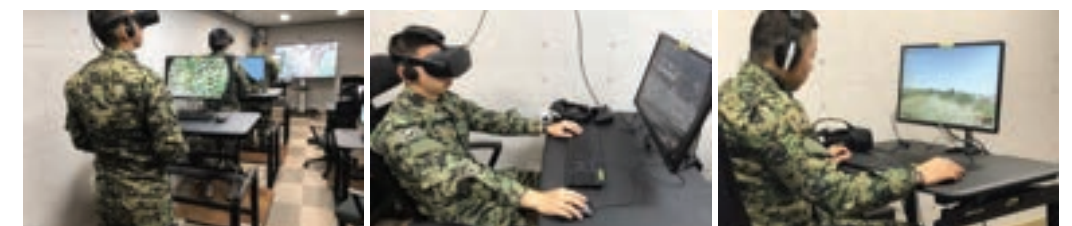
### Intelligent Virtual Training System for Special Forces-Geared Tactical Training



Real-time training control

Battlefield environment monitoring

Follow-up comments



Action-type training mode

Immersive training mode

PC-type training mode

Development and Mass Production of the Joint Firepower Simulator System

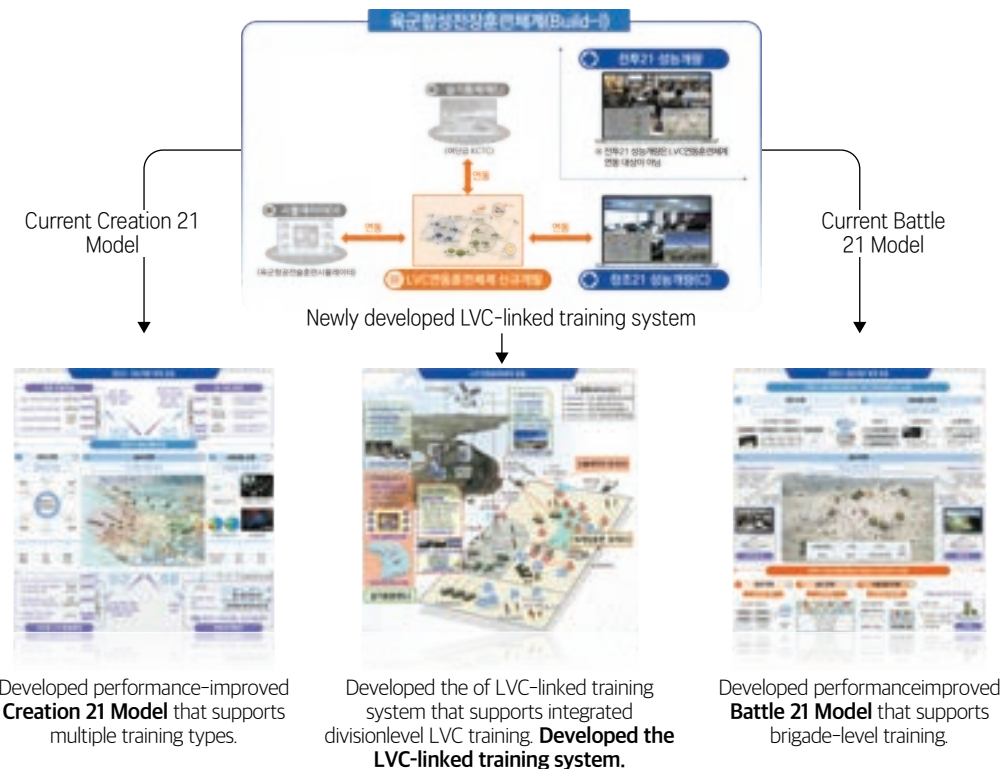


<Actual training site of the joint firepower simulator>

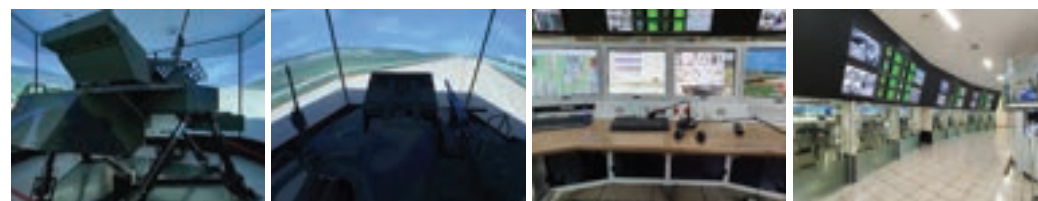
The development of the joint firepower simulator commenced in November 2015 with joint investments from small and medium-sized businesses and the government, and was completed in December 2018. Starting with the Army in early 2020, it replaced the existing Forward Observation Training Simulation and completed its deployment with the Marine Corps in November 2021.

For real-life training, Simnet is designed to enhance training effectiveness by modeling buildings and targets according to the level required by the military and separately developing Forward Observation Training Simulation that imitates actual equipment.

Integrated Battlefield Training System (Build-I) for the Army



Gunnery Simulation Training Equipment for K1A2 Battle Tanks



Publishing company representing the Korean game industry

Hanbitsoft Inc.



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Type of business

Publishing, video, broadcasting communication and information services

Business field

Game development and service

Company introduction

HanbitSoft is a leading publishing company that serves various genres of PC online games and mobile games in the Korean game industry, and has positioned itself for a new leap forward by applying metaverse and AR/VR to the services.

HanbitSoft provides differentiated game experiences to users, based on extensive experience and assets accumulated providing various services for a long time, and leverages its game IPs and capabilities to flexibly and passionately develop new areas for diversified revenue sources.

It is currently developing a platform to create a metaverse avatar that adopts the unique voice of the user using AI technology. Using this platform, users can create their 3D avatars that mimics their own voices and emotions. They can use this platform in various fields/platforms such as the metaverse.

HanbitSoft's lineup of online PC games include "Audition", a stylish rhythm dance game that recorded 700 million cumulative users worldwide, "Granado Espada" and "Aika", MMORPG games that won the Korea Game Grand Prize owing to differentiated game characteristics, and "Hellgate: London" and "Mythos" that established a firm global fan base. Mobile games in service include "Club Audition", a rhythm dance game using the IP of "Audition", "Puzzle Audition", a puzzle game, and "The Fishermen and the City M", a fishing game using popular entertainment IP "The Fishermen and the City"

Core technology

- Experience in developing multiple simulators, such as augmented reality-oriented integrated disaster response training simulator;
- Experience in developing various projects over two decades, such as gaming/ game tools/ network game/ AR/MR;
- Participation of experts in Fourth Industrial Revolution technology fields such as artificial intelligence, healthcare, XR, and blockchain;
- Participation of the research team tasked with conducting a project to develop the integrated disaster response training simulator;
- Participation of many researchers with implementation capabilities for developing the disaster response education and training system

Major Achievements

- Developed the XR-driven responsive education/ training and evaluation system for fire safety managers (extended reality)
  - Carrying out the third-year project in 2023; Performed the advancement of the "one-person household safety care service" for KEPCO
  - Completed development in 2022;
- Developed the AR-driven integrated disaster response training simulator
  - Applied to training for responding to harmful chemical substance leakage accident for Ulsan Metropolitan City in 2019;
  - Signed an "outsourcing agreement for developing an integrated disaster response training system" with the Jeungpyeong-gun municipality in 2021;
- "Integrated platform development project for the VR sports class" on behalf of the Korea Sports Promotion Foundation
  - Scheduled to supply the system to 500 schools nationwide by the first half of 2023
  - Selected as a member of "50-Billion Won Club" by the Korea Software Industry Association in 2022



AI-driven big data and XR-driven metaverse solution

# UTEC Co., Ltd.



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**Type of business**

Application software development and supply

**Business field**

AI-driven big data platform, AR-VR-XR-driven data solution, engineering IT and SI, disaster/safe environment information platform, web solution and software development

**Company introduction**

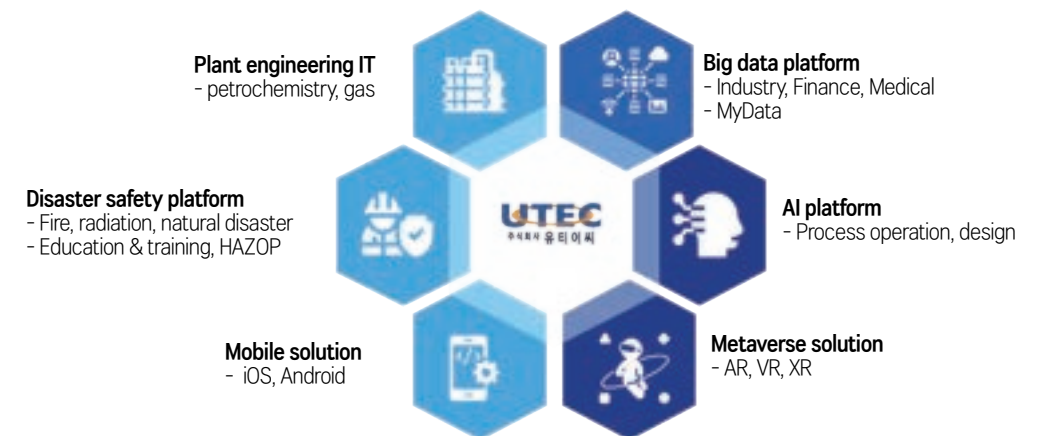
- As-is: Company securing AI-driven big data solutions & XR-driven basic metaverse technology
- To-be (2025): Company expanding the AI-driven big data arena & XR-driven metaverse solution
- Vision (2030): Company with an AI-driven big data platform & XR-driven metaverse solution/digital twin & cloud mobile infrastructure

**Core technology**

- Plant engineering IT
- Big data platform, disaster safety platform, artificial intelligence platform
- Mobile solution, XR/smart device-equipped metaverse solution

**Major Achievements**

- Won the order for the SI development project from Construction Workers Mutual Aid Association (2022)
- Developed data-based engineering rule library for verifying design errors (2022)
- Acquired Inno-Biz Certification (2020)
- Acquired the certification of excellent technical evaluation company: Nice Information Service (2020)
- Won an award certificate from the Deputy Prime Minister and Minister of Strategy and Finance (2019)



## Hoseo University Industry-University Cooperation Foundation



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- **Address** 20, 406 beon-gil, Asan valley-ro, dunpo-myeon, Asan-si, Chungcheongnam-do, Korea

**Type of business** School

**Business field** Business facility management, business support and rental service

### Company introduction

- The foundation plays a pivotal role in laying the foundation to create a creative economy ecosystem by creating innovative idea value and concentrating on fostering venture companies using various start-up support systems.
- The foundation also contributes to revitalizing the creative economy by cultivating workforce talents with creative and practical skills and linking them with customized job-linking activities.
- The foundation promotes the growth of enterprises by supporting the infrastructure for an industry-university-institute cluster on the largest campus in S. Korea and by supplying workforce talent. It also supports the development of the university by granting scholarships and research funds to about 1,300 affiliated companies and performing various cooperative projects.

### Core technology

- This foundation has a deep understanding of firefighting and fire hazards by conducting fire investigations, research on automatic fire detection equipment, fire demonstration, and real fires. In addition, the foundation has carried out the national project for research on the activity analysis and training plans of field firefighters to design training scenarios involving chemical accidents and terrorism. At the same time, the foundation has accumulated the know-how of key elements for scenario design by developing scenarios for chemical terrorism response training (by spraying anhydrous ammonia gas at subway complex stations), a curriculum for operating chemical terrorism response equipment, and training scenarios involving chemical accidents and terrorism. Therefore, the foundation can utilize this expertise when designing element technologies and fire response scenarios to produce the training materials targeted for this project.
- The foundation strives to achieve good research results by applying key training elements required by government agencies, after signing an MOU and cooperative institution agreement with the National Fire Service Academy Gyeonggi-do Fire Services, and Chungcheongnam-do Fire Services.

### Major Achievements

- Submitted about 80 papers and registered 7 patents.**
- (Paper) Fire Detection Tendency through Combustion Products Generated during UL 268 Wood Flame Fire & Smoldering Fire Test
  - (Paper) Fire Detection Factor of Polyurethane Foam Fire Experiment in UL 268 (2021)
  - (Paper) Study on the Development of Fire Extinguishing Agent & Extinguishing System for ESS Fire (2020)
  - (Paper) Experimental Study on Fire Risks due to Overcharge & External Heat of ESS Lithium Battery (2019) as well as 58 more papers.
  - (Patent) Device for inspection of smoke detectors (No. 10-0991614)
  - (Patent) Device for inspection of smoke detectors (No. 10-1018968)
  - (Patent) Test Apparatus for Rate of Rise Sport Type Heat Detector (No. 10-1066956)
  - (Patent) Addressable user-oriented P-type automatic fire alarm system (No. 10-1100)



# National Fire Assessment Institute



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03

Firefighting

**Type of business** Advice and consulting

**Business field** Fire risk diagnosis, etc.

## Company introduction

- The institute is a non-profit corporation established to improve expertise in the field of firefighting safety and to establish an advanced safety culture by conducting research on firefighting safety management, and risk assessment.
- The institute contributes to the development of firefighting technologies by improving the autonomous safety capabilities of the private sector in the firefighting safety field and developing technologies for identifying, diagnosing, and evaluating fire hazards and distributing them free of charge.

## Core technology

- Fire risk assessment tool (risk diagnosis technique by fire growth stage): Risk diagnosis technique that reflects changes in response factors in line with the fire growth stage  
\* Fire growth stage: Fire prevention → Detection & alarm → Initial response → Fire extinguishing equipment → Municipal fire brigade → Fire resistance performance of the building

## Major Achievements

- Fire safety rating system (F-SM, F-SP, F-SA, F-DHA field, etc.)  
\* Diagnosed the fire safety of many companies, including Korea South-East Power, Korea Midland Power, Samsung Electro-Mechanics, Samsung Biologics, LG Innotek, and SK Telecom
- Fire safety diagnosis (i.e. application of diagnosis tool geared to workplace characteristics)  
\* Hyundai Motors, Kia Motors, LG Innotek, SK Siltron, LG Science Park, Noroo Group, SK Bioscience, etc.
- Specified safety training for companies (i.e. fire response training & education tailored to characteristics of each industry)  
\* Korea South-East Power, Multicampus (for Samsung group safety team employees)

04

# Nuclear fusion

## XR-driven fusion energy facility operation based on digital twin

- TriTech Co., Ltd.
- Korea Institute of Fusion Energy
- VRMEDIA Inc.
- Sans Frontier Technology Co., Ltd.

Nuclear fusion

# XR-driven fusion energy facility operation based on digital twin

**Hosting institution** TriTech Co., Ltd.

**Participating institutions** Korea Institute of Fusion Energy, VRMEDIA Inc, Sans Frontier Technology Co., Ltd.

## Content introduction

### Developing software to provide virtual KSTAR experiment monitoring & simulation analysis functions

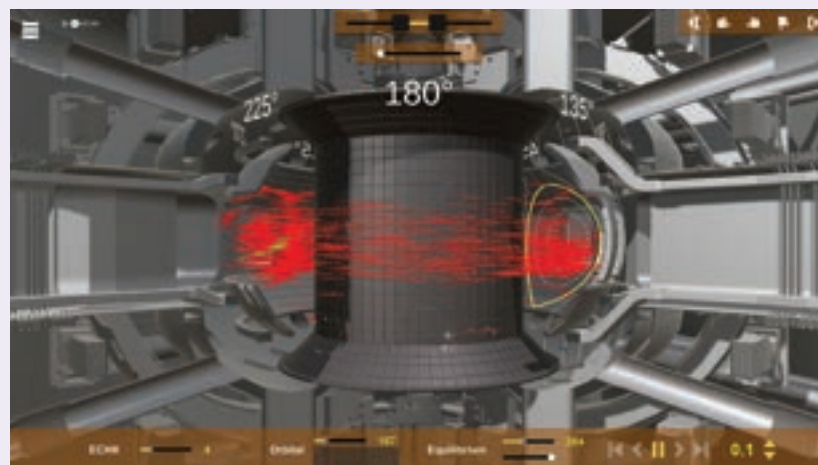
- Software development for KSTAR design data configuration management
- Advancing the function of monitoring KSTAR operation & experiment
- Virtualizing KSTAR fusion devices using XR technology
- Visualization of KSTAR fusion experiment information using XR technology
- Realization of virtual fusion experiment and joint research VR platform by implementing XR-based fusion physical engine
- Development of educational/ training system for fusion VR platform based on digital twin
- Development of dome-shaped display system

## Applied technology

- Developing WAS
- Visualizing the temperature distribution of internal & external walls, and information of plasma equilibrium magnetic field reconstruction in real time
- Visualizing the operation status of superconducting magnet in real time
- Designing the HDF5 framework
- Designing and developing the HDF5 framework for nuclear fusion data integration
- Checking traffic load for interfacing with the KSTAR experimental network
- Designing an automatic grid extraction design from 3D grid information

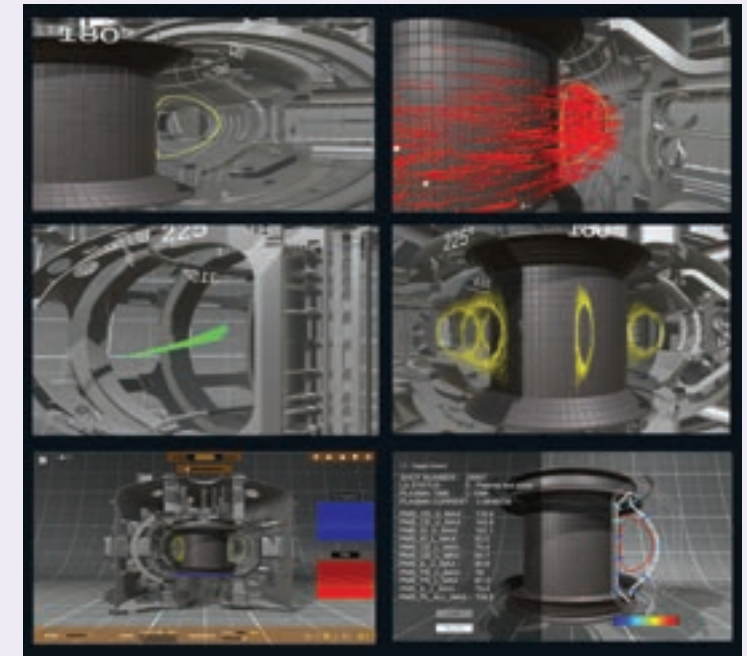
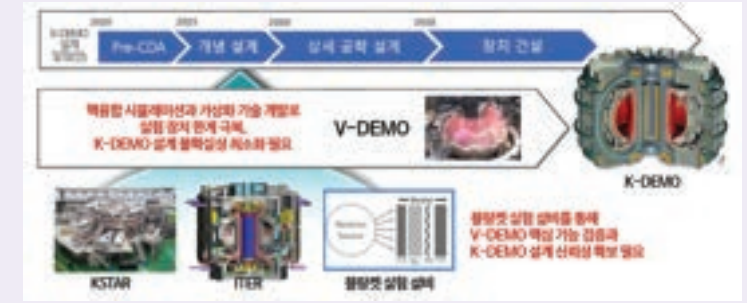
## Business direction

By enhancing the currently developed program, we will virtualize the experimental data in real time for KSTAR, a domestic nuclear fusion research facility, and sequentially develop Edge-VR technology step-by-step according to the nuclear fusion test technology to enable simulation through interaction between objects in a virtual tokamak. Concurrently, we are working on ITER, an international nuclear fusion research facility, with the Fusion Energy Research Institute, so that this project can gain traction in the global market.



### XR + Nuclear fusion

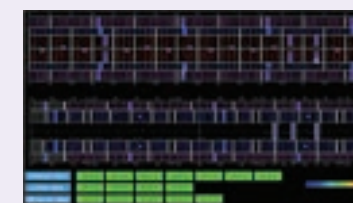
\* 2020\_2022: Virtualization & visualization of the KSTAR nuclear fusion device using XR technology



Advancing the Function to Monitor KSTAR Operation & Experiment

### Implementing the function of virtual KSTAR experiment monitoring & simulation analysis

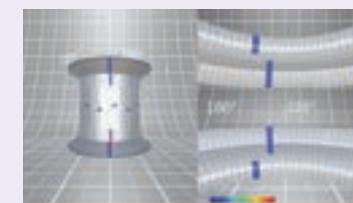
\* 2023\_ Developing software to provide virtual KSTAR experiment monitoring & simulation analysis functions



Screen that displays 2D image of internal/external walls & the temperature value of representative PV sensor



Screen that displays 3D modeling of interior/ exterior walls, history, & console command input



Screen that displays 3D modeling of interior/ exterior walls



Replay drive screen

XR-driven fusion energy facility operation based on digital twin

# TriTech Co., Ltd.



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**Type of business** The information and communication industry

**Business field** The information and communication industry. Application software development.

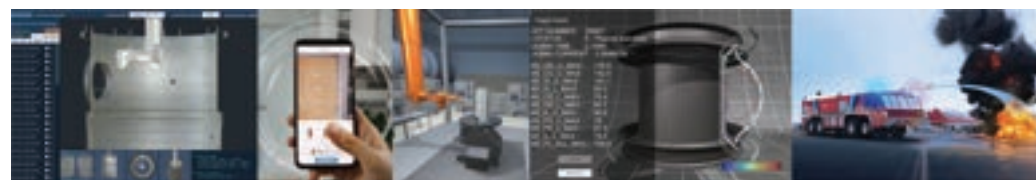
**Company introduction** As a research institute with the best technology and concrete business performance cases in Korea, we provide VR/ AR-based simulators, ART technology, and eco-friendly waste treatment technology solutions and services.

**Core technology** DigitalTwin / Metaverse / VR.AR.MR.XR Simulation / ICT / Cloud Platform / M&S (Modeling & Simulation)

**Major Achievements**

- Developed a non-face-to-face 3D studio platform for 3D animation production
- Developed a firefighting ladder car operation simulator
- AR Service APP \_ Interior design & ordering system
- Developed software to provide virtual KSTAR experiment monitoring and simulation analysis functions
- RVI (Reactor vessel internals) decommissioning simulation system enabled by ICT

## Our History



- | Pre-2019                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2020                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2021                                                                                                                                                                                                                                                                             | 2022                                                                                                                                                                                                                                                                                                                                                                                          | 2023                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>- Fire command training simulator</li> <li>- Simulator for training on high-elevation work platform</li> <li>- Virtual safety experience center for GS E&amp;C</li> <li>- Developed team unit tactics &amp; road training simulation at fire disaster sites.</li> <li>- Developed a Taekwondo body protector simulator for sports training driven by ICT convergence .</li> <li>- Developed a welding simulator.</li> </ul> | <ul style="list-style-type: none"> <li>- Developed a remote virtual decommissioning simulation system integrated with RVI (Reactor vessel internals), decommissioning equipment, &amp; decommissioning scenario (2020-2022).</li> <li>- Developed a digital twindriven VR system for operating fusion energy facilities (2020-2021).</li> <li>- AR service app for interior design &amp; ordering system using augmented reality (2020-2021)</li> </ul> | <ul style="list-style-type: none"> <li>- Established TriTech Co., Ltd. (formerly Sangmyung University Institute of Future Innovation &amp; Convergence Technology)</li> <li>- Developed a non-face-toface 3D studio platform for 3D animation production (2021-2022).</li> </ul> | <ul style="list-style-type: none"> <li>- Established the affiliated research institute of TriTech Co., Ltd.</li> <li>- Developed software to provide virtual KSTAR experiment monitoring &amp; simulation analysis functions (2022 to 2023) .</li> <li>- Developed a digital twindriven complex cutting simulation system for decommissioning the nuclear power plant (2022-2023).</li> </ul> | <ul style="list-style-type: none"> <li>- Developed a simulator for operating the firefighting ladder truck (2022-2023).</li> <li>- Digital twin research resource platform service among multiple parties in metaverse environment (2022-2023).</li> </ul> |

## Key Business

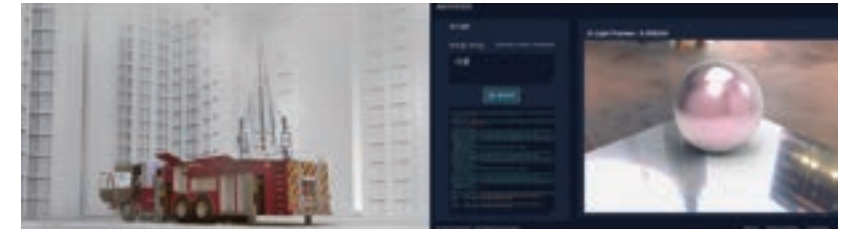


### RVI (Reactor vessel internals) decommissioning simulation system

Developed a system for verifying an RVI decommissioning scenario by simulating the function of automatic generation of optimal decommissioning path in the internal space of nuclear power plants

### Simulation analysis system for virtual KSTAR nuclear fusion

3D spatial information analysis & modelling of the KSTAR nuclear fusion device, visualizing plasma experiment data using a physical engine

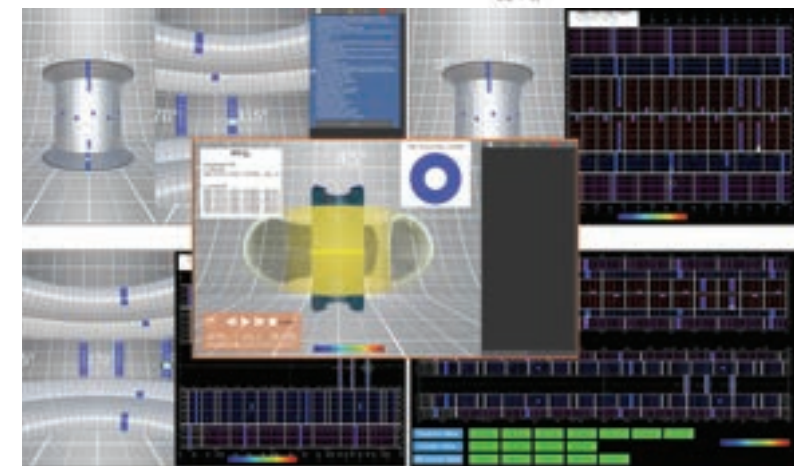
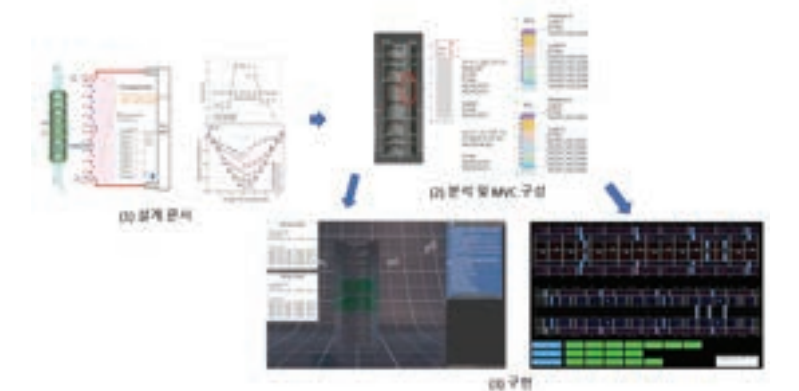


### Firefighting ladder truck operation simulator

Developed a simulator to prevent firefighting & industrial safety accidents through VR-driven training with the firefighting ladder truck operation, and implemented localized training geared to domestic fire trucks

### Non-face-to-face 3D studio platform for animation production

Supported the integrated 3D animation production service platform based on cloud computing, and the custom platform module for AI writing/ rendering production & job searches.



leading research and development organization for fusion energy in Korea  
**Korea Institute of Fusion Energy**



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**Type of business** Research and Development

**Business field** Nuclear fusion

**Company introduction** As a leading research and development organization for fusion energy in Korea, we pioneer nuclear energy independence and climate change responses through nuclear fusion energy.

- As a leading research and development organization for fusion energy in Korea, we pioneer nuclear energy independence and climate change responses through nuclear fusion energy.
- Operation business of KSTAR, a superconducting nuclear fusion research device;
- Joint development project for an international fusion test reactor;
- Fusion energy engineering research for demonstration of electricity production;
- Development of plasma source technology and practical technology for industrial use

**Core technology**

- Design, construct, and operate technology of superconducting nuclear fusion research equipment;
- High-temperature and high-density plasma long-term operation control technology;
- Parallel supercomputing fusion simulation technology;
- Production of plasma characteristics and physical properties DB, bio-material plasma fusion technology, etc.

**Major Achievements**

- Succeeded to operate KSTAR, a superconducting fusion device, at 100 million degrees Celsius for 30 seconds, a first-ever in the world;
- Design of international fusion test reactor ITER super-large assembly equipment; Production of the first-ever vacuum container body, etc.



The intersection between virtual reality and reality

**VRMEDIA Inc.**



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**Type of business** Information and communication industry

**Business field** XR-VR-AR-MR-metaverse

**Company introduction** The intersection between virtual reality and reality - we create everything in virtual reality and connect everyone to a new digital world. Since our establishment in 2016, VRMEDIA Inc. has grown with various projects experience and high technology related to VR/AR, from VR/AR content production to VR experience zone and system construction.

Core technology	Sector	Technologies possessed
<b>Realistic content production technology</b>		Super high-resolution projection mapping source production technology
		8K UHD, 3D/ 4D stereoscopic and pre-visualization technology
		4D simulator & content program interworking technology
<b>AR content production technology</b>		Hologram content & system implementation technology
		Beacon-based AR game production technology
<b>VR content production technology</b>		Navigation-linked application production technology
		SDK Applied technology
<b>VR content production technology</b>		360 VR video & interactive VR game production technology
		VR simulator control technology, server construction, and DB management technology

**Major Achievements**

5 patent applications related to VR/ AR			
	Application name	Application date	Application No.
	Security monitoring device & method using augmented reality	2015.08.05	10-1543712
	VR shooting game device	2018.07.20	10-1882219
	KIOSK-based payment system	2019.02.12	10-1949258
	360 degree video recording device & 360 degree video editing method	2019.05.14	10-1980086
	AR-based remote support system and its operation method	2021.05.26	10-2259350

2017	2018	2019	2020	2021	2022
Establishment of an affiliated research institute;	Venture business certification  Development of ICT experience program for the Pyeongchang Olympics;  Development of VR experience content for the Presidential Security Service;  Play Expo VR game "Gron" selected for Excellent Game Exhibition;	Gwangju World Swimming Championships ICT Experience Center - VR/ AR content development and experience zone construction;  Construction of VR/ AR experiential center of Semyung University;  Development of AR contents of Goseong Dinosaur Expo;	Construction of VR/ AR production center of Daegu Digital Industry Promotion Agency;  Construction of VR/ AR production center at Chungbuk Institute of Science & Technology;  Construction of VR/ AR system for Keimyung University's Future Industrial Usability Assessment Center;  Development of AR-based educational process system for Hyundai Motor Company;  Establishment of VR/ AR Demonstration Center system for Korea Electronic; Member of Information and Communication Industry Promotion Association;	Development of Semiconductor VR content for Ajou University;  Development of AR contents for Sunshine Land in Nonsan;  Development of AR tourism content for Gongju-city;  Development of metaverse platform and educational process content for nursing/ semiconductor professionals.  Developed an AR assembly training system for Hyundai Motors;  Developed a metaverse platform for Samsung Heavy Industries;  Developed a metaverse platform for SIGNIS World Congress 2022	Built the development support center for digital treatment devices at Gangwon Technopark;  Developed an app for National Ocean Science Museum;  Created digital cultural contents for East Rampart Park at the earthen rampart, Pungnap-dong, Seoul;  Developed an AR assembly training system for Hyundai Motors;  Developed a metaverse platform for Samsung Heavy Industries;  Developed a metaverse platform for SIGNIS World Congress 2022



# 05

## Industry

### Digital Twin XR-driven manufacturing facility operating system

- Korea Electronics Technology Institute
- VIRNECT Co., Ltd.
- STANS Co., Ltd.
- Research Institute of Industrial Science & Technology
- Onmakers Inc.
- Frontis Co., Ltd.
- Electronics and Telecommunications Research Institute(ETRI)

### Industrial digital twin/ metaverse-enabled smart factory solution [FLEXING Metaverse]

- UVC Co., Ltd.
- Inster Inc.
- Truedata Inc.
- TELSTAR HOMMEL Co., Ltd.

### Construction and Shipbuilding Industry

#### Construction machine training solution [VRCMS]

- BIG PICTURES Co., Ltd.

#### 1 Industrial safety VR content

#### 2 Tourism metaverse [Tour Planet]

- NOVATECH Co., Ltd.

### Mobility Industry

#### Training for VR-enabled electric vehicle certification test

- WABOTECH Co., Ltd.

#### VR drone simulator [ISDDS Ver2.0]

- Doublebears Co., Ltd.

Industry | Digital Twin

# XR-driven manufacturing facility operating system

**Hosting institution** Korea Electronics Technology Institute

**Participating institutions** VIRNECT Co., Ltd., STANS Co., Ltd., Research Institute of Industrial Science & Technology, Onmakers Inc., Frontis Co., Ltd., Electronics and Telecommunications Research Institute(ETRI)

**Content introduction**

**XR manufacturing facility operation solution equipped with digital twin (i.e. remote collaboration, process performance, training & maintenance)**

- Developing an XR manufacturing equipment operation system for optimal operation in a digitized on/offline convergence environment by applying digital twin-based immersive technology (XR digital twin), ① verifying XR digital twin solutions early at the demo factory, ② acquiring success stories from their actual application in operating factories, and ③ distributing and dispersing these solutions to multiple factories

**Applied technology**

**Digital twin technology**

- Building AI-driven digital twin models
- Data streaming platform for building intelligent digital twin models for detecting anomalies.
- Digital twin-enabled facility diagnosis & failure prediction service for secondary battery cathode materials
- Making the digital twin of the co-precipitation process control model + process optimization through meta-learning for secondary battery cathode materials

**Implementing a virtual manufacturing space**

- Building a manufacturing metaverse service environment
- Visualizing web clients using intelligent digital twin

**Twin operating system**

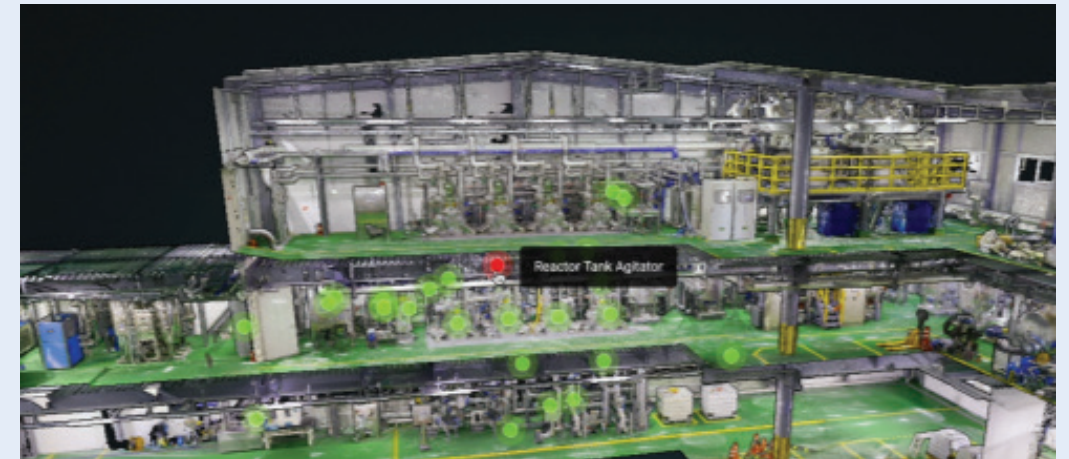
- Developing an intelligent system that supports the analysis of manufacturing facility data
- Developing a 3D virtual space-enabled site safety/ asset management system

**XR digital twin solution & training solutions**

- Remote collaboration, process performance, maintenance, education & training

**Business direction**

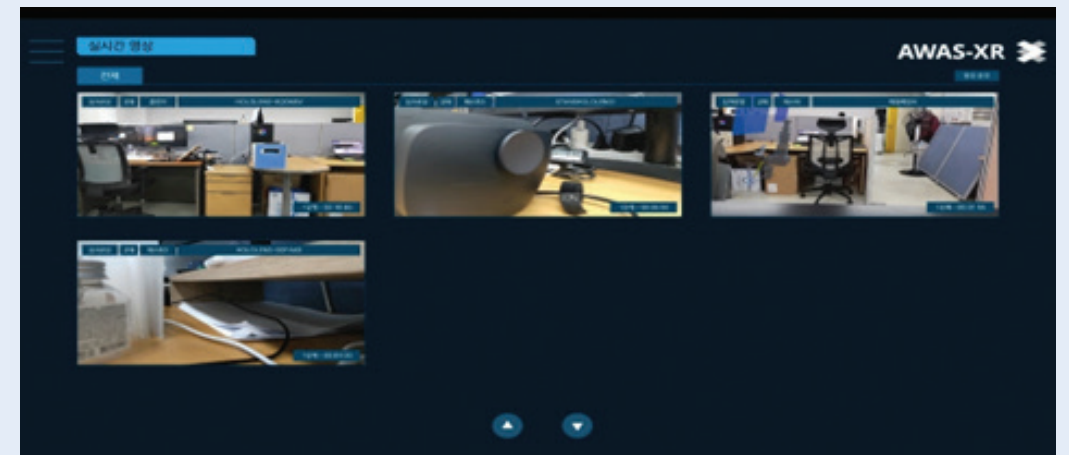
- Reducing time to train new employees by educating/ training workers and increasing training effect
- Increasing sales by acquiring successful cases of advancing global factories of conglomerates using XR digital twin technology
- Strengthening factory competitiveness of SMEs, acquiring success stories, and overcoming limitations due to labor costs for domestic manufacturing plants by using XR digital twin technology => Ramping up reshoring of overseas factories
- Distributing and dispersing it to demand-making companies that produce similar processes & products, based on successful cases



Intelligent digital twin screen



Perform the manufacturing process



Educational training contents

Strengthening the global competitiveness of the electronics industry and platform for corporate growth

## Korea Electronics Technology Institute



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- **Address** 25 Saenari-ro (Yatap-dong), Bundang-gu, Seongnam-si, Gyeonggi-do

### Company introduction

Increasing the global competitiveness of the electronics industry and playing a role of a growth platform for enterprises by developing leading technology in the electronics field and IT industry, while also leading technical innovation and commercialization of SMEs



#### R&D

Preemptive development of next-generation new technologies in the electronics & IT industry.



#### Commercialization support

Supporting commercialization, such as technology development, technology transfer, and consultation on difficult technologies



#### Infrastructure provision

Reliability tests, evaluations, analyses and supporting the use of advanced research equipments

### Core technology

- Collecting digital twin data for process prediction, prognostic diagnosis, & process optimization
- Manufacturing metaverse service

### Major Achievements

- Environment for collecting digital twin data used for process prediction, prognostic diagnosis, & process optimization environment
- Maintenance solution linked with the data analysis service
- Building a manufacturing metaverse service environment
- Model for verifying the quality of the intelligent digital twin system



Korea's best XR solution technology company

## VIRNECT Co., Ltd.



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- **Address** Virnect, 10-15 Hangang-daero 7-gil, Yongsan-gu, Seoul

### Type of business

Service

### Business field

Software development and supply

### Company introduction

- Virnect develops technology to allow us to learn, work and communicate in a better way.
- Virnect is a tech-company specializing in AR technology, leading the extended reality (AR) technology trends by using our computer vision technology developed proprietary, and develops specialized XR solutions to solve problems in the industrial site.
- Virnect supports the digital transformation of business customers using proprietary XR technologies and solutions, and improves work efficiency and safety at the industrial site.
- As the company name "Virnect" stands for "virtual connect", our corporate mission is to innovate the way people work, learn, and communicate by virtually bridging the reality and virtual worlds, humans and robots, time and space, or information with knowledge and wisdom

### Core technology

#### [Best industrial XR solution in S. Korea]

- Remote: XR solution for remote onsite management
- Make: XR solution for digital information creation
- View: XR solution for digital information visualization
- Digital twin: 3D digital twin solution

### Major Achievements

#### [Korea's best XR solution technology company]

Virnect has increased the number of customers and contracts steadily every year, secured 78 customers and signed 155 contracts in 2021. Virnect established its U.S. Branch in April 2022 to expand its overseas market presence, and has increased sales overseas by conducting local marketing and sales activities.

Remote



Make



View



Twin

05

Industry

05

Industry

Global Digital Twin All-in-One Solution Provider

# STANS Co., Ltd.



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- **Homepage** www.stans.co.kr

**Type of business** S/W development and supply

**Business field** Digital twin, video control analysis, AI

**Company introduction**

**[Management philosophy]**

- STANS is conducting R&D to implement technology to deliver a more beneficial digital twin that encompasses 3D object creation technology, AI-driven data analysis technology, and visualization technology for analysis data.

**[Company vision and goals]**

- Even though digital twin is a space in the virtual world, it is ultimately a solution, which includes AI technologies to solve various problems in the real world and field of industries. To achieve these goals, STANS is striving to make a social and economic contribution by growing together with our employees and delivering proper insights to customers.
- STANS' mission and goals are to grow by contributing to society, such as returning corporate profits to society and improving stagnant employment, under the corporate vision of becoming a "Global digital twin all-in-one solutions provider" that grows together

**Core technology**

- Auto i3D: Automatic 3D content creation and authoring engine (Users can easily create photo-based 3D models with photos & videos)
- AWAS-DT: Visualization platform integrated with digital twin (a platform that helps field management by visually arranging complex data)
- AWAS-XR: AR-VR-MR content creation/ authoring engine (Users can easily modify and edit the training content composition)
- AWAS-Insight: AI engine analyzing big data (Analyzing data collected by various sensors such as CCTV using AI)
- STANS has a program specialized in S. Korea, and conducts R&D on solutions that increase convenience and respond to problems in existing technologies by using technology for supporting work integration, intelligence, automation, & customization.

**Major Achievements**

- [2022]
  - Completed an M&A with MDS Intelligence STANS
  - Signed a contract for digital twin development with Samsung C&T, Samwoo Architects & Engineers, Busan Eco Delta City.
  - Won the High-Tech Safety Industry Promotion Award from the Minister of Trade, Industry & Energy.상
- [2021]
  - Selected as one of top-100 AI companies in 2021.
  - Won the Safety Innovation Product Award at K-safety EXPO (AWAS-DT).
  - Won an award from Seoul Innovation Economy Center at the 18th Seoul Regional Startup Meeting Place.
- [2020]
  - Won an Excellence in Disaster Safety R&D Award from the Minister of Public Administration & Security.
  - Won the Excellence Award from the Korea Business Incubation Association.



**Industry | Digital Twin**

# Industrial digital twin/metaverse smart factory solution [FLEXING Metaverse]

**Hosting institution** UVC Co., Ltd.

**Participating institutions** Inster Inc., Truedata Inc., TELSTAR HOMMEL Co., Ltd.

**Content introduction**

**Industrial digital twin & metaverse-enabled Flexing CPS**

Flexing CPS is an industrial metaverse platform based on real-time digital applied with the international industry standard (OPC UA), enabling increased operational efficiency, quality, and cost savings by efficient operation and management of multiple factories and substations in the center, immediate response to failures through XR (AR/VR) collaboration, field worker training, and maintenance.

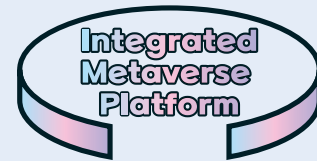
- Improving operational efficiency through 3D integrated control over factory machines, robots, sensors, & facilities using real-time digital twin.
- Providing all-in-one industrial metaverse from data collection to integrated monitoring, remote control, & virtual factory implementation in metaverse
- Cost savings & quality improvement through failure handling, onsite worker training, & maintenance supported by VR-AR-XR collaboration

**Applied technology**

A manufacturing metaverse system that converts product design 3D drawings, such as CAD, into XR content in the energy and manufacturing industries, while also enabling multiple participants in remote locations to access the collaboration platform at the same time over a 5G network, and providing immersive XR content such as inspection, training, and maintenance to enable the digital thread.

1. FLEXING XR - AMR/AGV deadlock & anti-collision simulation
  - Applied technologies: Unity Engine, Microsoft Mixed Reality Tool Kit, Blender, Rhinoceros 3D
  - Content: AMR/AGV deadlock and anti-collision simulation improve production efficiency in the manufacturing industry
2. FLEXING XR - TWIN
  - Applied technologies: Unreal Engine 4, CAD Converter, One1 StreamING
  - Content: Industrial metaverse that converts the drawings of machine and equipment in factories and substations to 3D images, and enables digital twin creation and collaboration using high-performance rendering engines.
3. FLEXING CPS - Digital Twin
  - Applied technologies: CPS, Digital Twin, OPC UA, IoT, Edge Computing,
  - Content: Even though manufacturers of machines and equipment are different, various services such as real-time monitoring, control, data analysis, and abnormality detection are provided by collecting data and conducting standardization (i.e. international standard OPC UA).
4. FLEXING EDUKIT - Meta View
  - Applied technologies: Unity Engine, OPC UA, WebSocket.io, MQTT
  - Content: Digital twin-enabled remote control of education/training equipment, and education/ training content based on simulation

**Business direction**



- Cases of leading companies
- Supplying to same & similar industries
- Expanding to different industries
- XR collaboration solution
- Metaverse virtual factory
- Digital twin platform
- Cloud platform
- Powerful, costeffective features
- Metaverse infrastructure
- XR collaboration platform
- Digital twin platform

기업 디지털트윈 구축

Securing successful SI company cases in advance

Platform business to expand to small & mediumsized businesses

Conglomerate/ public enterprises

Small & medium-sized businesses/ municipalities



Company connecting information and value

**UVC Co., Ltd. etc.**



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**Type of business**

Information and communication industry

**Business field**

Industrial digital twin, metaverse, smart factory solution, IT education business

**Company introduction**

UVC is a company that connects information and value, and discovers new value with digital twin by providing wonderful metaverse-enabled experiences to customers.

**[Holding digital twin/XR source technologies]**



**Core technology**

**[Flexing CPS]**

Flexing CPS software has obtained the first grade for GS certification. Flexing CPS is a SaaSbased platform that enables the user to quickly build CPS, an intelligent automatic production system equipped with ICT convergence. Flexing CPS also supports CPS interoperability by exchanging data between key systems, such as ERP, MES, and PDM, and entire equipment or robots, using OPC UA (i.e. international standard technology for real-time data exchange). Being equipped with big data or machine learning modules, it also provides various intelligence functions, such as distributed control, energy saving, automatic process control, failure prediction and abnormality detection, based on cloud service and edge computing.

**[Flexing Meta]**

A full 3D manufacturing metaverse platform driven by real-time digital twin to efficiently operate and manage multiple factories at home and abroad from a central location.

**[Flexing XR]**

A manufacturing metaverse platform that improves productivity and quality, and reduces operating expenses through XR (AR/VR) collaboration, such as immediate response to failures, field worker training, and maintenance.

**[Flexing Edge]**

An edge device equipped with an OPC UA server, which provides a plug-and-play connection service for easy use by supplying power to the device and the internet when collecting data in the field

**[Flexing EDU Kit]**

Training equipment that enables trainees to practice logic control by connecting signal lines and power lines of the PLC and motor driver after placing miniaturized machines and robots in the process line, allowing trainees to practice operating technology that builds actual factory lines. This equipment includes devices and technology that are actually used in the factory, allowing trainees to put their learning into practice at the manufacturing site after training.

**Major Achievements**

- Metaverse virtual factory for Company H
- Real-time digital twin control over industrial robots in Company H & K
- Full 3D-type digital twin for Company K
- 5G-enabled digital twin for Company G
- **Awards received in 2022**
  - Minister of Science and Technology Information and Communication Award Won the award for being an excellent SaaS platform, which is a digital twin data collection system for industry, in the cloud smart manufacturing field in 2022.
  - Minister of Trade, Industry & Energy Award Won the award for contributing to national economic development and becoming a model in the industry for this, such as industrial & national economic development, based on digital twin technology & digital transformation.
  - National IT Industry Promotion Agency President Award Won the award for excellence in digital twin & industrial metaverse technology and business performance in the field of manufacturing & energy



**Industries applying the UBC Flexing platform**



**Manufacturing industry**

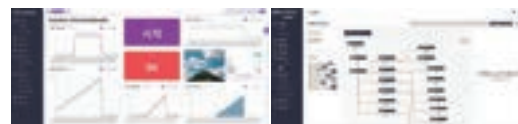
- Metaverse virtual factory for Company H**
  - Integrated management of factory buildings, facilities, & lines
  - Control by linking with various Flexing platforms, real-time monitoring
  - Calculating simulation results such as production facility & warehouse management, production equipment condition change, etc.
- Real-time control over industrial bots in Company H**
  - Less than 10m/s time difference in real robot sensing data
  - Less than 5m/s error in real robot position data
  - Centralized robot data management
  - Standardization linkage of heterogenous robots using OPC UA

**Energy/Plant**

- Full 3D digital twin of Company K**
  - Monitoring by linking with various plants, facilities & IoT devices in real time.
  - Integrated 3D visualization of large plants
  - Providing time & space information & onsite safety management

**Cloud SaaS**

- 5G-enabled digital twin for Company G**
  - Web visualization of the digital twin of 5G-enabled remote metering system
  - Real-time operation, maintenance system & information management using digital twin with linkage of IIoT & GIS
  - Supporting integration & linking with Flexing platform & legacy system



Monitoring/control/data analysis      OPC UA web modeler/profile maker

Providing content creation solutions driven by digital media technology

**Inster Inc.**



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**Type of business**

the production of broadcasting programs

**Business field**

Production, post-production, digital studio, digital platform, R&D

**Company introduction**

Inster is a creative group that provides content creation solutions based on experienced professionals and digital media technology.

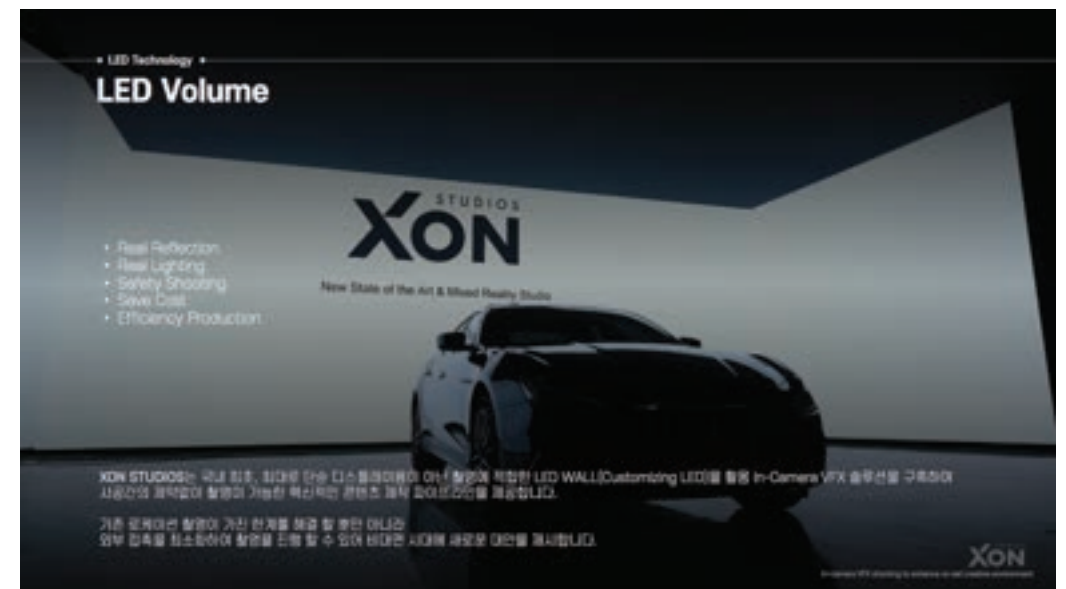
1. **PEOPLE:** Content experts Building an ALL-IN-ONE system composed of content experts with more than 10 years of experience;
2. **CREATIVE:** Extensive experience More than 200 projects, insights, and new perspectives from extensive experience;
3. **TECHNOLOGY:** Digital production engineering Providing digital content production solutions with the latest technology in the media field to grow a global content group.

**Core technology**

Virtual studio, XR technology, PR film, film, broadcast editing, production, distribution, & services

**Major Achievements**

- XR video production for non-contact Samsung BioLogics 'Virtual Groundbreaking Ceremony of Factory 4';
- XR video production for Samsung Electronics 'Biscoff';
- XR event for LG Electronics 'CES2021';
- XR video production for the music video 'Night Night Night' by singer Kim Yong-jin.





# Truedata Inc.



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- Type of business** Application Software Development and Supply
- Business field** Software Development and Supply(Data Warehouse,Data Modeling,ETL,OLAP,Bigdata)
- Company introduction**
- Differentiated consulting capabilities of specialized companies**
    - Practical consulting based on field experience;
    - Consistent one-stop service from ISP to system deployment;
  - Leader of Korean CRM**
    - The first integration in the Korean CRM industry;
    - Possession of own construction methodology;
  - Core Brain**
    - Leading the latest technology in the database field;
    - More than 85% of technical human resources;
    - Continuous R&D investment;
  - Specialized as a data-related technology company**
    - Securing in-depth technical competency related to data rather than application;
    - Concentration on data-based technology capabilities leading IT trends;
    - Positioning as a leading company in the DW sector.

customized production by integrating facility manufacturing technology and information & communication technology

# TELSTAR HOMMEL CO., LTD.



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- **Homepage** www.telstar-hommel.com
- **Address** 89 Hyeongok Sandan-ro 93 beon-gil, Cheongbuk-eup, Pyeongtaek-si, Gyeonggi-do

## Business field

Build a customized smart factory, Automated assembly line facilities, Precision measurement inspection equipment, Quality & productivity management system, Ts-SPC 3D laser metal cutting

## Company introduction

TELSTAR HOMMEL CO.,LTD. was established in 1987 and has grown in tandem with the domestic automobile market. The main business is to provide various production facilities on a turn-key basis, including precision measurement inspection equipment, assembly line automation equipment, and quality & productivity management systems. In addition, it has 3D laser metal cutting technology through its subsidiary. Through 'Telstar Smart Factory Construction Platform LINK5' developed in line with the Industry 4.0 era, it implemented a factory that can do customized production by integrating facility manufacturing technology and information & communication technology.

## Core technology

- Precision measurement inspection equipment manufacturing
- Assembly line automation facility
- Establishment and operation of customized production lines
- Integrated quality control system (statistical process control)
- Production and operation control system (MOS)
- Precision measurement assembly fusion technology

## Major Achievements

- Development and localization of Con-ROD measuring instruments
- Export of automatic assembly equipment and measuring instruments
- Development of Ts-SPC system and line monitoring system
- Development of AI smart factory platform based on big data management technology
- Development of AI-based Intelligent Edge Box
- Development of cloud-based customized cosmetics data platform



Introduction of LINK 5 Platform



TS-SPR Self-Inspection Stand



Facility manufacturing site view at headquarters

## Industry | Construction and Shipbuilding Industry

# Construction machine training solutions [VRCMS]

**Hosting institution** BIG PICTURES Co., Ltd.

## Content introduction

### Virtual Reality Construction Machine Simulation (VRCMS)

- Providing realistic vocational education in virtual space by overcoming spatial & temporal limitations of the existing vocational system with a focus on hardware
- Providing virtual vocational practice by selecting the manufacturer brand in one simulator according to the construction machine type
- A new construction machine can be quickly added for vocational practice by upgrading simulation.
- Improving learning effect and ensuring convenient operation by managing learning & content with an integrated approach

## Applied technology

### Real-time simulation VR visualization technology based on physics

- Users can have a high level of immersion in virtual environment with the realistic motion of construction machinery & haptic UI optimized for VR environment.
- Providing a systematic curriculum based on the NCS learning module.

### Technology of real-time linking of network control data

- Managing the network, curriculum, & system of groups of 15 people in real time.
- Receiving intuitive feedback on the recorded operation information using 3D graphics.

### Presenting standards for vocational training by managing and analyzing learning

- Understanding the job competency of trainees objectively by applying the vocational practice evaluation of construction machinery pilot qualification tests
- Quickly evaluating individual & group progress by profiling and grouping trainees, and collecting and managing vocational courses.

## Business direction

- Securing competitiveness as a practical response platform by operating construction equipment attachments needed for vocational practice and expanding to the curriculum of level system operation.
- Expanding consumer contacts on the metaverse platform surpassing the limitations of hardware
- Expanding the market from a single system to multi-system development in real time



VRCMS SYSTEM



Hardware Differentiation



Installation references



Digital Innovation in Practical Training of Construction Machinery

**BIG PICTURES Co., Ltd.**



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**Type of business** Software Development and Supply

**Business field** VR / Edutech

**Company introduction**

**Company vision**

By creating the best solution service based on reliability and technology, we are building the groundwork for expert human resources development of global construction machinery operators.

**Management philosophy**

"We observe laws and ethics, respect customers, shareholders, and team members, and establish a relationship of coexistence and co-prosperity when creating a business ecosystem."

**Business areas**

- We provide safe and eco-friendly training solutions to more trainees by digitally innovating construction machinery training.
- "VRCMS" enables trainees to learn how to operate various types of construction machinery by the manufacturer by surpassing the constraints of time and environment based on a virtual environment platform. It also applies a learning management system to analyze trainees' operational capability and progress for efficient learning management.

**Core technology**

- Simulation** : Implementing physics-based virtual simulation, applying construction machine dynamics, and visualizing 360-degree virtual space in real time
- Learning content** : Managing simulator content control with learning management, learning analysis system (CMMatrix), & multiple networks.
- Data linkage** : Technology of controlling unmanned vehicles in real time

**Major Achievements**

- 2022: Signed an MOU with Dongshin University, Mokpo Technical High School, Sejong Heavy Equipment Academy in Daejeon. Acquired a family-friendly company certification from the Ministry of Gender Equality and Family (No. 2022-0356). Won a commendation from the Korea Institute of Startup & Entrepreneurship Development. Won an excellence award from the Korea Metaverse Industry Association. Operated an online booth at ICTWOW 2022.
- 2021 : "VRCMS" CE certification, forklift GS certification, crane GS certification. Won a commendation from the Daejeon Information & Culture Industry Promotion Agency, and registered proprietary production of training equipment and production of package software.
- 2020 : Vocational competency simulator registration (NCS1470106), ISO 14001, 9001 standards and certified software engineering direct production registration; factory registration; corporate conversion; & selection as "Industrial Convergence Item" by the Ministry of Trade, Industry & Energy;
- 2019년 : Presidential Commendation of Knowledge Industry - The Ministry of SMEs; selected as special case of regulatory sandbox demonstration; CES Las Vegas top 2 item selection; & excavator GS certification;

VRCMS Simulation



Bulldozer

Loader

Crane

Excavator

Tower crane

Fork lift

Motor Grader

Crane safety education

VRCMS System Configuration Diagram



1. Excellent learning effect by checking behavioral information in real time, while trainees conduct field practice
2. LMS in the control room quickly checks training objects & job skills by providing content & student registration management functions
3. Sharing practice simulation process on the multiple display
4. The virtual reality simulator provides a sense of space in the equipment & simulation experiences to multiple students in the same environment simultaneously.

VR Platform



Virtual reality platform

One simulator can simulate various construction machines.

Learning management, learning analysis system(CMMatrix)



Learning Management System (LMS)

LMS is a register that can quickly evaluate individual progress & group progress, and devise a field practice plan by managing job skills in the field with an integrated approach.

Learning Analysis System (LAS)

LAS is an educational aid tool that helps trainees better improve their job skills.

**Industry** | Construction and Shipbuilding Industry

① Industrial safety VR content  
② Tourism metaverse [Tour Planet]

**Hosting institution** NOVATECH Co., Ltd.

**Content introduction**

**Tourism metaverse (Tour Planet), Industrial Safety VR, Industrial Safety VR Simulators**

**Tourism metaverse (Tour Planet)**

Tour Planet is a metaverse platform created based on the real world tourist attractions. Implementing multi-access and hyperrealistic tourist attractions through cloud server and photo-based 3D modeling production technology, it provides real-time tourist information, a commercial connection system and meta-bus platform linked to tourist attractions.

**Industrial Safety VR**

Shipbuilding and Chemical Engineering Industry VR

**Industrial Safety VR Simulators**

Tower Wagon VR Simulator, Scaffolding Safety Experience VR Simulator

- Tourism metaverse (Tour Planet) : Tourism metaverse contents with the background of Ulsan Daewangam;
- Industrial Safety VR : VR Contents in the field of shipbuilding and marine, and chemical industry;
- Industrial Safety VR Simulators : VR simulator for high-place work vehicles, VR simulator for experiencing scaffold safety.

**B2B fields:**

1. Tourism metaverse : Creating and supplying metaverse content to the tourism department of the pertinent area;
2. Safety industry VR : Creating contents for corporate and selling packages;
3. VR simulator : Creating and selling a specialized training simulator.

**B2C fields:**

1. Tourism metaverse : Selling metaverse stores linked to tourist attractions, NFT characters, etc. Marketing for tourists
2. Safety industry VR : Selling VR packages using a safety training portal -> Selling to the general public (contents such as earthquake safety experience, fire response training, passenger ship evacuation, etc.)
3. VR simulator: Supplying simulator-type experiential equipment connected to tourism-based metaverse.



**Applied technology**

**Business direction**



Tourism metaverse (Tour Planet)



VR Training for Nuclear Power Plant

IT company specializing in occupational safety in the industrial field

# NOVATECH Co., Ltd.



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**Type of business** The information and communication industry

**Business field** XR, IoT, Smart factory

## Company introduction

### Background and Vision

- Background : NovaTech was founded as an IT company specializing in occupational safety in the industrial field.
- Vision : NovaTech aims to integrate the physical and digital world and become a company specialized in industrial/ occupational safety digital twin using innovative technologies such as the internet of things (IoT), big data, virtual reality, and artificial intelligence.

**Business areas** : XR(VR, AR), metaverse, IoT, smart factory, unmanned logistics system

**Core technology** Contents (VR, AR, metaverse) production, graphic production based on real pictures, high-level IoT technology, MES, ACS

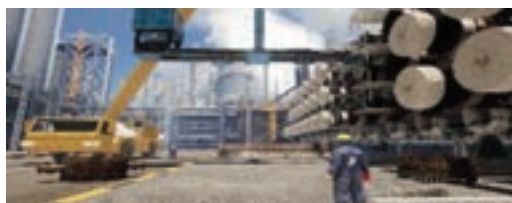
## Major Achievements

- Metaverse : Metaverse Award, Consultation on contents of Dong-gu Tourism Office in Ulsan
- Safety industry VR : Hyundai Heavy Industries Co., Ltd., Selling VR Contents, Korea Maritime Transportation Safety Authority, Selling VR Contents
- VR simulator : LS-NIKKO Copper Inc., Selling VR Simulators

Photo of the safety experience VR training center & training experience at Hyundai Heavy Industries



Screenshot of the S-Oil safety content with excellent realistic expressions



Customers & Content of Industrial Safety Virtual Training



Novatek has developed and supplied more than 40 high-quality educational and training VR contents for industrial safety, and package those contents in an overseas version for export.

## Industry | Mobility Industry

# Training for VR-enabled electric vehicle certification test

**Hosting institution** WABOTECH Co., Ltd.

## Content introduction

### Structural theory of electric vehicles

Developed in a way that trainees can understand the structure of electric vehicles by disassembling and assembling electric vehicles, including the high voltage cut-off procedure that is required to practice electric vehicle maintenance.

- High-voltage cut-off procedure
- Car coolant draining procedure
- Battery disassembly procedure
- Drive motor disassembly procedure

### One-time driving charging test for electric vehicles

Composed in a way for trainees to experience one-time driving charging tests as part of certification process of electric vehicles.

- Preparatory procedures
- Chassis motor work
- Driving test

### Noise certification procedure for electric vehicles

Composed in a way for trainees to experience noise certification test as part of certification process of electric vehicles.

- Checking certification roads
- Introduction to the certification test
- Certification test

## Applied technology

- Creating models based on reverse engineering technique through 3D scan
- Creating a learning environment that mimics the actual field
- Enabling trainees to learn the corresponding procedure using narration after theoretical training
- Doubling the effect of vocational practice by creating each procedure as a content without abbreviation

## Business direction

- Utilize the teaching materials for the course of electric vehicle certification experts
- \*Currently being utilized as teaching material/ supplementary materials for future vehicle training courses implemented by the National Institute of Environmental Research.
- Being utilized as training materials to teach the structure & characteristics of electric vehicles by various electric vehicle training institutions.



Wabotech VR-Based Educational Content



NCS-based electric vehicle maintenance training

Hybrid vehicle maintenance training



Hydraulic suspension maintenance procedure

Starting motor maintenance procedure

Gasoline engine disassembly/assembly

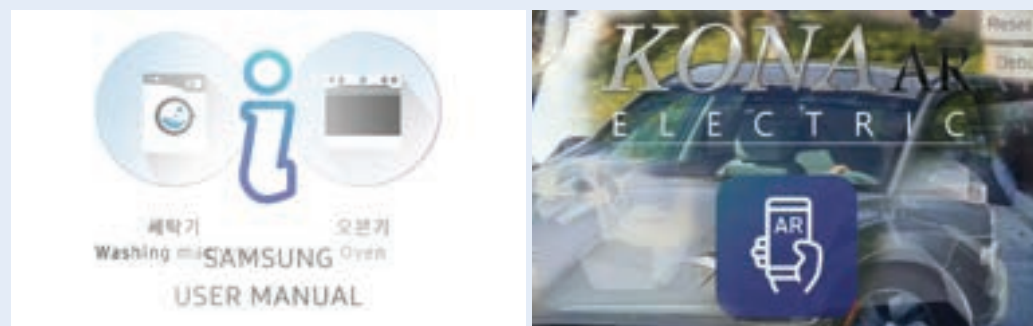
WABOTECH 3D Modeling Tablet-Based Educational Content



Hydraulic suspension maintenance

Characteristics of EV structure & modularity

WABOTECH AR-Based Educational Content



AR household appliances smart manual <Samsung Air conditioner>

The high voltage charge procedure of Kona AR

VR and AR technology convergence content development company

WABOTECH Co., Ltd.



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Type of business

The information and communication industry

Business field

AR/VR, 3D scan and reverse engineering, automotive environmental technology research (Development of automobile maintenance training system, diesel vehicle emission measurement research, big data analysis)

Company introduction

WABOTECH is a company specializing in convergence content development by applying the best VR/ AR technology in Korea that will enhance the technological competitiveness of companies.

- Establish a new foundation for development of Industry 4.0 through innovative technologies and create a sustainable content field through constant innovation;
- Realize the best value with superior technology and gain content technology in lockstep with new development strategies;
- Provide the best solution with differentiated technology and improve quality through expert input;
- Realize the best customer satisfaction by deriving various ideas and alternatives.

Core technology

- 3D model reverse engineering
- AR-based recognition technology development
- VR/ AR/ MR content development
- UX/ UI design
- Mechanical and automotive parts design, analysis, and performance prediction
- Vehicle emission reduction business
- Technical support for the development of vehicle emission measuring equipment

Major Achievements

- 2018. 05: Samsung Electronics AR-based home appliance smart manual development;
- 2020. 12: Hanyang University's Smart Manufacturing Powertrain Online Practice Platform;
- 2021. 01: NIPA XR+a specialized high school virtual practice and remote support.
- 2022. 12: Establishment of teaching materials for future car environmental certification evaluation expert training by the National Institute of Environmental Research

**Industry** | Mobility Industry

# VR drone simulator [ISDDS Ver2.0]

**Hosting institution** Doublebears Co., Ltd.

## Content introduction

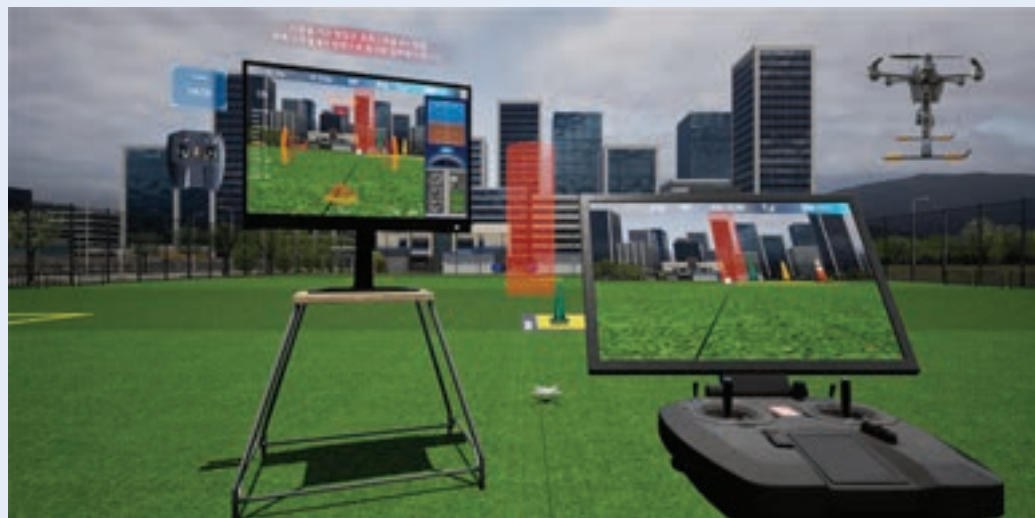
It is a drone VR simulator that enables practical field exercises/practice in a virtual space. Problems that occur during actual drone training (i.e. expensive drones, drone maintenance costs, external weather, space utilization, etc.) have been solved through Unreal Engine 5-equipped VR. Based on a drone that is no different from the real one, it has the control level that is equivalent to completing a drone license, with its portable kit offering the convenience to be installed anywhere and used for training anytime. Our patent application is pending.

## Applied technology

- VR contents production using Unreal Engine 5 technology
- Patent applications pending on three types of drones.
- VIRTUAL REALITY DRONE SIMULATOR:
- Application No. 10-2020-0169729
- Application No. 10-2020-0169730
- Application No. 10-2020-0169731

## Business direction

- Production of ICVFX and related content using the Unreal Engine 5
- Supply of customized B2B to institutions related to drone field



Best Real-Time Virtual Production

# Doublebears Co., Ltd.



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**Type of business** Service

**Business field** Virtual production, virtual human, XR educational content, video production

**Company introduction** Doublebears provides real-time experience with the world's best virtual production.

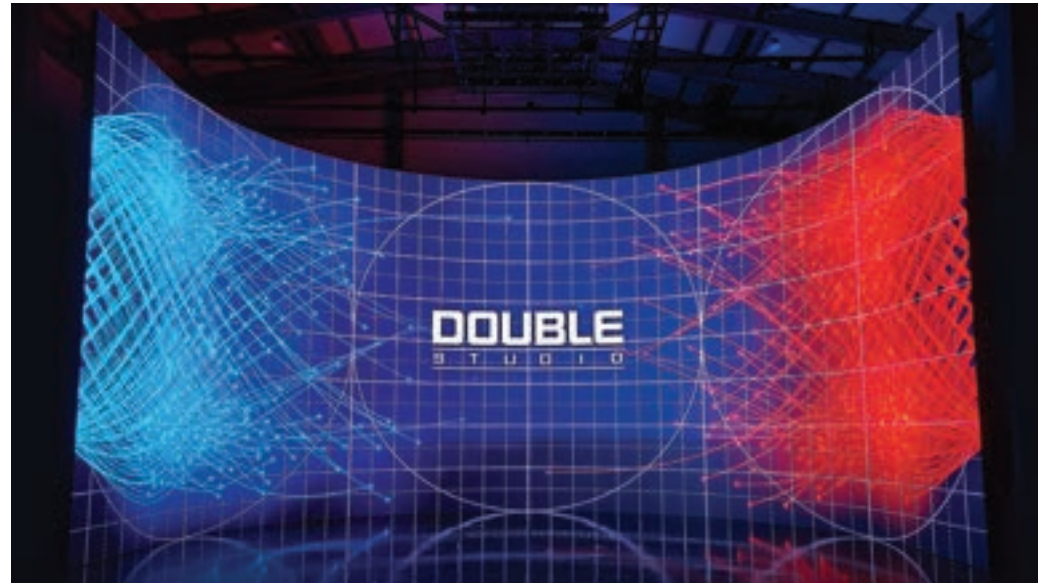
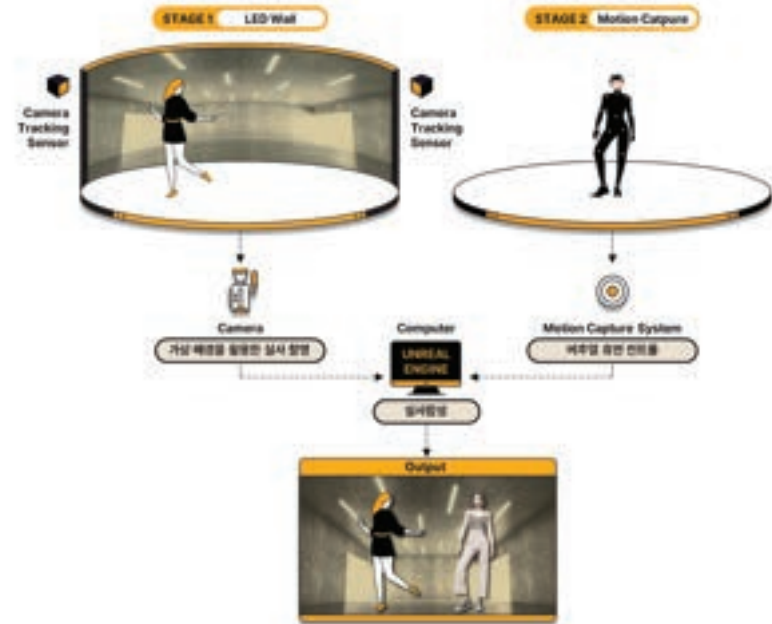
**Core technology** Real-Time VFX Application Technology  
 - Drone simulator technology  
 - Realtime VFX(Virtual Production XR System)

**Major Achievements**

- 2022: Supplied a drone simulator to TS Korea Transportation Safety Authority
- 2022: Supplied a drone simulator to the Busan Institute for Future Education



## REAL TIME VFX Virtual Production - XR System



05

Industry

06

## Medical-Health

### Severe trauma education solutions based on tangible content [TNXRtc]

- DKI Technology Co., Ltd.
- Pacom Inc.
- Medimind Co., Ltd.
- VFXPIXEL Co., Ltd.
- Electronics and Telecommunications Research Institute (ETRI)
- SEOUL NATIONAL UNIVERSITY BUNDANG HOSPITAL
- AJOU UNIVERSITY INDUSTRY-ACADEMIC COOPERATION FOUNDATION/HOSPITAL
- Armed forces capital hospital

### XR-driven brain cognitive rehabilitation program for pain & paralysis-inflicted patients [TiU]

- Rising Craft Co., Ltd.

### Bio-genome/ medical education & training content based on VR-MR

#### [Medical Reality Training Contents]

- TMD Education Group Inc.
- Globepoint Inc.
- Theragen Bio Co., Ltd.
- World Vertex Inc.

### XR-enabled acupuncture training content using a human dummy

#### [Oriental Medicine Acupuncture XR]

- Quadrature Co., Ltd.
- Wonkwang University

Medical·Health

# Severe trauma education solutions based on tangible content [TNXRtc]

**Hosting institution** DKI Technology Co., Ltd.

**Participating institutions** Pacom Inc., Medimind Co., Ltd., VFXPIXEL Co., Ltd., Electronics and Telecommunications Research Institute (ETRI), SEOUL NATIONAL UNIVERSITY BUNDANG HOSPITAL, AJOU UNIVERSITY INDUSTRY-ACADEMIC COOPERATION FOUNDATION/HOSPITAL, Armed forces capital hospital

**Content introduction**

The TNXRtc system is a solution that utilizes realistic content based on medical digital twins implemented through data of actual severe trauma (i.e. complex open fracture, explosion/ piercing injuries, sever/crushing injuries, and mass trauma injuries, etc.) and augments arbitrary trauma and operational characteristics based on life-size physical mannequins, so that it automatically provides an evaluation of individual training and group/individual training results.

**Applied technology**

- Medical digital twin technology based on actual severe trauma data
- Realistic training device manufacturing technology
- Realistic VR content & MR production technology
- Severe trauma treatment training platform production technology
- On-premise & cloud type treatment training platform production technology

**Business direction**

- Executed commercialization, such as regional trauma centers using the demonstration results at the Korea Armed Forces Nursing Academy, etc.
- Promoted the introduction of a regular curriculum for the Korea Armed Forces Nursing Academy based on the demonstration results there.
- Executed promotion/marketing by constructing the project results in the exhibition space at the KoVAC Center XR Showroom
- Expanding the supply for trauma centers in 17 regions across the country to promote diffusion
- Extending the supply of simulation S/W package products & training centers to university hospitals, fire/emergency rescue teams, etc.



**VR content**



Prepare medical kit



Classifications of patients in mass disaster

**MR content**



a penetrating wound

amputation

A company that builds its future based on technology, experience, and trust  
**DKI Technology Co., Ltd.**



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**Type of business** Software development, R&D, content development

**Business field** Healthcare, smart senior citizen centers, smart terminal management, smart education, eavesdropping prevention

**Company introduction**

- Specialized technology development companies in healthcare, AI, IoT, mobile, and security
- Developing and supplying specialized solutions and service systems based on extensive, successful development experience and differentiated technology
- A good company achieving win-win-win outcomes and customers trust with customers, companies, and executives

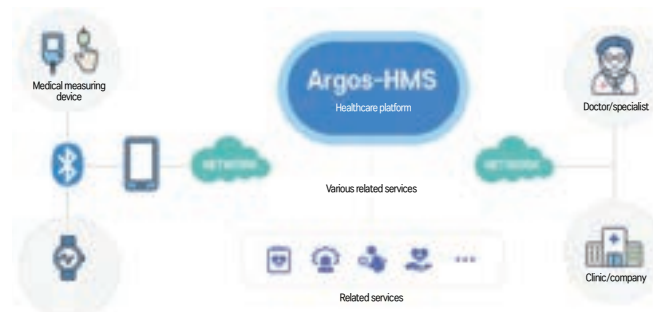
**Core technology**

- Healthcare platform: Open PHR-based healthcare platform
- AI technology: Prediction technology of chronic disease outbreaks through PHR data analysis
- MDM technology: Powerful mobile terminal management technology based on kernel-level control technology

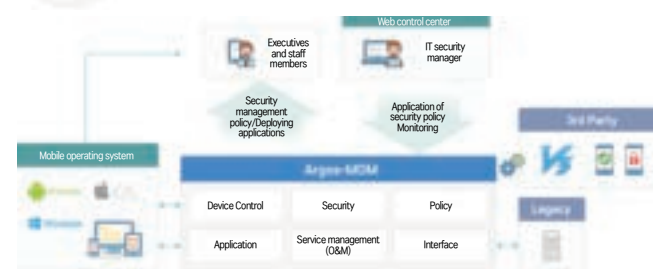
**Major Achievements**

- 1997.08: Established the company
- 2006.07: Designated as INNO-BIZ, an innovative SME
- 2015.12: Acquired SP2 software process quality certification
- 2021.03: Won the ICT Grand Prize in the Healthcare Platform & Service category at the Korea Industry Awards

**Healthcare Platform**



**MDM Solutions**



A professional company leading the commercialization of domestic VR-AR-XR technologies



**Pacom Inc.**

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**Type of business** R&D, manufacturing

**Business field** VR-AR-XR technology field, video system field

**Company introduction**

A company specializing in developing new business areas, such as developing education and training platforms based on VR-AR-XR technology, developing and building a safe education/training environment, instead of high-risk/expensive onsite training that incorporates VR-AR-XR technologies into 3D video system display devices, etc.

**Core technology**

The company is specialized in developing realistic immersive education/training platforms through domestic VR-AR-XR technology convergence, possessing technological competencies in hardware (design, production, construction) and software (Unity, Unreal Engine-based content, resource development, etc.).

**Major Achievements**

- Plant industry: VR/AR-driven education & training system
- Law enforcement: VR/AR-driven education & training system
- Control industry: VR/AR-driven monitoring system
- Firefighting industry: VR/AR-driven education and training system
- Defense industry: XR-driven education and training system
- Other industries: VR/AR-driven immersive educational contents



A company specializing in VR digital therapy devices leading the global market

# Medimind Co., Ltd.



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**Type of business** Service

**Business field** A company specializing in developing digital therapy devices based on virtual reality

**Company introduction** **“We contribute to the protection of good human health through the development of high-tech technologies.”**

Medimind Co., Ltd. is an SME that develops software for implementing digital healthcare and virtual-augmented-mixed reality technologies, creating industry-leading value with superior quality and differentiated services. We are carrying out its role as a technology developer, and will continue to develop content and programs in related industries, contributing to society and growing into the top-ranked company recognized by customers for customer satisfaction.

- Core technology**
- Digital therapeutics development technology in mental health medicine
    - Possession of various mental health psychological test questionnaire scales for psychological diagnosis
    - VR space & UX implementation technology for psychological testing
    - User bio-signal data collection technology
  - VR software development technology for education & training
  - Development technology of an integrated platform for patient history management

- Major Achievements**
- Acquired 11 patents, 4 trademarks & many software copyrights related to the development of digital therapeutics.
  - Recognition for Medical Device Manufacturing and Quality Control Standards (GMP)
  - Acquired Quality Management System ISO 13486:2016 Certification in the medical field
  - Digital therapeutics (Addiction Dtx) clinical trial and testing is in progress.

## Alco-Thera/ Nico-Thera ( DTx, treatment of alcohol/ nicotine addiction)

Digital treatment device for improving alcohol/ nicotine addiction (cognitive therapy software (E06060.02, level 2))

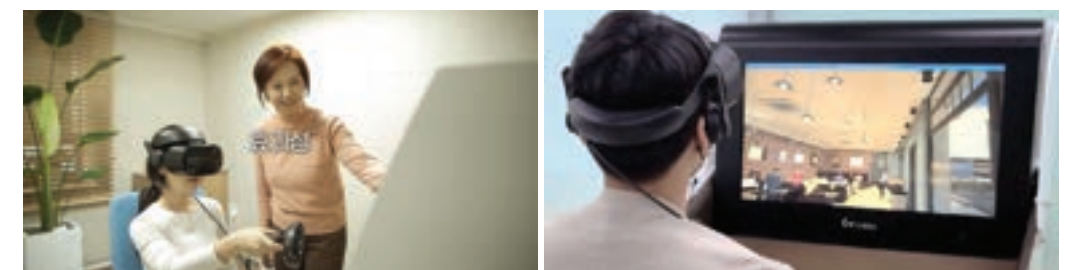
- Smartphone apps, virtual reality devices
- Chronic & recurrent alcohol/nicotine addiction



## Cheeu Forest (DTx, cognitive therapy for depression)

Cheeu Forest is a digital treatment device that helps depression, stress management, & emotional control by a VR mental health education & training program.

Program composition	1. Mental health assessment Knowing your mind	2. Whole body health education Leaning the mind	3. Emotion control training Training the mind
	Psychological evaluation to assess one's mental health	Education to help understand mental health	Personalized training for emotion & impulse control



\* Clinical results show that VR-driven treatment intervention reduces depressive symptoms similar to drug treatments.

Total Creative Studio leading content trends

# VFXPIXEL Co., Ltd.



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**Type of business** Service

**Business field** Planning/production of VFX, real-time engine-driven MR/VR contents of advertisements, dramas, & movies

**Company introduction** As the best VFX Studio in S. Korea, we aim to be a total creative studio that plans, produces, and develops not only existing video media content, but also prepares XR content at the cusp of the metaverse era.

- Corporate vision & philosophy: As a creative VFX studio where creative directors, designers, and artists collaborate, it produces creative visual results with unique perspectives and methods based on new ideas. Based on commercial advertisements, VFX and CGI-featured movies and dramas, it is expanding into new fields such as interactive and VR/MR.

**Core technology**

- Video media postproduction: Video editing of advertisements & dramas featuring VFX, CGI, and Artwork.
- Planning & production of MR/VR contents: Planning & development of XR contents based on the Unity real-time engine

**Major Achievements**

- 2020: XR Convergence Project medical participating institutions
- Production of global advertising video for Samsung Galaxy series from 2015 to 2022
- Production of major TV commercials for LG, Samsung, KT, Hyundai, Kia, Ssangyong Motors, etc.
- 2023: Participation in the development of NeRP-enabled high-quality character creation technology

## VR/MR content production

• Possession of realistic human body 3D modeling asset production technology based on medical digital twin data & the data on actual severe trauma patients



• Produced 12 types of upper & lower extremity fracture open-composite modeling assets for severe trauma treatment training.



• High-quality advertising video 3D scene production using Unity engine  
 • In September 2020, Hyundai Motor Company's Brand-New TUSON IX - Official Design Film achieved the required mark for advertising videos using PBR 3D modeling technology & HDRP



## VR/MR content planning



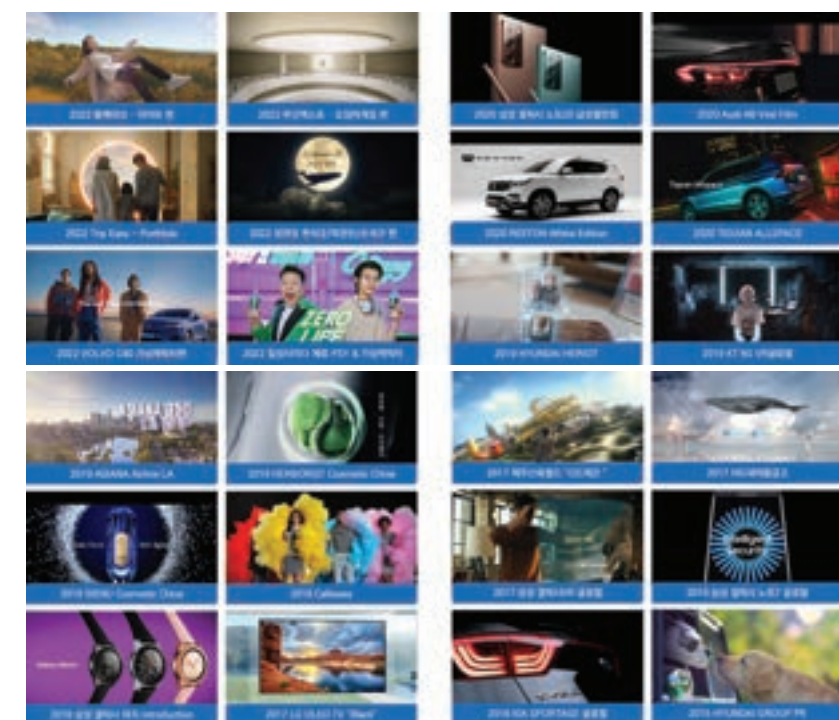
Example of Scenario Logic plot



Excerpts from the UI Design Plan

XR convergence project: Severe trauma training MR content production consulting/scenario planning, MR/VR content UI/UX planning & design

## VFX Production History



A technology pioneer, creating a happy future world

## Electronics and Telecommunications Research Institute (ETRI)



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**Type of business** Telecommunication-related research technology service

**Business field** Research & development of ICT core technologies, such as AI, communication media, creative materials & components, etc.

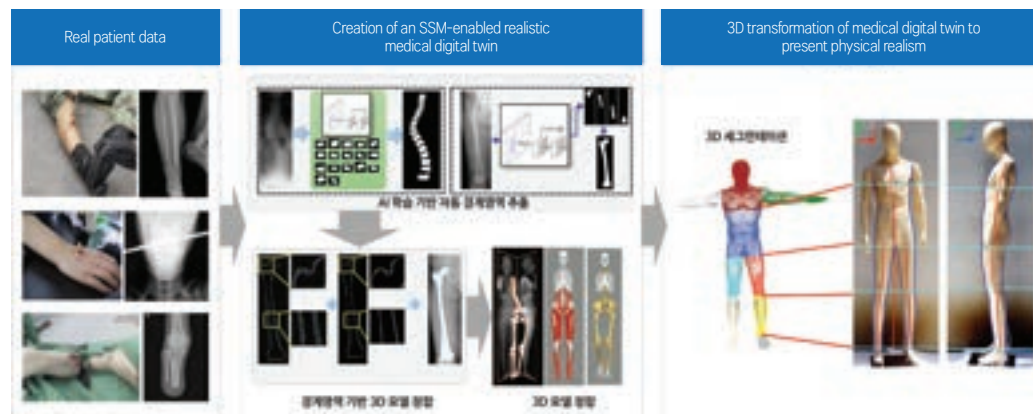
**Company introduction** We contribute to leaping to an advanced human-centered nation by creating human-centered new technologies that capitalize on new IT-based convergence technologies and pleasant, convenient, and safe life. We will provide the best R&D quality to meet your expectations to achieve the mission our customers and countries expect of us.

**Core technology** (Content Research Headquarters) Development of intelligent/realistic content core technologies that realize people-centered industries and cultures (i.e. intelligent interaction technology, content recognition technology, realistic immersion/video content technology, emotional content technology, etc.)

**Major Achievements** (Content Research Headquarters)

- Selected as one of the 100 national R&D excellence achievements (human factor-based VR motion sickness reduction technology)
- Successful development of the world's leading XR-driven metaverse core technology that supports the maximum number of participants, high-speed interaction computations, high-precision space/location measurements, and low-latency synchronization
- 2021 ETRI Representative Performance (Social Problem Solving): Spread of realistic platform technology for education/training in public & private sectors through the industrialization of selected technology (i.e. 8 technology transfers, KRW 13 billion in sales of technology transfer commercialization)

Creation of an SSM-enabled realistic medical digital twin model that produces large-scale regeneration situations by reproducing real severe trauma cases in the MR environment



A people-centered hospital leading the global standard of medical care

## SEOUL NATIONAL UNIVERSITY BUNDANG HOSPITAL



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**Type of business** General hospital

**Business field** Medical treatment

- Company introduction**
- A people's hospital trusted with patient-centered integrated treatment
  - A global hospital that nurtures global medical leaders
  - A creative hospital creating a new level of research model
  - A digital hospital leading development for future healthcare
  - A value-driven hospital that prioritizes patients
  - A hospital of hope that presents warm encounters

**Core technology** We provide patient-centered medical services with compassion and love, and also provide individualized treatment optimized for patients with an integrated treatment system integrating multidisciplinary fields. In particular, we are building treatment models that manage rare severe diseases and high-risk diseases such as cancer, heart, cerebral nervous system diseases, organ transplantation, congenital genetic diseases, etc., as well as chronic and mild diseases.

- Major Achievements**
- 2010.10. Healthcare Informatization and Management Systems Analytics Stage 7 Certification
  - 2011.10. Acquired certification for E-Government Information Security Management System (G-ISMS) for the first time as a medical institution
  - 2011. 12. Establishment of virtual desktop infrastructure, establishment of disaster recovery system
  - 2012. 09. Establishment of an N-device-based medical information system (Winner of the Presidential Award for "2012 Korea IT Innovation Awards" organized by the Ministry of Knowledge Economy)
  - 2013. 04. Upgraded the Hospital Information System. (BESTCare 2.0)
  - 2013. 07. Won the top prize at the Smart Bed Station 'Red Dot Design Award'

A medical institution aiming for the best medical care, education, & research

## AJOU UNIVERSITY INDUSTRY-ACADEMIC COOPERATION FOUNDATION/HOSPITAL



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- **Phone** 031-219-7476
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- **Address** 206, World Cup-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do

**Type of business** Healthcare

**Business field** Medical treatment

### Company introduction

Mission - We are always by your side and always committed to healing illness and pain.  
Vision - A medical institution aiming for the best medical care, education, and research  
The safest and kindest patient-centered hospital and institution leading medical education in S. Korea, International-level research capabilities in key research areas, Aiming to become the best medical brand in the major field of treatments.

### Core technology

- An institution leading medical education
- A safest and kindest patient-centered hospital & segmented care system
- International-level research capabilities in key research areas
- Korea's first regional trauma center and setting the benchmark for Korean trauma centers as a regional emergency medical center in southwestern Gyeonggi Province

### Achievement highlights

- Accredited by the International Medical Institution Evaluation Committee (JCI) for 3 consecutive times, selected as one of the global top-100 hospitals published by Newsweek in the U.S.
- Accomplished a research grand slam as a research-oriented hospital by simultaneously carrying out BK21, SRC, MRC and large-scale national projects and various research projects centered on the Institute of Advanced Medicine
- Signed international agreements with 31 institutions in 5 countries

Trusted by the people & the military by providing the best patient-centered care

## Armed forces capital hospital



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**Type of business** Healthcare

**Business field** Medical treatment

### Company introduction

Vision- The highest military medical institution trusted by the military and people, leading the latest trends in medical care  
Mission - Preserve military combat capabilities through the best healthcare services and perform pivotal missions in the event of a national crisis.

### Core technology

- Military-specialized general hospital : Creating capacity of the university hospital's level, strengthening civilian-military cooperation, opening of the Armed Forces Trauma Center, patient-centered management

### Achievement highlights

- Opened the Armed Forces Trauma Center
- Establishment of the Clinical Medicine Research Center
- Operation of inpatient treatment beds placed at state-designated public medical institutions

Medical·Health

# XR-driven brain cognitive rehabilitation program for pain & paralysis-inflicted patients [TiU]

Hosting institution Rising Craft Co., Ltd.

## Company introduction

**A new non-face-to-face treatment solution for patients with chronic pain & hemiplegia**  
The body awareness XR rehabilitation program (TiU) is a new rehabilitation program that realizes the principles of mirror therapy in virtual reality utilizing extended reality (XR) technology, allowing patients with pain/paralysis such as hemiplegia and phantom pain to be easily and quickly rehabilitated.

### Treatment principle

Mirror therapy is a method first introduced by causal brain scientist Ramachandran, and is designed based on the principle of brain plasticity that cranial nerves can be structurally and functionally changed. When visual feedback is provided through a mirror, the reduced proprioception sense activates the pre-motor cortex area and induces normal movement. When this process is repeated, cranial nerves change and motor functions are restored. By performing the same exercise on normal limbs in real space and virtual limbs in virtual, augmented reality, the sensory information of the left and right limbs is integrated into the brain, forming a single sensory representation. The information is transmitted to the motor system, while reintegrating the perception-motor coordination of the virtual limbs, thus alleviating pains.

### Expected effect

- Acquiring medical rehabilitation algorithms related to patient treatment using IoT sensor-based technology
- Visual effects due to the movement of normalized virtual limbs in the metaverse virtual reality
- Simultaneous targeting of B2B & B2C with price competitiveness
- Platform considering patient convenience & various rehabilitation programs
- About 19~44% cost reduction compared to currently implemented products & similar treatments
- Reduce physical therapist time per patient through non-face-to-face approach (average rehabilitation time of 30 minutes per patient → 5 minutes)

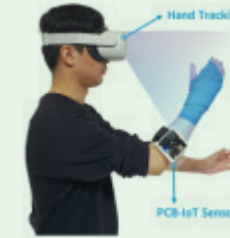


## Core technology

### XR Rehabilitation Content + Self-Developed IoT Sensor

Integrating VR technology-driven software technology with rehabilitation device technology using IoT sensor technology

### Hardware



- ❶ Detachable PCB-IoT sensor connector
- ❷ Bluetooth 9Dof-Motion sensor
- ❸ Insertion of vibration motors (2 lines)
- ❹ Insertion of rechargeable lithium battery module
- ❺ Interworking with VR devices (metaquest 2 or higher)

### Software

**Accuracy** Criteria for indicating how close VR & AR tracking is to the actual value  
Positioning accuracy using AR for this software is determined by matching the accuracy between the image & patient, with the error being within 2mm.

**Reaction speed** The speed of updating to a virtual image by reflecting the user's gaze, head & body motion such as arms & legs Within 20 ms of reaction speed

**Reproduction performance**

- ❶ Field of view: The angle of view of the image displayed by the HMD device  
FOV hor. - 104.00 FOV hor. - 98.00 FOV diag. - 113.46
- ❷ Resolution: The resolution of the image displayed by the HMD device  
(Numbers of horizontal x vertical pixels: 1832 x 1920)
- ❸ Frame rate: Frames per second in virtual reality software (60Hz per second)

## Achievement highlights

4P Strategy	Product	Price
	- XR rehabilitation program for patients suffering from pain caused by industrial accidents & diseases	- Sales to healthcare-related companies & institutions countrywide (Software + Equipment + Interior + Maintenance) Costs about KRW 13 million - Non-face-to-face personal rental service (Software + equipment + maintenance )Costs KRW 79,000 per month
4P Strategy	Place	Promotion
	- Domestic & foreign medical institutions & companies - Direct marketing & distribution after regular clinical IRB verification in the first half of 2021	- PPL for clinical IRB effect verification - Promotion of agreements with associations related to rehabilitation - Social media marketing (Instagram, blogs, Kakao channel, etc.) - Press & broadcasting media promotion

- ❶ **Launching domestic distribution channels**
  - Establishment of sales plans for primary medical institutions, general hospitals & university hospitals
  - Establish follow-up management service procedures
- ❷ **Rental services**
  - Introduction of rental service targeting to guiding customer
  - Regular customer visits for product information, inspection, & follow-up management
- ❸ **Offline marketing**
  - Participation in medical-related fairs & seminars, operation of product demonstration booth
  - Provision of free trial products targeting to rehabilitation institutions
- ❹ **Rising Craft's own mall operation**
  - Operation of Rising Craft's own mall
  - Operation of online product consultation center all the time
- ❺ **Promotion on social media**
  - Production of product demonstration video after recruiting pain/paralysis patients willing to reveal their faces
  - Operation of Rising Craft social media channels (YouTube, Instagram, Facebook, etc.)
  - Recruiting medical channels (Doctor Friends, Busan Doctor Kim, etc.) and producing promotional content

XR Business making the world valuable

# Rising Craft Co., Ltd.

Rising  
Craft  
Studio

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**Type of business** Application Software Development and Supply**Business field** VR/AR**Company introduction** Rising Craft Co., Ltd. pursues XR Business that makes the world valuable. We strive to connect ourselves and the world with positive impacts of technology that focuses on the 'useful benefits of technology' by imitating behaviors that not readily exhibited in the real world due to time and space constraints in a virtual, augmented environment**Management philosophy**

We impress you with our innovative technology &amp; business.

We will provide differentiated technology that enhances trust by prioritizing communication with customers &amp; affiliates.

We create new experiences &amp; values.

We utilize our deep understanding of customers &amp; technical capabilities, opening up new possibilities.

We realize future values with creativity &amp; cooperation.

We want to support people with diverse dreams &amp; passion and grow with our business partners.

**Mission** : Achieve sustainable growth through constant technological innovation.**Vision** : Let's make the world more open and connected through technology.**Values** : Technology innovation/ customer focus/ leading change/ open culture**Core technology** **Technical details**

- Acquire joint information of normal limbs through the camera and reverse the information from side to side, realizing virtual limbs at the location where a sensor is attached.
- By performing the same exercise on normal limbs in real space and virtual limbs in virtual, augmented reality, the sensory information from the left and right limbs is integrated into the brain, forming a single sensory representation. The information is transmitted to the motor system, while reintegrating the perception-motor coordination of the virtual limbs, thus alleviating pains.

**Achievement highlights****Clinical trial results**

- Task name: A study on analyzing the effect of the VR-AR rehabilitation program overcoming phantom pain for upper-limb amputation patients (2021.07. ~ 2021.12.)
- Place : Chungnam National University Hospital
- Study results: It was confirmed that pain control programs using VR devices for actual patients with phantom pain help patients control pain without harming them.

**Regular clinical IRB progression**

- Clinical IRB verification for XR rehabilitation program in progress (Korea Workers' Compensation & Welfare Corporation Incheon Hospital/ Yonsei Severance Hospital)

## Medical-Health

### Bio-genome/ medical education & training content based on VR-MR[Medical Reality Training Contents]

**Hosting institution** TMD Education Group Inc.**Participating institutions** Globepoint Inc., Theragen Bio Co., Ltd., World Vertex Inc.**Content introduction****① Core Nursing Skills 360-VR Contents**

- Core nursing skills content for nursing colleges/ nursing departments
- Core Nursing Skills 360-VR contents are essential field practice courses for graduation certification in the Department of Nursing, and are a system that provides practical field training & evaluation in academic & home settings.
- 360-VR-enabled realistic field practice system
- Contents for 20 subjects & the configuration of a learning management system that can check the field practice status & results
- Non-face-to-face nursing educational content
- Realistic field practice content & evaluation management system/ web-based field practice system

**② VR, MR-based Next Generation Genetic Analysis Experimental Training(NGS Reality Training Contents)**

- Educational and training content that can actually conduct a virtual experiment as opposed to ordinary content for NGS experiment-based training with use of digital and video;

**Background**

- With an increase in demand for professional human resources in private, public, academic, and research as a result of the development of medical and bio industries, there is a need for professional training and education.
- Increased need for non-face-to-face digital education in the post-endemic era
- Forming new creative convergence technologies and new markets and driving job creation by establishing a professional industry-academia-research cooperation system

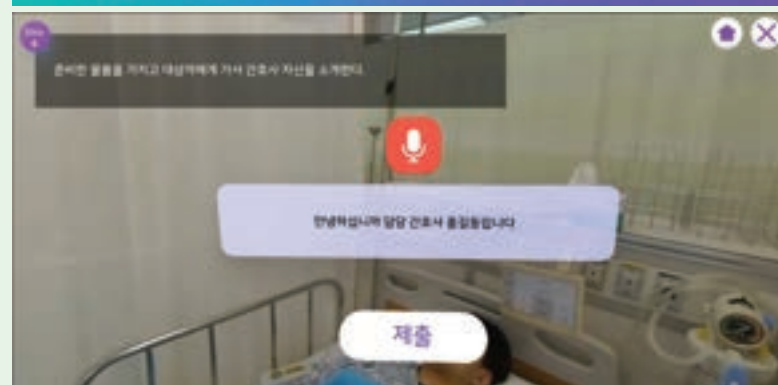
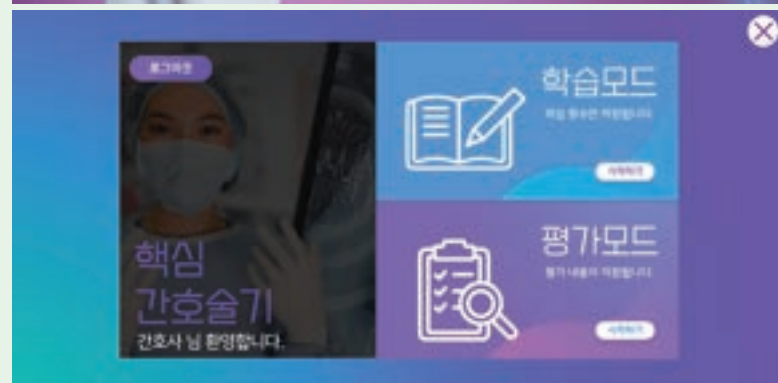
**Purpose & necessity**

- Improve existing experiments & training with high-cost & high-risk elements to a new education system using realistic content, while providing low-cost, low-risk, & high-efficiency immersive education.
- Provide opportunities to enhance practical capabilities by learning equipment & experimental methods used in actual industrial sites.
- Foster in-demand practical talents through education & training on technologies that can be used in field practice by the actual medical & bio-industry.

- VR-MR technology
- Deep Learning technology

**Applied technology****Business direction****Promotional marketing for domestic & foreign universities, hospitals, medical institutions, etc.**

- Introduction to exhibitions & conferences related to medical, bio, & nursing at home & abroad
- Conduct marketing by emphasizing the reduced time & cost expended in universities & hospitals by providing services that replace the needs of the university's practice.



Educational company specializing in 4th industry and digital education

# TMD Education Group Inc.



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- **Homepage** tmdedu.com
- **Address** Unoffice Building, 26 Seochojungang-ro 8-gil, Seocho-gu, Seoul

**Type of business** Education service

**Business field** Educational consulting, educational content development, publishing, exhibition, event hosting & agency businesses, etc.

**Company introduction**

- TMD Education Group is a representative education company that develops the youth to grow as a future competent people who are prepared to excel in the 4th Industrial Revolution era.
- TMD Education Group develops various digital education contents such as AI, S/W, coding, VR/ AR, etc. and delivers the value and meaning of education to the youth along with leading domestic companies and social enterprise foundations, local governments, and public offices of education.
- Through these activities, TMD Education Group nurtures competent people for the future as pioneers and leaders in the digital era, by creating an innovative educational ecosystem.

**Core technology**

- Educational content for the youth, and technology education related to Industry 4.0 (software/ coding/ VR/ AR, etc.)

**Major Achievements**

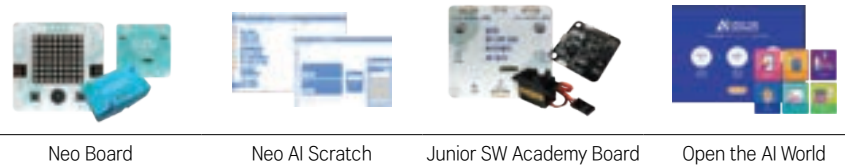
**Major history**

- Developed VR/ MR contents for experiment-based training to decide next-generation sequencing for the National IT Industry Promotion Agency (Selected for the XR+a project);
- Selected for the Software Future Filling Project by the National IT Industry Promotion Agency;
- Operated digital capability strengthening education in Jeollanam-do for the National Information Society Agency;
- Ran the youth VR/ AR course for Gyeonggi Content Agency;
- Operated the Seongdong 4th Industrial Revolution Experiential Center on commission;
- Operated the creative convergence educational program for the National Library for Children and Young Adults;
- Operated Jejuro Oncoding for Jeju Special Self-Governing Province;
- Operated the Junior Software Academy/ Creation Competition for Samsung Electronics;
- Operated the Future Auto School for Hyundai Motor Company.

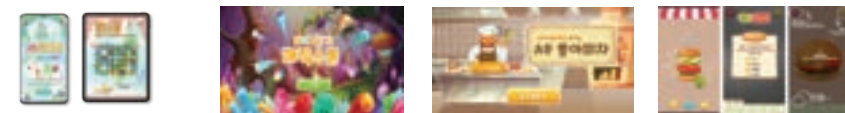
TMD Education Group Inc.. is a professional institution specializing in SW and AI education with a proud 16-year history and KRW 14 billion in sales, and is a reliable edtech company performing SW and AI education for the central government, municipalities, and companies.

1) Institution specializing in SW/AI education

Institution specializing in SW/AI educational content development



Development of AI boards & educational websites for learning about artificial intelligence (AI) in an easy and fun way, Development of many digital educational contents, such as using Scratch



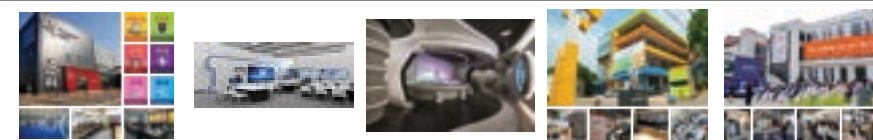
Developing educational game contents that can be used in education using AI & AR contents



Samsung Junior Software Academy/ Creative Contest, Samsung Electronics Samsung Smart School Business, Jeju SW Future Filling Operation Project, ICT Innovation Jeju Operation, Jeju On Coding Business Operation



Operation of elementary school-directed coding education project in Anyang-si, National Information Society Promotion Agency/Digital Competency Reinforcement Project, Busan AI-based Education Gap Resolution Project, Development & operation of Digital Youth School contents, Operation of Youth VR & AR Classrooms



Seongdong 4th Industrial Revolution Experience Center (Seongdong-gu), Seoul 4th Industrial Revolution Experience Center (Mapo-gu), Gangnam Future Education Center (Gangnam-gu), National Library for Children and Young Adults (Gangnam-gu), Jeju SW Mirae Chaeum Center (Jeju-do)

The proposal company is professionally operating SW/AI representative training centers in Seoul and Jeju City, and through these operations, it has secured nationwide SW/AI related contents, instructors, advisory group, network, etc.

Global education specialized company creating future value in EdTech sector



Globepoint Inc.

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- Homepage http://vrware.co.kr/default/
- Address Room #06-12, 11th FL, 83 Samwon-ro, Deokyang-gu, Goyang-si, Gyeonggi-do (Wonheung-dong, Gwangyang Frontier Valley 6th)

Type of business Software development and supply, information and communication business

Business field Metaverse content development and system construction, computer-related service, package software development and supply, digital content development service, IT consulting, education, solution development and system construction

Company introduction It is a global edtech company that develops and provides educational digital contents. Since its establishment in 2012, it has released various contents such as VR/AR/MR and the first VR authoring solution for the first time in Korea. It implements a content-connected metaverse world through open world solutions that are more creative than Lego, a global education company that creates the future value of the EdTech sector, and more interesting than Disney.

Core technology Development of various VR contents and solutions

- Achievement highlights
- EDUCATION AWARD-Impact Award
- 2021.09 Won the Excellence Award at "17th EdTech Excellent Company Contest"
  - 2020.09 Won the Award from the Minister of Trade, Industry & Energy at the E-Learning/EdTech Business Model Contest
  - 2019.10 Won AECT- Outstanding Practice Award
  - 2019.09 Received the Grand Prize at the Korea Excellent Product Competition
  - 2019.09 Signed an MOU for next-generation VR education business based on Toast cloud platform
  - 2018.12 Won New Software Grand Prize for 'VRWARE School'
  - 2018.11 Acquired VRWARE STORYMAKER V1.0 GS Certification
  - 2018.11 Won the Global Award by Japan E-Learning Association 'VRWARE School'
  - 2017.11 Selected as an excellent company at the LG U+ '5G Convergence Service Contest'
  - 2016.12 Won the New Software Grand Prize for 'VRWARE Premium'
  - 2016.12 Acquired VRWARE PREMIUM V.1.0 GS Certification
  - 2016.11 Received the Minister of Trade, Industry & Energy Award for Knowledge Service
  - 2015.12 Received 'Best Award' for Good Design from the Head of the SME Administration
  - 2015.12 Selected as an excellent SME in Goyang-si
  - 2015.11 Acquired Technology innovative SME Innobiz (Grade A) Certification
  - 2015.11 Release of VRWARE
  - 2015.10 Acquired Information Management System IMS Certification

promoting health and welfare through genomic data analysis

# Theragen Bio Co., Ltd.



- **Representative** Hwang Taesoon
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## Business field

Genome research and analysis service  
 Research service (NGS, SNP microarray, bioinformatics)  
 Diagnostic tests (cancer panel test, liquid biopsy)  
 Health care (Hellogene, DTC, microbiome, personalized health solution)

## Company introduction

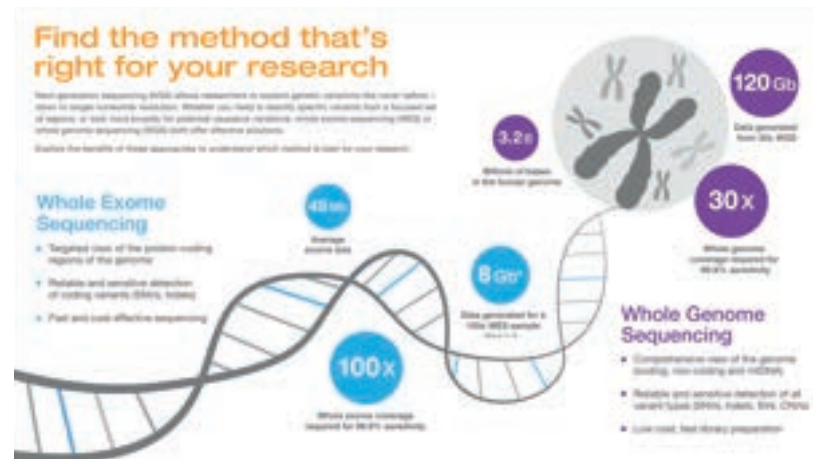
Founding background and corporate vision  
 Theragen Bio develops products by conducting genome-based clinical research, customized service using genome data solutions, promoting health and welfare through genomic data analysis, and is a global leader in genome-based personalized healthcare.

## Core technology

Holding cutting-edge platforms and next-generation genome analysis technology  
 NGS, AI, Bioinformatics, LIMS, Deep Omics, TotalOmics, new drug development

## Major Achievements

Implemented national projects such as NGS-based Covid-19 project, and the national bio big data project.



World Vertex engages in deep thinking concerning the things and people that can change the world

# World Vertex Inc.



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## Business field

Artificial intelligence Educational service, Development of the education system, solution development & operation

## Company introduction

World Vertex strives in earnest to become a company that creates values in the true sense of education so as to empower people to experience a sense of gratification and accomplishment, as technology and philosophy coincide in a rapidly changing educational environment for the mission of learning and personal growth.

World Vertex Co., Ltd. is doing various businesses, including education system and solution development, education system operation, AI-based intelligent education system development.

<b>Artificial intelligence Educational service</b>	<ul style="list-style-type: none"> <li>- VR, XR educational video production</li> <li>- Plant and insect VR/ AR development</li> <li>- Development of AI one-to-one personalized tutoring BotAmi</li> <li>- Development of real-time video educational service based on AI face recognition</li> </ul>
<b>Development of the education system &amp; solution development</b>	<ul style="list-style-type: none"> <li>- Development of the education system (LMS, LCMS)</li> <li>- Development of the academic management system</li> <li>- Development of a large-capacity question bank system</li> <li>- Development of the CMS-based portal site</li> <li>- Development of the education informatization solution</li> </ul>
<b>Operation of the education system and solution</b>	<ul style="list-style-type: none"> <li>- Education system and solution operation service</li> <li>- Website maintenance service</li> <li>- Management of the education informatization solution</li> </ul>

## Core technology

- Learning field: Smart learning platform development, learning management system, learning analyses & recommendations, academic affairs management;
- Content field: VR, educational video production;
- Digital recognition field: Face recognition/ plant recognition/ formula recognition technologies.

## Major Achievements

- 2021 Registered the process patent on the "Plant recognition system-based deep learning" (No. 10-2190756);
- 2020 Registered the process patent on the "Method for providing mathematical principle prediction service for math word problems using neural machine translation and math corpus" (No. 10-1986721);
- [BotAmi Math] Received the Chairman's Award at the 2019 Japan E-Learning Awards;
- [BotAmi Math] Received the Excellence Award at the 2019 E-Learning/ Edu-Tech Business Model Contest.

[Edu-Tech] Video Educational Service



[Edu-Tech] BotAmi Math



[Edu-Tech] Nature-i



Medical-Health

XR-enabled acupuncture training content using a human dummy [Oriental Medicine Acupuncture XR]

Hosting institution Quadrature Co., Ltd.

Participating institutions Wonkwang University

Content introduction

XR-driven “acupuncture” treatment Lower extremity key acupoints education

- Self-needling & acupoint navigation is possible by projecting 3D images with acupoint location & anatomy information onto the mock-up model. Possible to evaluate accuracy of acupoint procedure
- Calculate the user's hand motion & needle position, measure the insertion position & angle, etc., and display the results.
- Palpation of a mock-up model composed of lifelike skin, muscle, & bone Use of a mock-up model with pressure applied by depth to acupoints/non-points, such as skin, fat, & muscles

Applied technology

- Matching the body & AR object using optical sensors
- Implementing hand-tracking & hand gesture recognition
- Perspective & real-time location tracking system
- Optimal positioning design of location tracking devices
- Optimal marker position analysis for location tracking (i.e. AR glass, world coordinates)
- 3D model mapping system for modeling using Tracker

Business direction

Creating a learning ecosystem (building a cloud) → Pilot education at Wonkwang University → Expanding into the global market.  
 Combine existing acupoint educational methods of textbooks, papers, videos, & clinical trials among students, with XR, 4th Industrial Revolution.  
 Step 1 - Participation in global exhibitions, B2B sales  
 Step 2 - List the contents in prestigious domestic & international medical journals  
 Step 3 - Business partnership with medical institutions & universities, PR activities





3D Model Mapping System using Tracker on a dummy

Edutainment company aiming for realistic content solutions  
**Quadrature Co., Ltd.**

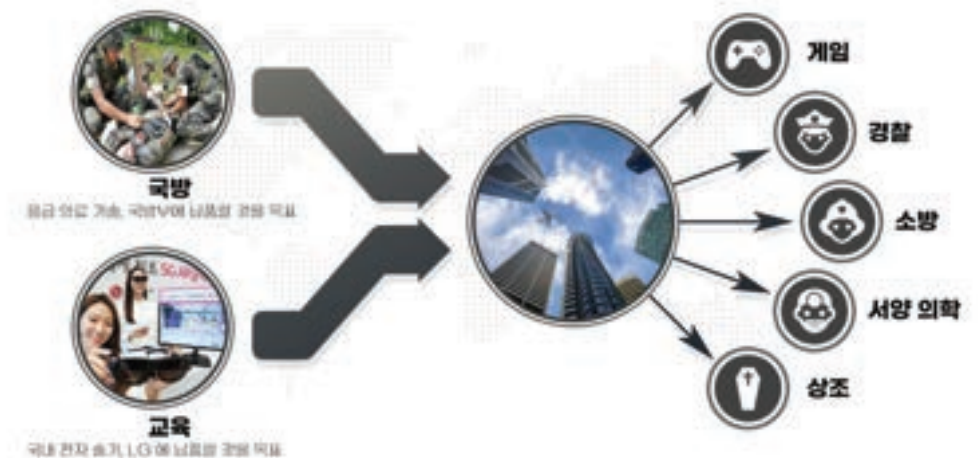


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- **Homepage** <http://www.quadrature.co.kr/>
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- Type of business** Software production
- Business field** Supply of XR-driven acupuncture system and educational content, and production of game graphics
- Company introduction**

**Corporate Vision & Philosophy: Providing 3 Types of Emotions**

  - Realistic: Content with realistic immersive effect
  - Empathy: Easy immersion based on storytelling
  - Communication: Providing an environment where users can have fun with community members
- Core technology**
  - XR virtual reality realization technology, motion capture technology, facial capture technology
  - Visual concept planning [concept art, previz (video continuity)]
  - Operation experience of global 4G live service
- Achievement highlights**
  - LG U+ Smart Textbook National Treasure AR
  - Ministry of Education, KERIS career/ art VR
  - Signed with KIST, Wonkwang University Industry-Academia Cooperation Foundation for the 'Ministry of Defense XR Project' MOU
  - Received orders for social studies textbooks in Gangnam & Seocho, the first interactive digital textbooks
  - Received orders for Seoul National University Teaching & Learning Development Center 3D modeling web content
  - Completion of medical XR core system development (Korean medicine XR mass production & commercialization)



**Oriental medicine**

**[Actual problems]**

Problems & their root causes

- 01. Needs of schools & hospitals
- 02. Observers are required due to difficulty.
- 03. Actually, the practical training environment is not satisfactory.

**[Development goals]**

Expected effect



Our method



Existing method

Provide convenient practice

- Easy Search
- Similar to conventional acupuncture

Provide a similar environment

- Dummies similar to human body
- Both hands are free.

Active exchange of information

**Video**



**National Treasure Image**

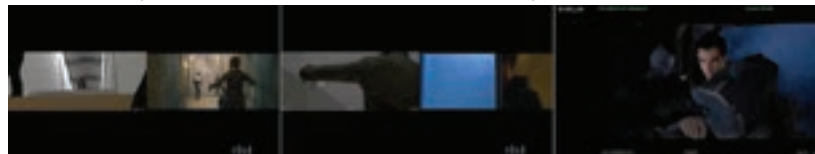


**Smart Textbook National Treasure AR**

**PREVIZ**

The process of previewing various contents before actual production

Visualizing & materializing process of the storytelling



**Facuak Action Coding System**



# Wonkwang University



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**Type of business**

Software development and supply

**Business field**

Augmented reality & virtual reality solutions, platforms, content developers

**Company introduction**

As a full-fledged university, it is specialized in medical education and research as it includes departments of Western & oriental medicine, dentistry, Western & oriental pharmacology, and nursing science. Notably, Wonkwang University Oriental Medicine College is well-renowned across the country with the title of being the second oldest oriental medicine college in Korea.

**Major Achievements**

Participated in region-leading technology development project (KRW 300 million)  
Name of project: Development of capacitors for saving energy

## AI-enabled customizing avatar service[MoiMe (Moi / StorySelf)]

Hosting institution illuni Inc.

### Content introduction

<MoiMe>

1. MoiMe is a cross-metaverse avatar API service that allows anyone to easily develop avatar-based services without developing an avatar system.
2. By creating an avatar in a service equipped with the MoiMe API, you can log in to another service equipped with the MoiMe API with the same avatar.
3. It is an API service that provides avatars with various functions based on AI (such as creating avatars with face photos, creating automatic facial expression models, automatic lip sync based on voice data, etc.).
4. It provides an avatar of advanced customizing features.

<Moi>

1. It is an avatar-based interest matching emotional conversation service using the MoiMe API.
2. It provides an interest-based conversation partner search & a conversation experience with an immersive emotional atmosphere.

<StorySelf>

1. Based on the MoiMe API, this content service allows you to become the main character in a fairy tale using your own avatar.
2. It is an interactive convergence reality-realistic fairy tale service that allows you to create your own fairy tale using your own face, voice, text, & pictures.

### Applied technology

- Provision of highly customizable avatars
- Provision of a 3D photorealistic avatar made from a single photo
- Provision of avatars that express facial characteristics based on face photo
- Provision of avatars that provide rich facial expressions & motion capture through automatic expression model generation technology
- Provision of an intelligent avatar that becomes Lipsync when it detects a voice.
- Provision of cross-metaverse avatars operating based on API

### Business direction

- Construct an avatar ecosystem through the MoiMe API, cross-metaverse avatar service
- Avatar system installed in the Moi platform and StorySelf

# 07

## Education

### AI-enabled customizing avatar service[MoiMe (Moi/ StorySelf)]

- illuni Inc.

### Healthy EdTech Content for Children [Curio AR Play Series]

- PlayCurio Co., Ltd.



A company that creates a new world of convergence reality services

# illuni Inc.



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### Type of business

Service industry

### Business field

the software industry

### Company introduction

“illuni, Illuminate the World, a new world created by imagination, creativity, and technology” Illuni is an AI technology-driven convergence reality content production company. As technology advances, content must be able to embrace technology. Illuni's values are creating new technology-enabled content services and creating services that bring customers' dreams and imaginations into reality.

Illuni has commercialized its own AI technology, and is releasing AI algorithms on the market. For sale at the Unity Asset Store, Face Analyzer provides developers and companies worldwide with solutions that make it easier to analyze users' faces.

It also provides StorySelf, a proprietary AI technology-enabled interactive convergence reality story content in which children and families become the main characters, presenting a world with the value of realizing the protagonists' dreams in fairy tales.

In addition, it provides the Moii platform, an emotional conversation service, that creates a personalized avatar to express oneself the best.

Illuni provides avatar generation technology installed in API-driven StorySelf and Moii platform for creating an avatar ecosystem through MoiiMe API's cross-metaverse avatar service.

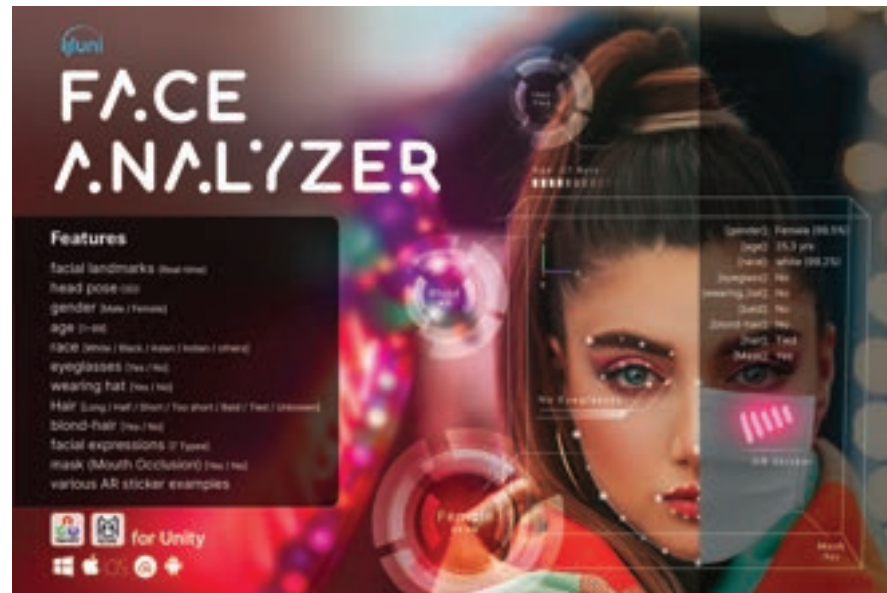
### Core technology

- AI-driven face analysis solution
- Highly customizable avatar creation technology
- 3D photorealistic avatar technology made from a single photo
- Automatic facial expression model generation technology
- Provision of an intelligent avatar that becomes Lipsync when it detects a voice.
- Cross-metaverse avatar technology operating based on API

### Achievement highlights

- Launched “Face Analyzer”, an AI-enabled face analysis solution product.
- Launched StorySelf service, pre-installed on KT Genie TV by winning the KT Genie TV Media Service Contest.
- Launched the Moii-based service.

Face Analyzer



StorySelf



Moi



Education

# Healthy edtech content for children [Curio AR Play Series]

Hosting institution PlayCurio Co., Ltd.

## Content introduction

### Healthy edu-tech content series for children

Curio AR Play series is a realistic play-based learning content for toddlers up to elementary school students that combines real teaching materials and a dedicated mobile app. The effect of educational synergies are created using exciting user experiences and additional digital learning contents such as videos, quizzes, and games by converging traditional learning methods and digital learning ones using AR as the medium. To date, 5 products are provided to consumers.

## Applied technology

**AR (augmented reality)** technology was introduced and utilized to increase use convenience or stimulate interest, considering the characteristics and age of a user.

### Planar image recognition and tracking (AR)

- The user experience with fun and convenience is provided in a way that the learning menu is displayed on the screen, when the image side of the learning card is shown to the camera, so that children who have poor reading skills or are unfamiliar with the general UI of the mobile app can use intuitively.

### Spatial (ground) recognition and real-time mapping (AR)

- The technology of recognizing the ground and mapping modeling to space in real time is used to demonstrate object creation in real-world space in a lively manner.

### Real-time comparison of object sizes

- Technology of comparing the size of 3D modeling in real time that can intuitively recognize the relative size of animal objects (Curio Safari)

## Business direction

### Business model

- When the consumer purchases a real product from an online market, the mobile app can download it free of charge without additional in-app payment or a paid subscription, using the characteristics of the product that combine real teaching materials and a mobile app.
- Good customer feedback can be received with a reasonable business model that reduces the economic burden of using digital content.
- Consumers' accessibility to the content is excellent, since it can be distributed through various sales channels, such as mobile shopping platforms that are frequently used by women in their 30s or older, the main customer base, owing to the characteristics of a product, so that real goods are sold.



Curio Safari



Sight Words

A company that presents children with good digital content

# PlayCurio Co., Ltd.



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- **Homepage** www.play-curio.com

**Type of business** Software development, supply, and consulting

**Business field** Planning-production-distribution of various digital/ real educational products for children

**Company introduction** PlayCurio Co., Ltd. produces and supplies the play-based learning content that can be operated by and is an age-appropriate developmental tool for toddlers and elementary school students based on the company's philosophy of "providing fun to children with good digital contents."

**Core technology** **Technology of realistic educational content development**

- Providing a new learning experience by linking real teaching aids and realistic contents;
- Designing and developing content that can motivate and induce children's interest in learning, and achieve optimal learning results through realistic technology from their perspective by leveraging expertise in content production for children;
- Developing an O2O educational content series that has all the advantages of both digital learning and traditional learning methods by linking the real teaching aids familiar to the main target customers (children and parents) with the mobile app using AR as the medium.
- Providing rich indirect experiences and audiovisual materials that are playfully fun and formal by addressing the problem of low immersion and poor concentration, which is a characteristic of children. As a result, it can be used as a non-contact, online learning method at home, such as a homeschooling teaching aid.

**Major Achievements** **Continuous increase of awareness and sales volume**

- Product sales increased by 500% from the previous year in 2021 owing to our sales strategy that targets domestic online shopping malls (company mall, open market, general mall, teaching aid mall, bookstore, etc.) in response to the pandemic.
- Released the new product "Curio Math Math" on the Wadiz platform, and conducted cloud funding, which exceeded the funding target by 2,838%.





07

Education

# 08

## Entertainment

**AR-VR-metaverse-AI convergence cloud platform**

- Circuscompany Co., Ltd.

**① Prosumer-type metaverse content [bicus],**

**② Holographic performance solution [HoloMR]**

- Bibimble Inc.

**AR makeup guide platform [VVU.TI]**

- Alijas Co., Ltd.

**Five-sided interactive AR immersive space**

**[X-Rumpus Box]**

- Sharebox. Co., Ltd.

**Multilingual digital human video production service**

**[AiVATAR]**

- AIPARK Co., Ltd.

**Two-person network-based room escape content**

**[Silent Turn, Adventure Series]**

- YOUCANSTAR Co., Ltd.

**① Physical environment applied metaverse [Real Meta],**

**② SMU Android Special Investigation Unit**

- SIGONGtech Co., Ltd.

**Multilingual digital human video production service**

**[AiVATAR]**

- ISPark Co., Ltd.

Entertainment

# AR-VR-metaverse-AI convergence cloud platform

Hosting institution circuscompany Co., Ltd.

## Content introduction



**Wagzak : A bite of pure entertainment, "Wake up Wag:zak".**  
The Wag-zak platform is an educational AR and VR platform that utilizes AR, VR, and image recognition technologies to allow you to enjoy more focused and fun educational content from home.



**ARTZME : Art for all souls, "Find yourself".**  
Through ARTZME, we form a vision to form a healthy art market where anyone can become an artist and further promote K-art to the world.



**FANTASEE : Deeper, more, closer, Fantasee.**  
The FANTASEE is a platform where the product itself becomes content and can be transformed into a promotional medium that piques consumers' interest. You can build an interactive online shopping mall through the process of product registration



**Mixpot : A united space, "Make it mix! Mixpot"**  
It is a new space, metaverse platform developed by breaking down the wall between online and offline with the technology and experience of the Circus company.



**Musikon : Musik Studio, just for you. Musikon**  
It is a one-to-one solution that analyzes the UIUX of the service and recommends and produces a suitable sound source. We produced 16 types of digital psychotherapy content and one safety school sound source, and distributed them to the music market.

## Applied technology

- Plane recognition, spatial recognition : It enables content placement on recognition.
- Cloud Servers**
  - A cloud server store 5,000 types of circus AR content, and when a user recognizes a marker, it collects and plays the content information about the marker.
- Unity**
  - Application of Unity development technology to create a metaverse space within the platform Implement low-capacity, high-quality 3D data through conversion of FBX → Unity 3D Asset Bundle (i.e. standardization of basic settings within the engine)
  - By easily building each platform with a present setting suitable for each platform (i.e. Android, IOS), the same quality can be maintained even when compressed to one-tenth the number of polygons and capacity compared to the existing ones. (Line 1,630,008 → 602,205)

## Business direction

- Developing content that can be used for demonstration at elementary, middle, and high school classes (KERIS, Korea Science and Creativity Foundation, EBS, etc.)
- Developing contents as alternatives to class lessons that can no longer be conducted due to ethical issues in public education (Animal Dissection Practice Content of the Agriculture, Forestry and Livestock Quarantine Headquarters)
- In 2021, total revenues of the Korean content industry amounted to KRW 133.6 trillion (0.6% year-on-year increase), exports totaled USD 115.6 billion (6.8% year-on-year increase), and employment tallied 670,000 people (1.1% year-on-year increase).
- With the development of mobile communication & the Internet, OTT services have expanded to various devices such as PCs and smartphones.
- Demand for web and game content, such as webtoons & web novels, increased due to increased use of mobile devices in the COVID-19 era and endemic phase.
- The competitiveness & role of virtual world content IP that became real: As the market for K-content, which has secured global popularity, is changing in various ways, it is predicted a positive outlook for the content industry and future development, so we concentrate on the content industry centered on various platforms & content.



**Wagzak**  
- Produced and distributed educational content for elementary & middle school students.  
- Developed 11 types of AR & VR contents for science education.



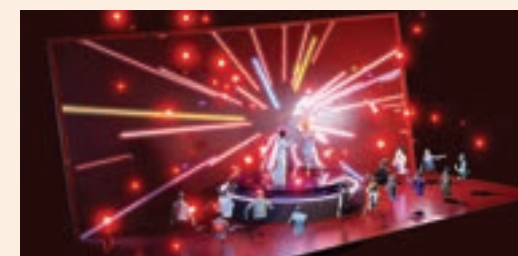
**Artzme**  
- Augmented reality platform where you can enjoy artwork anytime, anywhere, without time & space constraints  
- Digital psychotherapy - Possession of 9 types of contents excluding Daliland contents.



**Fantasee**  
- Planning and producing contents for AR promotion of Strawberry Bean port "&BERRY" product  
- The funding project was successful with 17,144% through promotional marketing of &BERRY products + AR technology + basic contents + stickers + coloring games (online distribution). It recorded KRW 171,444,700 in funding with 1,951 participants



**Mixpot**  
- An educational platform developed in cooperation with the Incheon Metropolitan Office of Education to prevent safety accidents in various situations  
- In the metaverse space, learn safety issues related to water play, road traffic, & aviation in advance, and proceed by checking the learned contents.



**Musikon**  
- Daliland, a metaverse content for digital psychotherapy with the Gyeonggi-do Mental Health Welfare Center  
- 16 types of music sources for psychotherapy in content are officially registered as music sources, and can be checked on the streaming platform  
- The safety education metaverse platform "1 Type of Safety School" song registration in progress.

Make technology entertaining and delicious

# circuscompany Co., Ltd.



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**Type of business** Software development and supply

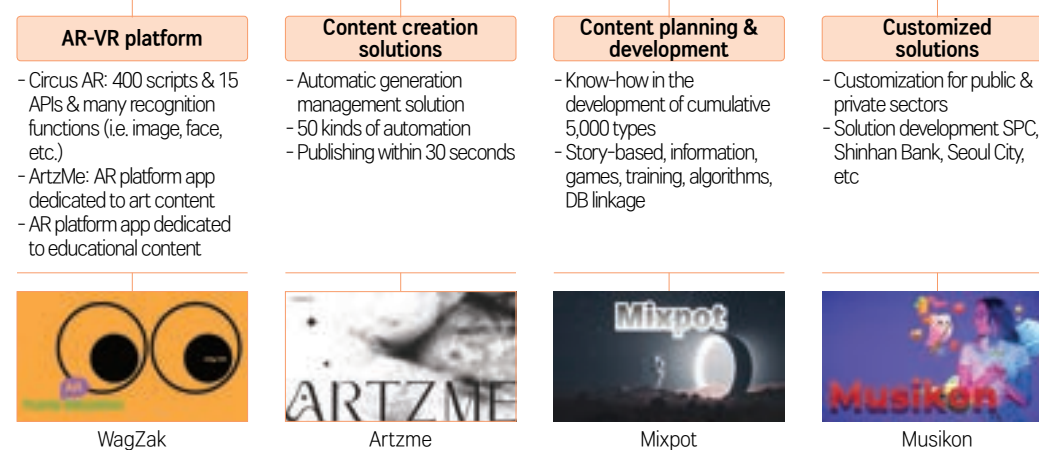
**Business field** Augmented reality & virtual reality solutions, platforms, content developers

**Company introduction**

**Mission** - Fun & delicious technologies  
**Vision** - Redefine digital value.  
**Core Value** - People, culture, technology, content, & entertainment

- Circus company is a realistic platform and content company established for the purpose of AR-VR-metaverse-AI technology, and content development. We provide content of high satisfaction to users through stable commercialization solutions and platforms. In the business of creating a meaningful new paradigm in education, culture & arts, and distribution marketing, circus company is a 10-year-old startup that will challenge the next 100 years. Now, you can get familiar with our technology and content in the course of your daily lives
- It provides customized consultation that analyzes and determines planning, technology, content, UX/UI, and psychological aspects through basic research on AR, VR content, technology, hardware, and processes required by companies, public organizations, institutions
- AR and VR are useful as a single technology, but we improve utilization and use rates by combining them with user benefits such as data connection, event algorithm, entertainment, story development, & 3D effect.
- We conduct consulting and development in various industries, grow into a global company, and provide services to the world beyond borders.

### Major business details



### Core technology

- Learning sector: Building an augmented reality AR platform, collecting and learning data about viewing of each content through CMS.
- Content sector: Education, arts, marketing promotion
- Recognition sector: Image, object, face, ground, 3D scanning

### Major Achievements

- 2022
  - Digital Contents Global Competency Reinforcement Project: XR gallery & Art Works + AR convergence content service;
  - Convergence Content Development Support Project: XR Gallery & Real Object-Based NFT Trading Service: ArtzMe;
  - Moving into KoVAC XR Showroom in 2022 (exhibition)
- 2021
  - Export Voucher Project: 2021 Service Leading Company Fostering Project
  - AI Data Processing Voucher Project in Second Half of 2021: Development of Machine Learning Awareness Engine for AR Fit with Lifestyle Product (Hand, Nail)
- 2020
  - 2020 Untact Content Global Commercialization Support Project: Lifestyle Product AR-VR Showroom Solution
  - 2020 5G Content Flagship Project: Development of AR & VR Integrated Content for 5G-Based Lifestyle Products;
  - Extended Reality (XR) Grand Challenge\_Awarded by Director of the National IT Industry Promotion Agency;
  - Four patent registrations (i.e. digital art placement & trading system using augmented reality, digital art trading system based on blockchain technology, digital art exhibition & trading system equipped with augmented reality & virtual reality, and food information provision platform using augmented reality menu board)
- 2019
  - One patent registration (user-customized content provision system using AI)
  - Smart City Service Innovation Support Project: Urban Regeneration VR-AR Content Production Task
  - 2019 Smart Content Overseas Promotion Marketing Support Project: Cloud-Type AR Content Platform App 'Circus AR'
  - 2019 Next Generation Realistic Content Development Support Project: AR Cloud Platform & Content Development to Vitalize the Food Industry
- 2018
  - The 23rd Korea Distribution Awards\_Citation in 2019
  - Knowledge service industry core technology development- Service industry convergence advancement technology development: AR-VR technology-driven cloud platform development for fashion products
- 2017
  - 2017 VR-AR Grand Challenge\_Grand Prize
  - Knowledge service industry core technology development-manufacturing service convergence: Development of experiencetype service system in the form of custom made by integrating fashion products and curation services



Entertainment

- ① Prosumer-type metaverse content [bicus]
- ② Holographic performance solutions [HoloMR]

Hosting institution Bibimble Inc.

① Prosumer-type metaverse content [bicus]

Content introduction

The bicus is a metaverse where users create their own space capable of monetization. It is a service available to anyone to easily gain economic benefits in their own space. The bicus is a portmanteau of "big" and "us", and is a metaverse that means a bigger world that we create together. The bicus is a prosumer-type metaverse that allows users to easily create, manage, and monetize digital showroom spaces, and is a service that allows anyone to easily create a metaverse and Media-Entertainment gain economic benefits from activities.

Applied technology

Support for the largest simultaneous access in S. Korea

- Up to 200 people can connect per server, and corporate promotional events for up to 4,000 people can be held when the channel is increased.

Easy login and magic link

- Besides various social logins, guest logins, quick login access without a password once registered in a web browser

Persona system

- It provides various assets for gender, appearance, costumes and expresses even detailed character elements.

Metaverse communication

- Possible to chat in various forms using text, voice, or emoticon

Open land build system

- Provides various building exterior & interior space templates and open world & build functions that administrators can easily add and modify. (Search and surf other brand spaces that have entered)

3D space and asset item resources

- Realizes the highest quality digital showroom by supporting realistic 3D graphics applied with digital twin elements. (3D space & asset items provided)

Multi-device and multi-resolution

- Provision of an option to adjust resolution & language according to user device specifications, Playable with PC Client, Mobile APP, & WEB streaming anytime, anywhere without restrictions

Chunk-type metaverse that can be continuously updated

- We propose a policy for our metaverse as a subscription service, and continue to update it to enable continuous utilization of users

**Business direction**

**Digital showroom**

- Use of metaverse commerce platform for open mall promotion
- Discussion as a metaverse platform to be used for promoting the digital mall in the fashion industry slated to be newly opened in August 2023.
- Provides a great space needed for the brand. → Extend the business of reality to the metaverse

**Metaverse browser**

- Metaverses, such as Zepeto & Ifland, are not unique metaverse spaces but instance concept-based spaces that are created with volatility or one-time and disappear. In the metaverse browser, a separate URL can be provided in each unique space based on the IPv4 address system, which is equivalent to internet IP address system.
- When it is loaded in the form of a button on a website, application, social media, etc., through a separate URL, the metaverse browser is automatically executed, the image of the set logo is displayed, and it immediately moves to the dedicated space. Also, rather than being shown as a platform like in Google Chrome or Internet Explorer, it presents the function to play the role of a viewer that shows separate metaverses



Metaverse content, bicus



Solution for hologram performance, HoloMR

**② Solution for hologram performance [HoloMR]**

**Content introduction**

**LX Control Tower**

- LX Control Tower is designed to enable firefighters to take safety measures by transmitting the information concerning the accident scene at the time when they are mobilized to the scene after searching the optimum route for taking safety measures speedily by using AI as the safety control tower collects data concerning the building interior

**Dokkebi (Goblin) Fantasia**

- A story related to a village saved from a disaster and hardship with its guardian goblin that is fetched by Chinese sky lanterns flown by the villagers. The play's splendor is enhanced by unique hologram and drawing performances.

**HOLOBEATS**

- <HOLOBEATS> a beat game developed by applying HoloMR, Bibimble's patented technology. It is a performance game that lets you enjoy beats on the outside as well since visual scenes in the game are projected by hologram. The visual scenes could be viewed by only the players so far.

**Hidden Story VR**

- Historic events known to us by text and images only are now accessed with 4th dimensional VR performance. This game features a vivid experience of historical events known to us superficially through utilizing the actual surrounding conditions, people, props and tools that were directly used in the olden days. It can restore olden-day events involving historical figures such as Junggeun Ahn, Bonggil Yun, Bongchang Lee, and Ku Kim.

**Vibetech REAL**

- VibeTech REAL EXHIBITION is a metaverse platform that offers a diverse experience as it consists of a website that can easily manage events and client PCs that can be connected to a vivid virtual exhibition ground.

**Applied technology**

It enables multiple users to experience identical virtual reality scenes using HoloMR, an autostereoscopic mixed reality (MR) system.

It creates diverse digital converging space starting with digital exhibitions based on metaverse, and creates AI digital humans similar to real people by connecting AI engines to digital humans produced in a desired form.

VibeTech REAL is a service that enables exhibitions with simple manipulation owing to the website and clients interoperated based on Unreal Engine. It is a service solution that enables virtual exhibitions with simple manipulation with the website and clients being interoperated. When such contents as exhibition information, images, video clips, etc. are entered using an automated solution, the server is automatically opened and virtual spaces can be set up or opened without the developers' help.

**Business direction**

HoloMR can be used most actively in areas of comprehensive entertainment performance like Goblin Fantasia and HOLOBEATS.

As it offers a feature that enables people outside to experience the corresponding VR contents that relevant parties see with their naked eyes, namely, without using VR goggles, it can be utilized in areas of education, VR e-sports, and VR riders where many people can view what a person plays.

VibeTech REAL is an online exhibition platform designed in tandem with the non-contact environment, which enables you to view exhibited contents in a metaverse world. Its feasibility has been proved as a total of 12 events have been successfully held in six months after its launch in July 2021. Anyone can set up an online exhibition hall which as many as 3,000 users can easily access. You can also produce a metaverse exhibition hall customized according to plans.

Building bridges that connect imagination to reality

# Bibimble Inc.

# BIBIMBLE

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**Type of business** Information services, VR-MR content distribution, and software development & supply

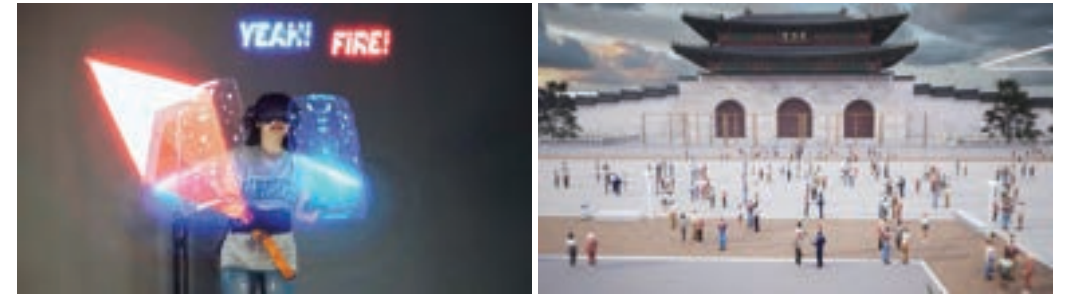
**Business field** VR, AR, Hologram, Digital Human, Metaverse

**Company introduction** Bibimble is a company that aspires to build bridges that connect imagination to reality. The representative and experts of various areas have gathered under the company name of Bibimble for a new challenge to converge merits of different areas. Bibimble, Inc. develops user experiences and platforms based on innovative technologies by combining the state-of-art digital media technologies.

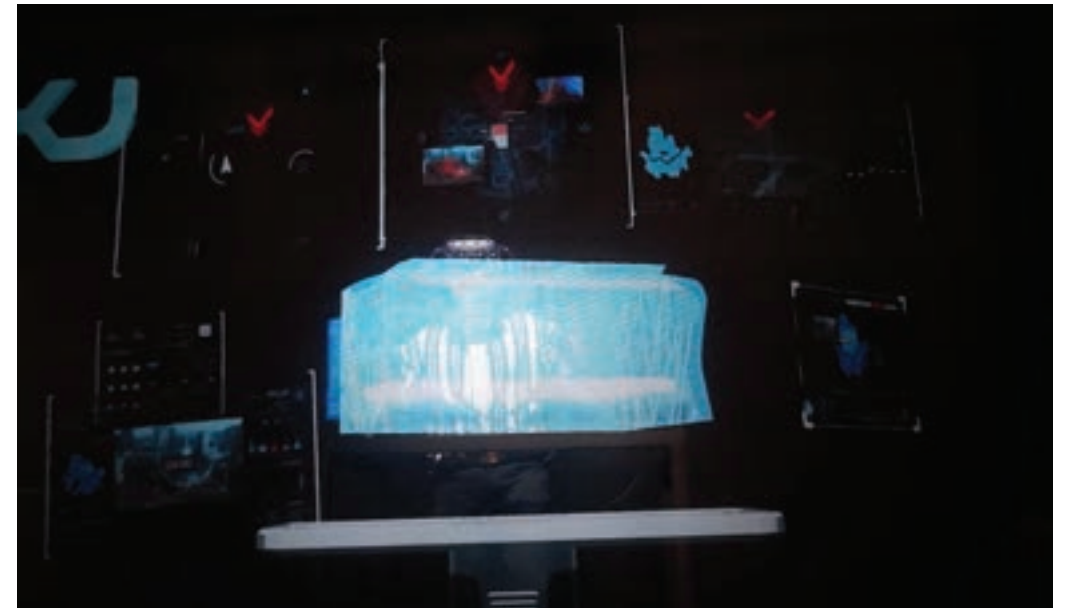
It carries on in-house technology development along with promotions based on technologies using elements of AR, VR, interactive holograms, AI, digital human, digital twin, metaverse, etc. It carries on businesses creating marvelous useful experiences by combining materials based on diverse and new technologies. It has explored diverse areas of metaverse with its technological competencies, including existing interactive hologram performance, hologram rhythm games, and AI-assisted digital humans. It recently innovated life styles of the exhibition service market by utilizing metaverse VibeTech REAL exhibition based on hybrid platforms. It plans to expand its metaverse business areas by launching enterprise-type metaverse and digital-twin open world service for businesses from now on, leveraging its metaverse solutions for virtual exhibition.

**Core technology** HoloMR, an auto stereoscopic mixed reality system, enables many people to experience an identical virtual reality concurrently. It creates diverse digital converging space starting with digital exhibitions based on metaverse. An AI-assisted digital human similar to real people is produced by connecting AI-engine to digital human produced in desired forms. VibeTech REAL is a service that enables exhibitions with simple manipulation owing to the website and clients interoperated based on Unreal Engine. It is a service solution that enables virtual exhibitions with simple manipulation with the website and clients being interoperated. When such contents as exhibition information, images, video clips, etc. are entered using an automated solution, the server is automatically opened and virtual spaces can be set up or opened without the developers' help.

- Company introduction**
- 'Outstanding metaverse business' prize awarded by the Ministry of Science & Technology in 2021;
  - Metaverse Exhibition service has been employed for many projects like the Seoul Occupation & Career Fair, Seoul Art Market, K-Pop Showroom, University Reform Forum, and Metaverse Alliance Open Conference;
  - VR 'Visit to Provisional Korean Government, Shanghai' celebrating the 100th anniversary of its founding;
  - 'HOLOBEATS' - a rhythm performance game converging VR and hologram;
  - 'Hidden Story VR' cinematic history game titled "Following the Footprint of History;"
  - 'Dokkebi (Goblin) Fantasia' a hologram fantasy performance;
  - LX hologram 3D control tower;
  - VR Mercedes-Benz;
  - VR President Moon's Day at the Blue House.



LX Control Tower



Hidden Story VR





Providing services for digital cosmetics by realizing digital makeup

# alijas Co., Ltd.



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**Type of business** Development and supply of online mobile game software, other game software, application software, etc

**Business field** Operation of AR makeup content platform, virtual human makeup service, service for providing cosmetic company product digitization code, AR filter production marketing

**Company introduction** Alijas is a company specialized in providing services for digital cosmetics by realizing digital makeup on real and virtual people by steadily performing research of related technologies after winning an award in the open competition entitled the 2018 ICT Culture Convergence Ideas.

- Core technology**
- 1) **Digital cosmetic code research & development**
    - It provides AR makeup service that digitally transforms makeup contents by implementing digital cosmetic code, and disseminates the tools (DCC).
  - 2) **Development of VVUTI, an AR-driven makeup platform using facial recognition technology**
    - We developed an application that allows users to apply makeup using AR to imitate the texture of the actual product following the makeup process presented by the beauty creator, and introduced a cosmetic shopping mall (VVUTI mall) where the consumers can purchase the product.
  - 3) **Development of virtual human Vona**
    - We created a virtual human that connects the virtual and real worlds, at the vanguard of the new beauty market as a digital makeup artist.
  - 4) **AR filter content production**
    - We produced various AR contents, including AR filters for global short-form platforms, such as Instagram, TikTok, Snapchat, etc.

- Major Achievements**
- 2020 NIPA VR/AR commercialization support project;
  - 2021 Innovation Area of the Startup Package Untact Startup Development Project; Selected as 9th term Startup-NEST by the Credit Guaranty Fund for 2021
  - 2021 Prize for Outstanding performance at the 2021 Smart Media X-Camp, Jeonju, Chonbuk-do;
  - 2021 2nd place at the 2021 Buwulkyeong IR demo day.
  - 2022 Minister of Culture, Sports & Tourism\_Recommendation / 2022 Gyeongnam Startup Idea Advancement Competition League 1 (Encouragement Award)

## AR Content Production CRE-AR

We produce various AR content, including AR filters for global short-form platforms like Instagram, TikTok, & Snapchat. We create a world where customers can communicate more effectively through AR content & technology.



Hi, I'm VONA  
'VONA' is alijas virtual creator.

A digital makeup artist in the metaverse creates a virtual human that connects the virtual and real worlds and crosses the borders along with makeup. It leads the new beauty market as a virtual human trendsetter who has a pulse on the MZ generation and makes various, refreshing expressions.



Digital Cosmetics Code



Expression of various colors, textures, gloss, & feeling according to each manufacturer's characteristics



Entertainment

# Five-sided interactive AR immersive space [X-Rumpus Box]

Hosting institution Sharebox Co., Ltd.

## Content introduction

**X-Rumpus Box** is a five-sided interactive XR experiential space composed of projection mappings for five interior surfaces, including floors and walls. It is a promotional marketing service space geared to the 4th Industrial Revolution to provide experiences and memories by directly experiencing and sharing the places and contents to be promoted. It is a service that enables sensory immersive XR content experience using a 3D sound system by recognizing the behavior and gestures of people in the booth, providing experienced images to experienced people



### Hidden Pictures - Ilwolobongdo

- Touch the floor and wall to find hidden paintings of the traditional painting <Ilwolobongdo>, which represents S. Korea.
- Find hidden objects while quickly touching the wall with your hand.



### Pumping Square

- It is a 5-sided interaction rhythm game through user motion recognition, and a multi-user experience is possible.
- Compete for the scores by following the gestures that move on the screen.



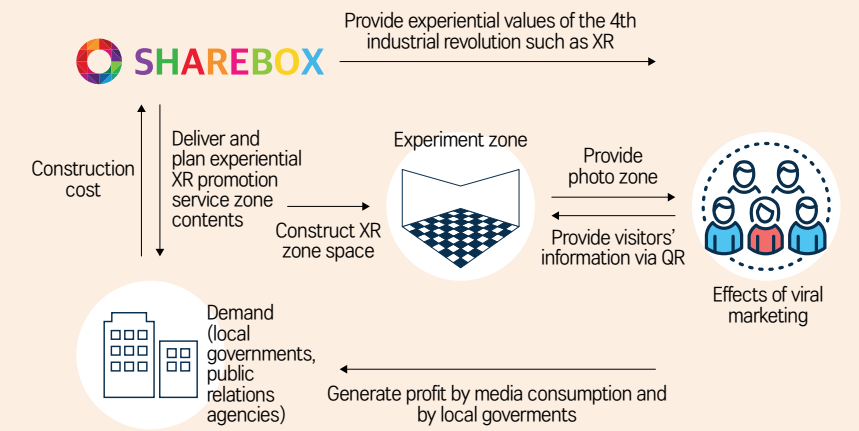
### Escape Room - The Truth of Bastien

- It is a new type of XR escape room game content that interacts through actions & gestures within the space.
- Touch the wall to find and combine clues throughout the room to discover the truth about Bastien.

## Applied technology

- Automatic space configuration recommendation technology(Transferred technology)**
  - Technology that proposes the location of projectors & sensors in space and calibrates among projections
- Behavior recognition technology**
  - Technology that can sense, recognize, and interact with participant movement & location movement
- XR convergence/expression technology**
  - Technology to express interactive phenomena based on behavioral responses & QR recognition
- XR experiential marketing space System technology**
  - Function to receive one or more senses and convert them into other forms & sensory information

## Business direction



- Expansion to family units by centering on the MZ generation who values experiential values. Provision of a consumer oriented service that produces a viral effect on social media channels with the 'selfie pictaking' culture.
- Build an immersive experience box XR service by receiving orders from customers.

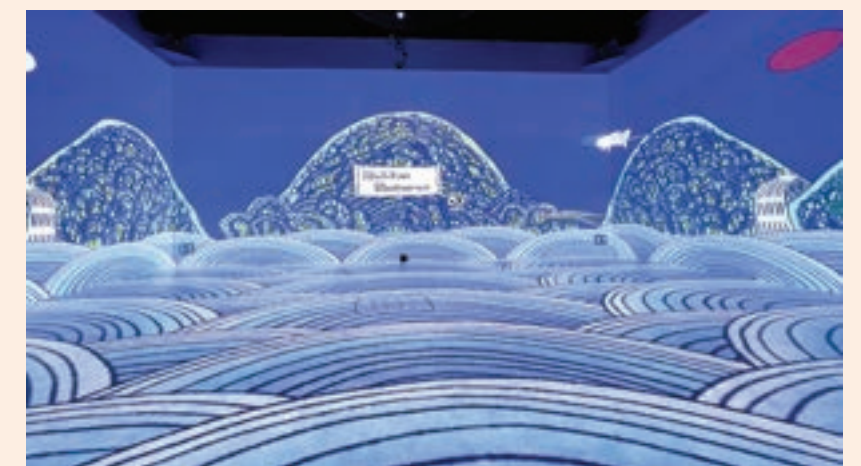
### Hidden Pictures



### Pumping Square



### The Truth of Bastien



Company that practices equal opportunities across time and space

## Sharebox. Co., Ltd.



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**Type of business** Development and production of realistic content

**Business field** VR-XR-metaverse realistic content

**Company introduction** Sharebox Co., Ltd. is a company that provides related solutions based on the production of cultural educational content. By converging new video technologies, ideas, and experiences through various endeavors, we provide content that can be shared and understood by transcending generations and languages, while striving to realize cultural welfare.

**Business field**  
Starting with non-verbal performances in 2015, we produced various realistic contents formetaverse content outsourcing production and in the field of cultural educational content, such as projection mapping in 2018, VR performance content in 2019, VR-AR content production in 2019, MR content production in 2020, contents for Kookmin Bank and the Community Media Foundation in 2021, etc. Capitalizing on these experiences, we are currently producing XR and metaverse content in expanding our business field. In 2022, we constructed the KB Kookmin Bank metaverse VR branch as a partner and self-produced interaction astronomical content <Space Expedition>. In addition, focusing on overseas marketing, we are leaping forward as a global metaverse company by participating in and holding various overseas exhibitions such as CES2022, MWC Las Vegas, and GITEX Dubai, and signing MOUs with Indonesian and Chinese companies.

**Core technology** Sharebox Co., Ltd. has the technology to create content to be installed in the XR immersion zone based on its extensive experience in producing VR/XR content centered on culture and education, at the vanguard of the 4th Industrial Revolution.

- **Own Content Production**  
VR development using a 3D Engine such as Unity Engine, programming language, content development, subsystem development, etc. Possession of own contents other than astronomy educational contents.
- **XR Content R/D**  
Development of five-sided experiential marketing service space & interactive realistic content LED technology.
- **On-demand Metaverse Content Production**  
Production of outsourced contents based on demand, such as the Kookmin Bank metaverse VR branch, immersive contents within the Community Media Foundation for Metaverse Industry 4.0 VR education.

- Major Achievements**
- 2022. 10 Participated in GITEX Information & Communication Fair in Dubai / Participated in MWC in Las Vegas;
  - 2022. 08 Selected for the SBA Seoul demonstration test bed project, proceeded to Seongbuk-gu as a demonstration institution;
  - 2022. 06 Selected for TIPS startup commercialization and overseas marketing support project;
  - 2022. 05 Selected for R&BD project to strengthen corporate capabilities in the research institute;
  - 2022. 04 Selected for a new cultural content creation project by Daejeon Information & Culture Industry Promotion Agency
  - 2021. 12 Constructed the Kookmin Bank metaverse VR branch;
  - 2021. 10 Selected for TIPS R&D program (22.11~23.10);
  - 2021. 10 Attracted seed investment from Etri Holdings Co., Ltd.;
  - 2021. 09 Set up exhibition booths at Las Vegas CES, Spain MWC, Singapore AsiaTech, China World VR;
  - 2020. 05 Start-Up Leap Package MR (AR+VR) Content <The Universe, Let's Play!>

## Entertainment

# Multilingual Digital Human Video Production Service(AiVATAR)]

**Hosting institution** AIPARK Co., Ltd.

### Content introduction

**AiVATAR is a service that can generate artificial intelligence voice (speech) and video (talking head) when text is input, producing a multilingual digital human video that can read from text to speech.**

- You can experience video content creation by simply typing answers directly to questions from digital humans. It is a way to incorporate well the concept of producing attractive digital human video only by text input from the actual AiVATAR service.
- This content allows you to transform oneself into a digital human by taking only one instant photo and becoming the main character in a video content. And it is immersive content that simplifies the AiVATAR custom service called 'actual image-based digital human production.' By visiting our studio, AI STUDIO, and finish shooting for about 5 minutes, anyone can create their own digital human that is more lively.

### Applied technology

- 1. Text to Speech**
  - The self-developed artificial intelligence voice synthesis algorithm learns an hour-long dataset consisting of text & voices. After learning, the user can output the corresponding voice by simply entering the text.
  - We researched and developed our own algorithm and posse many TTSs.
  - AI voice implemented with this technology is currently being used by local cable, D'Live broadcasting & audio book companies.
- 2. Talking Head Generation**
  - A technology of re-generating a speaking face according to the voice output by TTS only with about 5 minutes of facial video or photos
  - A technology that the self-developed artificial intelligence image synthesis algorithm learns tens of thousands of voice & face data, producing a speaking image regardless of voice input
  - It has increased versatility by learning a large amount of data to speak more than 60 languages naturally, in addition to Korean, English, Japanese, & Chinese.
- 3. Face Generation**
  - A technology to create a virtual person by creating a completely new face through synthesizing different faces to create a completely new face
  - It is a face of a virtual person synthesized and recreated based on a real person's face, rather than a graphic, so the result has little sense of heterogeneity and is free from portrait rights issues.
  - ※ 'Jenna', the first AI anchor in S. Korea to apply all of the above three technologies, has been active as an anchor for JTBC's morning broadcast, and the newly developed AI announcer 'LoA' is currently conducting D'Live regional news.

**Business direction**

**Advancement direction of applied technology**

- Development of high-quality, high-efficiency digital human production solutions;
- Create natural mouth shapes by enhancing language-specific Lip Sync accuracy;
- Enhance the naturalness of digital humans through high-definition Speech-To-Face;
- Create more dynamic digital human by applying Head Motion;
- Expand the content area where you can apply by controlling the expressions of digital humans and creating voices containing emotions;
- Create more natural digital humans in metaverse by creating 3D avatar images

**Additional content-related development plans**

- We're developing a program that generates initial consonant quiz video content by only entering words.
- We're planning content in conjunction with AI-based automatic text & image generation services such as ChatGPT & Stable Diffusion Online.



Anyone can become a digital human with just 5 seconds of filming!



**01 Text input**

Enter the desired text. AiVATAR supports more than 60 languages.

**02 Voice creation**

A voice is created based on the text you enter.

**03 Video creation**

If you select a Digital Human, a digital human speaking video is created according to the entered text.

Company that expands their customers' businesses through digital humans

**AIPARK CO., LTD.**



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**Type of business** Application software development and supply

**Business field** AIPark is developing a solution that can produce digital human images by simply entering text

**Company introduction** "Enable to see and hear all texts worldwide!" AI Park uses artificial intelligence technology to produce customers' avatars, and using avatars, it makes customers transcend the constraints of their time, space, and language skills. Through this, we create an infinite video world that expands with artificial intelligence.

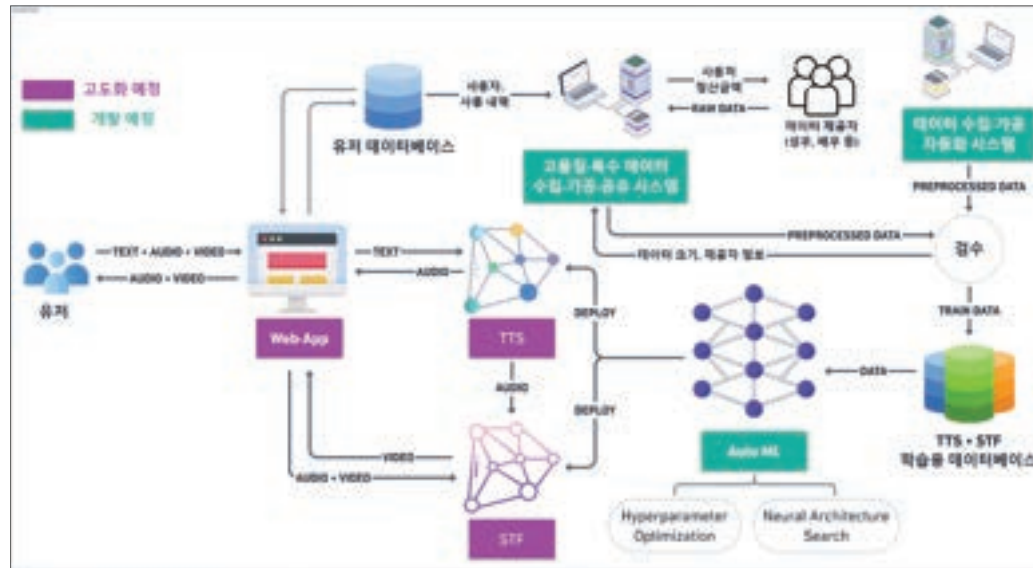
**Core technology**

- TTS (Text-to-speech): It creates a TTS model that can speak as text by learning only 20 minutes of voice data.
- STF (Speech-to-face): Anyone can create a digital human from only 5 minutes of shooting data without a separate learning process. The digital human created in this way can speak according to the input voice with over 60 languages available to choose.
- Face generation: It creates faces that have never existed before by combining multiple faces.
- ※ With AiVATAR, a convergence of these three technologies, customers can create digital human images that speak in multiple languages simply by only inputting text.

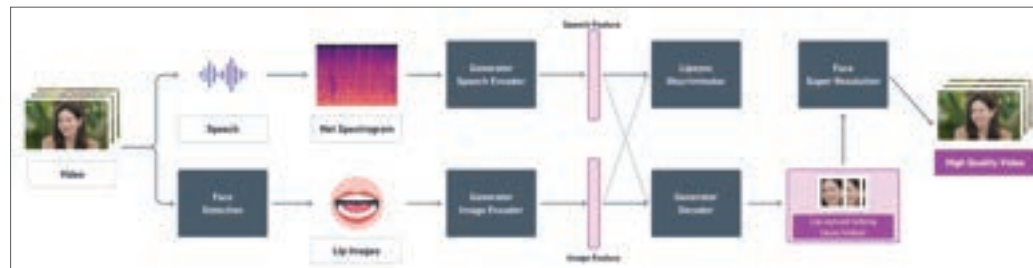
**Major Achievements**

- Jenna, Korea's first virtual human AI anchor, debuted JTBC Morning & [The World Picked by AI] ('22.02)
- SEED investment round attraction completed ('22.03)
- Signed a memorandum of understanding (MOU) with D'LIVE ('22.04)
- Signed a memorandum of understanding (MOU) with JTBC ('22.04)
- Selected for 'Majung Program' by the Ministry of SMEs & Startups-Microsoft ('22.05)
- KBS 2TV <Morning Worth Trying> introduced virtual human 'Park Jae-min' ('22.05)
- Selected for TIPS, a technology startup support program ('22.05)
- Participated in exhibition booth of Try Everything 2022 ('22.09)
- Opened an AI announcer experience center in Sangam-dong, Mapo-gu, Seoul ('22.09)
- Participated in AWE EU overseas fair ('22.10)
- Debuted 'LOA', AI announcer reporting local news ('22.12)

AIVATAR System Architecture



STF(Speech-To-Face) baseline



Entertainment

Network-based two-player room escape content [Silent Turn, Adventure Series]

Hosting institution YOUCANSTAR Co., Ltd.

Content introduction

Offline escape room  
Apply game rules

- Provide random puzzle problems every time you play;
- Apply the 30 minute time limit rule

Four-player CO-OP play  
Gather your thoughts!

- Support a single or multiplayers;
- Up to 4 users can enjoy the game cooperatively

Human interaction UX  
Combination of human & space

- Composition of synesthetic puzzles that maximize the player's physical activity;
- Utilization of 3-dimensional virtual space beyond point & click

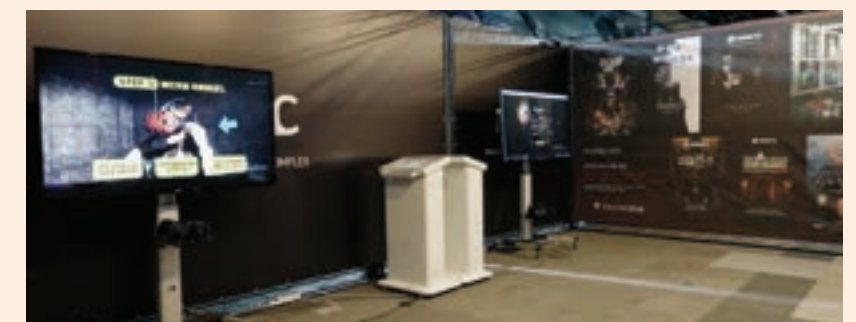
- Play the game by actually moving within a specified location in the room scale space;
- Play with other users via multiplayer;
- Players play in a segregated space in virtual reality

Applied technology

- Interactable technology
  - The self-developed Interactive technology modularizes the pre-made interaction processing technology and provides interaction properties only with a combination of basic modules.
  - This is a method of increasing productivity by shortening the development period and reducing errors in content production.
- Possession of VR & AR-related technologies
  - Extensive experience in planning and completing development of VR-related content for many years
  - VR network technology can interlock various VR devices, voice communication, & multiple access.
  - Possible to experience various AR contents by utilizing AR space recognition & tracking technology

Business direction

- Production of a high-quality escape room through the technology of location escape room VR;
- Produced with the goal of launching in November 2022;
- Since then, nine new styles of stages have been offered through the DLC;
- After 2025, we will build a metaverse ecosystem based on escape room.



VR content company based on interaction processing technology

# YOUCANSTAR Co., Ltd.



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**Type of business** Service

**Business field** VR contents production

### Company introduction



YouCanStar Co., Ltd. plans to become a contents producing company that enables developer and players to feel a miracle in life through new experience with a vision of 'a company producing miracles using contents'.

- Core technology**
- Technologies synchronizing VR/ AR/ XR networks
  - Technologies synchronizing VR/ AR/ XR space
  - Technologies for developing PS4 contents

- Major Achievements**
- 2017 Seoul Land XR Children Safety Experience Ground
  - Selected as the 3rd Outstanding Game of the Month by 2018 KOCCA
  - 2018 PS4 'The Door' launched in Asia, Europe, Japan, and North America
  - 2020 LBE network-based room escape contents launched
  - 2022. 05 Acquired Venture Business Certification
  - 2022. 12 Successfully made a convertible bonds issuance

### Memorial Metaverse

Create a metaverse space where people who remember the deceased can form a community to memorialize them in a virtual space

**Content name** : Memorial Metaverse  
**Genre** : Metaverse

**Service platform** : Mobile/PC  
**Core technologies** : Authoring tools, PC/mobile access, NFT market, platform  
**Target group** : People who mourn the deceased

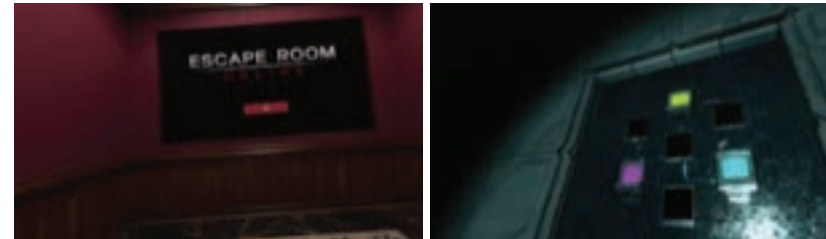


### Escape Room Online

Capitalize on the strengths of online play to solve tricks with multiple friends and attempt to escape in time.

**Content name** : Escape Room Online  
**Genre** : VR Online

**Service Platform** : Oculus 1, 2  
**Core technologies** : 4-player network escape room game, VR escape room game  
**Target group** : Escape room users in their 20s & 30s



### ESCAPE ROOM ONLINE

온라인 플레이어의 감정을 활용하여 다수의 친구와 함께 트릭을 풀고 제한시간안에 탈출 해야 한다.

- ◆ 2 ~ 4인 협동 온라인 방탈출
- ◆ 플레이 타임 : 15 분
- ◆ 플레이 공간 : 3.5M x 3.5M
- ◆ VIVE 또는 오кул러스 퀘스트 사용

DLC를 활용하여 발매 후 다양한 컨셉의 에피소드를 추가하여 게임성을 높여 간다.

Entertainment

- ① Physical environment applied metaverse [Real Meta]
- ② SMU Android Special Investigation Unit

Hosting institution SIGONGtech Co., Ltd,

Content introduction

Physical simulation VR immersive content that allows many people to interact together A physics-based realistic experience spatial-moving virtual reality content in which multiple people connect in a gym space and interact with each other in a virtual space to progress

- A spatial-moving immersive content that can be moved using devices in virtual reality
- Experiential platform based on VR metaverse environment that enables various interactions based on physics simulation

Applied technology

- Minimizing dizziness using cyber shoes that can move infinitely in virtual space;
- Providing the same experience as the real world in the virtual reality space by applying physical environment variables;
- 5 players access the virtual space coincidentally to experience and share experience elements.
- Implementing VR contents based on multi-person space in a wireless environment without a backpack PC, using wireless streaming VR in a WiFi6 environment.

Business direction

- B2G business: Domestic & foreign science museums, experience halls, exhibition halls, complex cultural spaces, etc. Promotion of commercialization in the existing science museum & permanent experience center
- B2C business: Promoting the commercialization of story-based experiential theme parks Sales of devices through social media promotion & Steam VR promotion



Global Creative Group Leading Realistic Content & Art & Tech

SIGONGtech Co., Ltd,



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Type of business

Advertising, Publicity and Exhibition

Business field

Realistic content, Art&Technology, Simulator, Interactive media, Science hall, experience hall, Museum, exhibition experience hall, Interior, EXPO

Company introduction

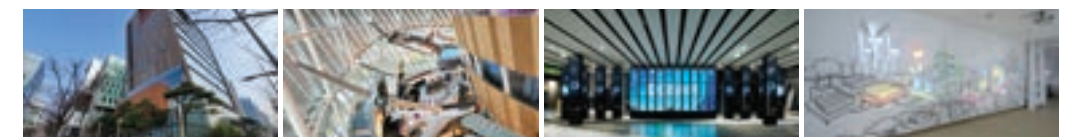
- "SigongTech is global creative group that leads realistic content, and art & tech," SigongTech is a company specialized in exhibition, culture, and realistic contents. To date, it has been growing since its establishment in 1988 and seeks building a reputation coinciding with "first in Korea."
- Notably, SigongTech is developing various realistic technologies and contents at its laboratory, as the content industry is becoming important in these days.

Core technology

- SigongTech is specialized in realistic contents (largest number thereof and best in Korea), art & technology, culture, and interior, and has a cultural technology research center with many experts.
- SigongTech acquired more than 240 intellectual property rights (patents)

Major Achievements

- 1988 to 2012
  - Established SigongTech Co., Ltd. and Park Ki-seok was appointed as the CEO;
  - Received the Presidential Commendation for contribution to the Seoul Olympics;
  - Established the annexed video and exhibition technology research center, and model workshop;
  - Acquired a license for interior construction business;
  - Received the commendation from the minister of Science & Technology in celebration of 25th Science Day;
  - Registered the factory (production of video and sound equipment, model, display case, storage and furniture);
  - Listed in KOSDAQ;
  - Established subsidiary companies (Sigong Munhwa Co., Ltd. and I-Scream Media Co., Ltd.)
  - Receive the commendation from the minister of Culture, Sports & Tourism in celebration of Space Culture Day 2012.
- 2013 to present
  - Received the Presidential Commendation for contribution to Expo 2012 Yeosu Korea;
  - Received the commendation from the minister of Education, Science & Technology (for successful launch of Naro);
  - Awarded the Gold Tower Order of Industrial Service Merit (exemplary small and medium business entrepreneur);
  - Newly established the interior business division;
  - Acquired a license for general construction business (building construction business)
  - 2019 Subsidiary company I-Scream Edu listed on KOSDAQ
  - 2019 Received the 2019 iF Design Award (2017 Astana Expo Korea Hall)





<p><b>SIGONG tech</b> 박물관, 과학관, 역사관, 체험장과 밀접수용성등을 전문으로 하는 종합전시문화기업</p>	<p><b>SIGONG international</b> 태국, 카자흐스탄, 중국, 아랍에미리트 자사 설립으로 해외전시사업 수행, 제작사업개발 강화</p>	<p><b>SIGONG munhwa</b> 관람감 및 수감과 설계, 제작 컨설팅, 시공, 시후관리까지 책임지는 보존형 일체형기업</p>
<p><b>i-Scream media</b> 교육 콘텐츠 및 온-오프라인 서비스 개발을 위한 종합 디지털 전문교육기업</p>	<p><b>i-Scream edu</b> 차기세대 학습 프로그램인 i-Scream Home Learn을 제공하는 초등-중등 디지털교육기업</p>	<p><b>i-Scream kids</b> Little Home Learn, nur-look, Cubica 등 유아교육서비스 및 교육연구개발 전문기업</p>

Business Area


Entertainment

# XR-enabled i-VERSE service using MR Table

Hosting institution ISPark Co., Ltd.

Content introduction

XR i-verse content service using MR Table

- HExperience multiple immersive mixed reality content wearing a head-mounted display
- Provide XR service by utilizing a familiar touch display targeting general users unfamiliar with UX in a 3D environment
- The goal is to provide a convenient, immersive user experience by minimizing education for content appreciation for experienced users.
- Provide customized content for demand with differentiated content production technology by industry sector. : Fashion (virtual model), science education (interactive digital tutor)

Applied technology

- Transmit augmented content on the MR table & experiencers to a large screen from third-person perspective, using an external camera & spatial location sharing system;
- Based on a shared location, it consists of augmented miniature mode & 1:1 actual object mode content on the MR table;
- Create real-time third-person transmission video by sharing virtual space and user location information;
- Live video transmission & educational video recording for indirect audiovisual experience, targeting a large number of soon-to-be educators;
- Apply various 3D data production technologies (i.e. volumetric capture data, photogrammetry/Lidar scan data) by industry

Business direction

B2B / B2G

- Respond to demands for industry education & experiential/ field practice education, targeting many people.
- Provide services by configuring H/W & S/W packages through demand analysis from audiovisual education to education using either mixed or virtual reality.



## I-Plant

### Training Content Production for Manufacturing/ Shipbuilding/ Power Generation/ Port Industry

WIG Craft (Flying Ship) Experiential Content  
 Unmanned Ship VR Simulator Content  
 Shipyard 360VR Tour Content  
 Power Plant BFP Site Inspection & Training Content  
 Manufacturing Plant- Painting, Welding Training Content  
 Busan New Port Smart Port Logistics Platform



## I-Science

### XR-Driven Realistic EdTech Content

AI Tutor Responsive Learning Guidance (Voice Recognition)  
 The Mystery of Human Body Exploration/  
 Volcanoes & Earthquakes/ Solar System & Stars



## I-Shop

### Fashion Shopping Platform Construction

Live Mannequin  
 Virtual Runway  
 Virtual Shore



## I-Defence

### MR Teaching Plan for Mortar Operation/ Shooting Training

Equipment operation/ equipment inspection/ gunner's examination/ shooting procedure training  
 Miniature/ actual scale mode  
 MR Deceit single & multi-play

Infinite Solution Park

# ISPark Co., Ltd.



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**Type of business** Software Development

**Business field** Digital Twin, Cloud, AI, Metaverse, Consulting & Service

**Company introduction** Ispark Inc., whose name implies 'a limitless space for solutions', plans to present best solutions based on requirements of customers and markets by creating added value and contributing to the development of industry with solutions and technical services satisfying customers' needs.

**Core technology** The company has employed technical experts producing convergence contents for applying immersive media and engineering technologies to entire industries in order to expand its business to areas such as defense, shopping, and distribution based on its capabilities accumulated in manufacturing engineering.

- Major Achievements**
- On/offline fashion goods shopping platform deployed using 5G VR/ MR technologies (2020)
  - XR integrated monitoring and training system developed based on space synchronizing technology (2020)
  - Developed VR remote education/ training simulator (2021)
  - Developed XR-based experiential smart learning simulator design (2021)
  - Developed XR-based integrated military drill virtual education contents (2021)
  - Developed AI-based heavy equipment access alarming system (2021)
  - Developed AR/ VR-based mortar handling and firing training system technology (2021)
  - Produced unmanned vessel VR contents simulator (2021)
  - Produced unmanned vessel kiosk for special regulation-free zones
  - Developed web-platform for exercise by digital Nanta drum (2021)
  - Produced virtual equipment AR contents (2021)
  - Developed simulation environment for predicting product quality and optimizing processes (2021)

### Key Awards History



Major Authentications



Industrial Automation Portfolio Oriented to Various Customer Needs

01

Digital Twin/Smart Factory

- RLM/MES/APS/QMS CAD/CAM/CAE Solutions for manufacturing efficiency
- 3D EXPERIENCE Platform-based connected smart factory
- Engineering consulting/software development for design efficiency

02

Cloud

- Process-oriented performance management/ personnel evaluation/regular work & collaboration management
- Research project management/ content management system
- Financial decision-making/executive information/ management evaluation/creative proposal system

03

AI

- RPA task automation (Robotic process automation)
- AI-based system Development & construction
- AI system linkage & operation

04

Metaverse

- Virtual training, education, virtual experience simulator
- Precise shooting/ tactical training simulator
- VR-AR-MR content production simulator, system construction

05

Consulting & Service

- Aerospace & defense
- Reference building knowledge assets possession
- Global MBSE company cooperation, solution development



Digital Transformation = Automation + Intelligence

09

XR Devices

Korean XR Devices' Experience and Exhibition Space [XR Device Lab]

- Gumi Electronics & Information Technology Research Institute(eXtended Reality Device development support Center)

XR Devices

# Korean XR Devices' Experience and Exhibition Space [XR Device Lab]

**Hosting institution** Gumi Electronics & Information Technology Research Institute  
(eXtended Reality Device development support Center)

**Content introduction**

With a focus on leading the global XR device and metaverse markets, XR Device Lab has prepared a space to promote the excellence of various domestic XR devices by displaying its finished and prototype products and by providing opportunities of experience. It is also a space to produce metaverse content by providing rental services for domestic XR devices. In this space, we provide an opportunity to experience seven types of finished products and prototypes of domestic XR devices, while also providing a rental service to drive and test metaverse content directly on domestic XR devices. We plan to provide a venue for experiencing various domestic XR devices through continuous updates on domestic XR devices to be developed and released later.

**Applied technology**

**Devices possessed**

- METALENS / P&C Solutions Company
- MediThinQ metascope / MediThinQ Co., Ltd.
- PV-F200 / Panovision Co., Ltd.
- AS-GERI01 / Elvission Technologies
- GTM-200 / Panacea Company
- PR-T1 / Prazen Corporation
- KXR device / Kaonmedia Co., Ltd.
- XR device-linked 360-degree neckband camera / Linkflow
- NMO Air / (Foreign)
- Dream glass 4K / (Foreign)

**Business direction**

Pursuing leadership in the global metaverse market with traction and dissemination of its domestic XR devices by expanding market areas to education and entertainment, with a focus on the B2B market in areas where XR is highly utilized, such as XR-driven smart factories, medical care, and military



PANOVISION PV-F200

KAONMEDIA KXR device

P&C Solution METALENS

Panacea GTM-200

Securing the world's best XR device commercialization technology and fostering small but strong global companies

## Gumi Electronics & Information Technology Research Institute

(eXtended Reality Device development support Center)



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**Type of business**

R&D, technical testing, inspection and analysis

**Business field**

XR devices, micro-display, XR optics, etc

**Company introduction**

- Support for technology development for commercialization of XR device core components & finished products
- Supports for XR device performance & reliability evaluation
- Operation of the XR Enterprise Support Program

**Core technology**

- Support for micro-display development
- Support for commercial optical modules development
- Support for sensor & drive board development
- Support for assembly packages development

**Major Achievements**

- Released 7 kinds of domestic XR device finished products
- 17 cases of support for both XR device finished & prototype products





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