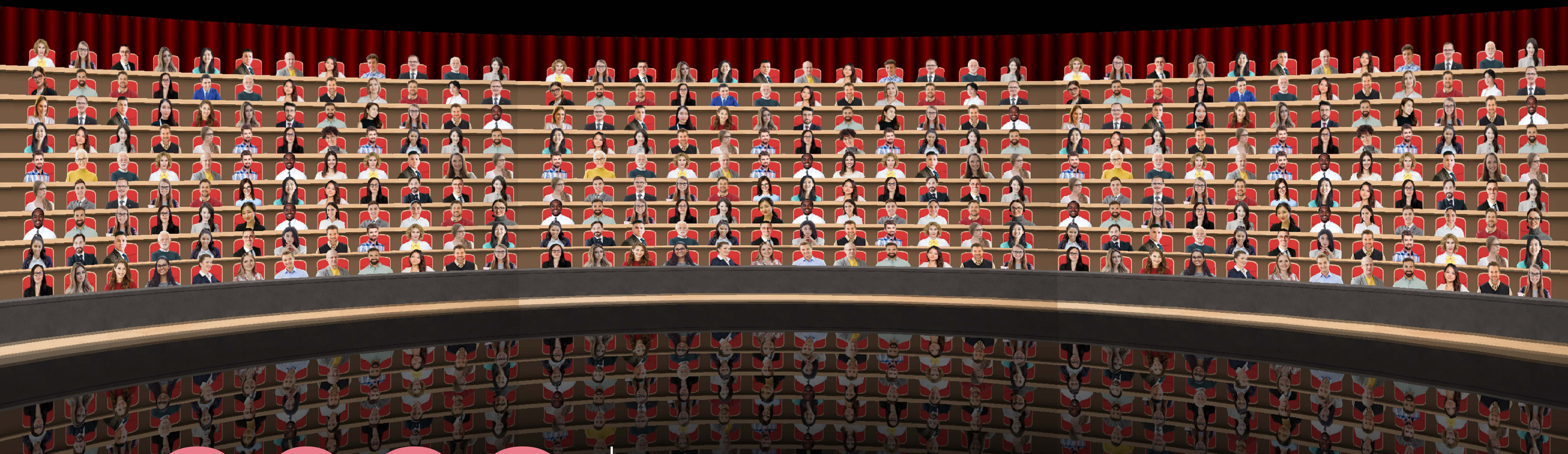

# 2022

Vision AI-based, next-gen Video Conferencing Solutions

# BreakOut & TOMMS

## “From Meeting to Mission”

by Haeden Bridge’s Immersive Visual Communication


HAEDEN BRIDGE

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tel 02-2291-5438 | fax 02-2291-5437 | e-mail enquire@haedenbridge.com | website www.haedenbridge.com

# History of Haeden Bridge

## " A dedic ated 20 years of experience in the video communications industry"

**Scalable video conference • Immersive Telepresence • Two-way Webinar • e-Learning •**

**Live event two-way broadcasting • MICE • Customer support**

### 2019

- All in one Triple Play Service
- Communication, Data and Media broadcasting

### 2006

- World's first mobile video communication service for Korea Telecom 3G Wibro

### 2002

- Established in Seoul, Korea
- Patent: Multicasting technology saving bandwidth over WAN

### 2005~2009

- Investment Korea Development Bank Soliton(Japan)

### 2020

- Korean government R&D Projects

**Haeden Bridge's Media Processing System(MPS)™, a patent technology provides**

**- Scalable video conference**

**- Dramatic network savings**

**- UICS (Unified Immersive Communication Service)™ with rich media collaboration**

### TOMMS : On Premises

- Globally scalable video conference service(Government, Enterprise)

COVID-19 Pandemic 2020 ~ post-COVID-19

### BreakOut : Cloud Service

- Live event two-way broadcasting

K-INNOVATIVE PRODUCT

**K Innovative Products "TOMMS"**
**Vision AI-based virtually immersive video conference solution**

- Private contract possible
- Purchasing immunity of purchasing manager of demand agency
- Reflected in institutional evaluation of purchasing performance

### General status

| | | | |
|---|---|---|---|
| Representative Product | BreakOut | Online Workshop Platform | https://www.breakout.cloud/ |
| | TOMMS | Built-in Video Conferencing Solution | http://www.tomms.kr/ |
| | | ※ You can use the product for free for 14 days via [Free Trial] | |

# Key Features

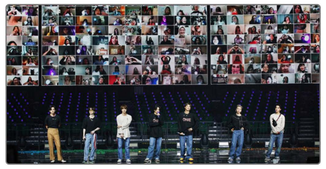
## Network savings by Multicast Tunneling

## Highly immersive virtual Telepresence

## Scalable session breaking out

## Scalable two-way live event broadcasting

Korea festive event
2020.9



BTS MAP OF THE SOUL ON:E
2020.10

Samsung Galaxy Unpacked
2020.9

K-Pop live concert
2020.9

SBS TV concert
2020.4 ~ 12

MBC TV cooking show
2020.6 ~ 12

## "From meeting to mission"

**Not a legacy video communication platform. TOMMS and BreakOut help you complete your missions.**

## Korea New Software Awards (2015, 2021)

상 장

멀티미디어SW 부문 (주)해든브릿지
TOMMS™

위는 2015년 12월 'K-ICT 신소프트웨어상품대상' 멀티미디어 SW 부문에서 위와 같이 입상하였으므로 이에 상장을 수여합니다.

2015년 12월 14일

미래창조과학부장관 최 양 희

상 장

멀티미디어&서비스SW 부문 (주)해든브릿지
BreakOut v7.1

위는 2021년 12월 '신소프트웨어상품대상' 멀티미디어&서비스SW 부문에서 위와 같이 입상하였으므로 이에 상장을 수여합니다.

2022년 2월 28일

과학기술정보통신부장관 임 혜 숙

## Korea Good Software Certification(1st Class)

소프트웨어품질인증서
Certificate of Software Quality

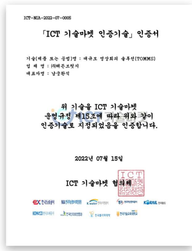
소프트웨어품질인증서
Certificate of Software Quality

기술역량 우수기업 인증서

(주)해든브릿지
가상공간배경 객체 기반
초 몰입도 Tele-Virtuality 기술

한국평가데이터(주) 대표이사

혁신제품 지정 인증서



「ICT 기술아멘 인증기술」 인증서

ICT 기술아멘 협의체

## Patents(Korea and overseas)

10 Korea

5 Overseas

## Global References

Government & Public services, enterprises, education, IT, Finance, Manufacturing, MICE, Broadcasting, Medical…

외교부 | KB국민은행 | 하나금융그룹 | 전북은행 | 강원도 GANGWON PROVINCE

# Powerful Immersive Telepresence

BYOD

Session breaking out

Document sharing

HD multimedia sharing

TV content sharing

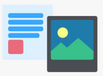
External device contents sharing

Immersive virtual reality

Polling, live Q&A

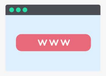
Screen / Application sharing

Supports multiple content sharing



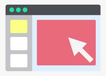
Documents/Images

Video




web·URL

PC Screen



PC App

White Board

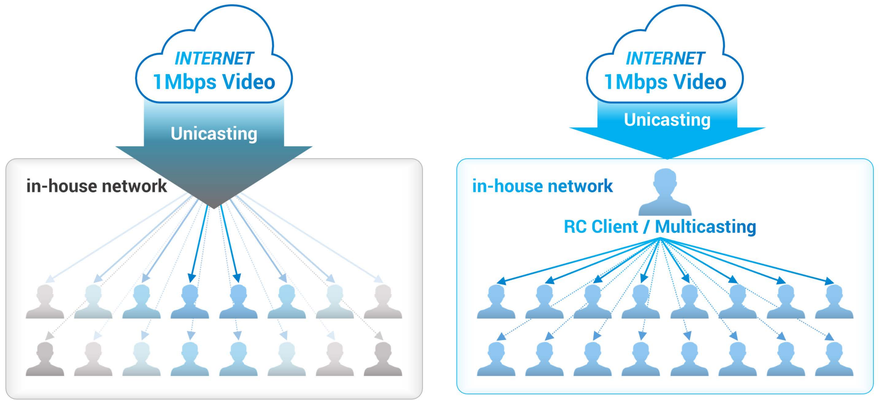
Screen Capture

- Tele-Virtuality Based on Virtual Space
- Dynamic Bandwidth Adjustment
- Multicast Tunneling Support
- Multi-device support
- Support for various participation/usage statistics
- Support for various layouts
- Eco-canceling support
- Recording Support
- Continuous maintenance support
- Problem bank support (optional)
- Dynamically adjust the placement of attendee images
- Dual screen support (video screen + content screen)
- Remote control of participants by administrator
- Private meetings Support
- Document pre-upload and query support (optional)

# Muiticast Tunneling

## Maximizing network efficiency by two-way IP multicast tunnelling

**Haeden Bridge's Two-Way IP Multicast Tunneling converts unicast stream to multicast stream. This cutting-edge technology minimizes the internal network load and reduces local network bandwidth dramatically.**




200 Mbps required
for 200 headquarters (or branch)

Service instability,
in-house network congestion

Requires 1 Mbps × RC user
for 200 headquarters (or branch)

Seamless service,
seamless in-house network

- Network bandwidth of WAN can be dramatically saved up to 200% when a mass connection is made under the same network.
- The RC client receives 1Mbps video from the BreakOut server and delivers it to other users on the same network, by multicast tunnelling.
- There will be no network congestion reducing the burden on the in-house network during large-scale meetings.

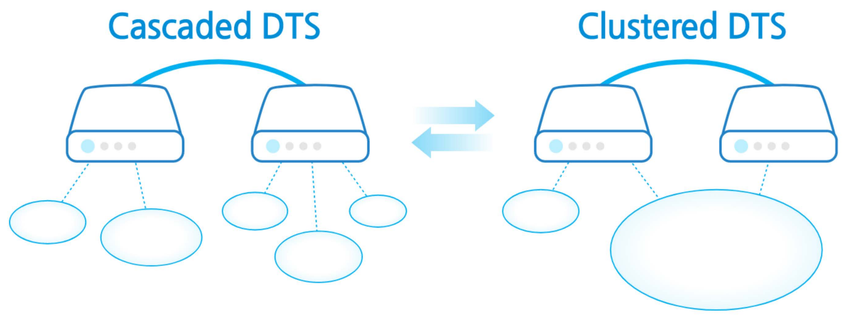
Use case of a scalable global conference

Ministry of Foreign Affairs of the Republic of Korea Government(Global meeting)
2020.11

# Data Distribution & Load Balancing

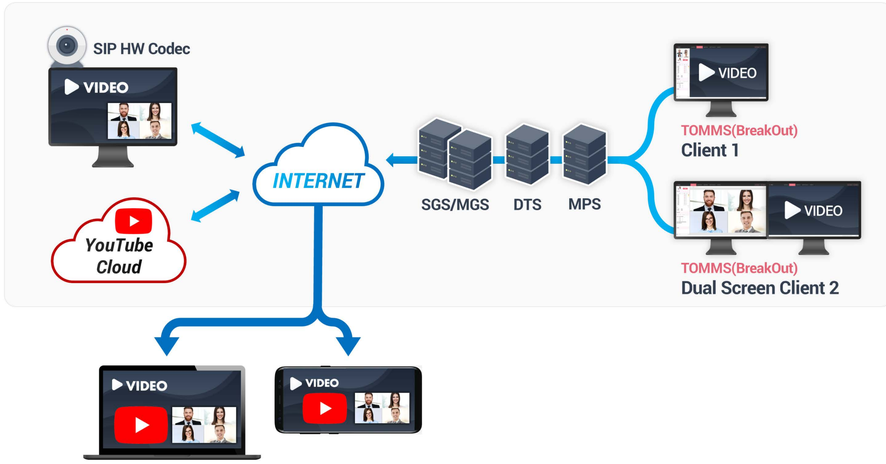
## Supporting scalable & economical video conference

**A unique server distribution technology brings scalability, high quality and credibility that can support a variety of missions of webinars, live event broadcasting, mass training and video conference.**




# Real-time Session Streaming

## SGS(Signal Gateway Server)/MGS(Media Gateway Server) for SIP



# Highly Immersive UX

**Haeden Bridge's televirtuality by vision Ai allows you to turn anywhere space into virtual reality. It enables immersive, real-time presentations without the use of special equipment such as green screens or 3D cameras.**

**With just a 2D camera of the device including PC, mobile and tablet, users can blur, remove and replace the background. The system also delivers various virtual stages designed for different missions. This is to protect user privacy and to help the user focus whilst they feel as if they are all in the same place.**

Single Background

Immersive Background Effect – Panel / Grid / Podium

## Document VR

Speaker–focused panel discussion

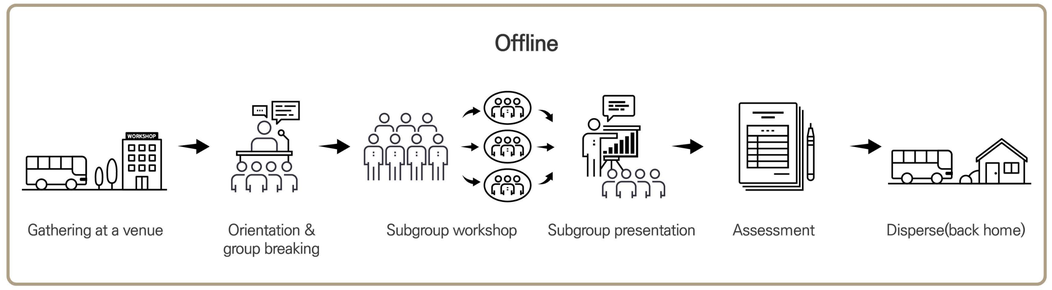
Content sharing mode

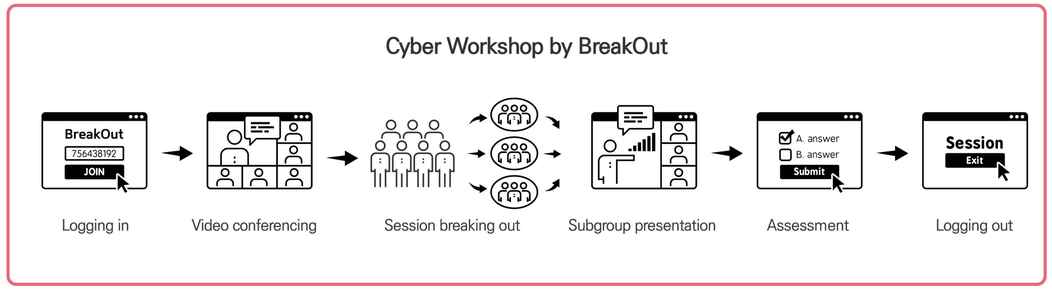
Weatherman–like virtual reality

- Turn anywhere into a virtual space instantly
- No green screen, no chroma-key and no special equipment
- Easy to control by mouse clicking
- Increase privacy and productivity
- Versatility for multipurpose

# Session breaking out

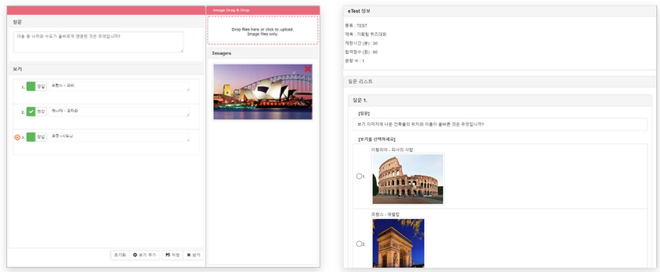
## Overcoming COST, TIME and INCONVENIENCE of offline workshop




# E-Test

**A real-time exam/survey/test can be carried out to assess and increase the learning effect.**



- Generating and registering questionnaire(Text & Image)
- Assessment
- Time setup
- Score setup
- Grading statistics
- LMS integration

# Highly efficient & productive online video collaboration service

## Maximum video 225 with up to 1,000 participants

- Voice-activated switching
- Diversely active & real-time video allocation & UI layout
- Supports BYOD

# 3D Spatial Sound

**With 3D spatial sound system embedded, you can deliver a highly immersive sound effect to virtual(online) audiences of live event broadcasting.**

Highly immersive Virtual Fan participants
Listening to high field sound (3D spatial sound)

# Other Features

| | Function | Details | |
|---|---|---|---|
| Key Features | Ability to reduce network bandwidth | Real-time bidirectional multicasting tunneling to minimize server-to-server network traffic (*patent)<br>Data transfer server distributed structure to minimize network traffic (*patent)<br>User-to-user download network reduction through user image mixing structure<br>Automate network bandwidth usage based on video conferencing user image size<br>Automate network bandwidth usage automatically when changing video conferencing and document conferencing modes<br>Ability to automate network bandwidth using user images based on the number of simultaneous user images | |
| | HD video support | 1280×720p HD and 1920×1080 Full HD high definition video support (using network low bandwidth) | |
| | Share content, such as videos, documents, etc | Video | Real-time sharing of videos such as WMV, MPEG4, AVI, MP3, WMA, etc |
| | | External device image | Dvd and real-time external devices, such as a microscope image sharing, projector. |
| | | Shareable documents | Any document that can be printed on Windows |
| | | Preview | Allow preview of shared documentation materials |
| | | File Transfer | Enables the transfer of documents/files to a large number of specific attendees |
| | | Annotation | Can be drawn on top of a document you are sharing |
| | | Automatically drawing tracking | Automatically track and show where drawing is going when drawing is applied to a document/image being shared |
| | Sharing documents and content | Name tag function | When a user draws, the user's ID is displayed |
| | | White Board | Free whiteboard for drawing |
| | | Poll | Allow the moderator to show participants and select an on-the-spot survey to view the survey results on-the-spot |
| | Sharing Web Pages | Web pages can be shared among attendees | |
| | Desktop Sharing | Full Screen Sharing | Share the screen on the moderator PC with the attendees |
| | | Annotation | Drawable on shared PC screen |
| | Application sharing | Application sharing | Share all applications (applications) floating on your PC |
| | | Annotation | Ability to draw and display pictures on top of programs you are sharing |
| | | Co-edited | Remote attendees control the program by handing over control |
| | Chat | Full/Specific Use Chat | Chat with all attendees or specific people |
| | Other convenience features | Web-based meeting management | Convenient management features such as setting meeting properties, managing reservations, organization/user management, and usage |
| | | View Mode | Different screen configurations are available depending on the attendees, allowing the moderator to synchronize the screens of all attendees with their own screen configurations |
| | | View Attendee Information | Viewing features such as attendees' IDs, devices, bandwidth, and video quality<br>The moderator can control the amike/speaker volume of the attendees |
| | Security | Conference password | Password can be set per room |
| | | Content Security | Encrypt all content in real time, including audio, video, and chat sharing |
| | Distributed server | Distributed server technology delivers massive scalability and reliability | |
| | Live Recording and Playback | Ability to record and stream meetings | |
| | Virtual Reality | The ability to extract only the speaker's shape using 2D and 3D Depth cameras, such as installing a separate blue screen, synthesize it with random content in real time, and create a presenter's image in virtual reality to communicate effectively and in a realistic virtual environment through two-way communication with other remote users | |

# References(Korea)

## Governments

외교부

NPS 화상회의시스템

KRX 한국거래소 KOREA EXCHANGE

h·well 국민건강보험

## Federal governments

강원도 GANGWON PROVINCE

울산광역시남구 ULSAN METROPOLITAN NAMGU

천안시 CHEONAN CITY

논산 화상회의 시스템

## Enterprises

kt

SK broadband

SAMSUNG SDS

posco

## Finances

KB국민은행

하나금융그룹

신한은행

전북은행

## Media, Broadcasting, Entertainment

HYBE WE BELIEVE IN MUSIC

SM ENTERTAINMENT

arirang

jtbc

## Overseas

# Patents

## Korea

| | Title | Registration | Validity | Country |
|---|---|---|---|---|
| 1 | Asymmetric interactive multicasting packet data communication system and its method | 10-0470042 | valid | Korea |
| 2 | Method for communication in groups using conversion between multicasting and unicasting style | 10-0586025 | valid | |
| 3 | System and method for communication in groups using a lot of Data Transferring Server | 10-0953507 | valid | |
| 4 | Method and system for transmitting and receiving digital video stream | 10-0953508 | valid | |
| 5 | Method for multicasting video conferencing | 10-0953509 | valid | |
| 6 | Group communication method in media server system with distributed structure | 10-1085063 | valid | |
| 7 | System for generating two way virtual reality (PCT) | 10-1577986 | valid | |
| 8 | Method and system for large scaled group communication (PCT) | 10-1628071 | valid | |
| 9 | MULTI USER VIDEO COMMUNICATION SYSTEM AND METHOD USING 3D DEPTH CAMERA (PCT) | 10-1784266 | valid | |
| 10 | Method of visual communication (PCT) | 10-1800979 | valid | |

## Overseas

| | Contry | Title | Registration | Validity |
|---|---|---|---|---|
| 1 | USA | GROUP COMMUNICATION SYSTEM USING MEDIA SERVER HAVING DISTRIBUTED STRUCTURE AND METHOD THEREOF | US 8,442,062 B2 | valid |
| 2 | JAPAN | 分散構造のメディアサーバを用いたグループ通信システム及びその方法 | 5026598 | valid |
| 3 | CHINA | 使用具有分布式结构的媒体服务器的组通信系统及其方法 | ZL 200780102371.9 | valid |
| 4 | USA | BI-DIRECTIONAL VIRTUAL REALITY SYSTEM | US 10,038,879 B2 | valid |
| 5 | USA | Method and system for providing large scale group communication | US 10,212,391 B2 | valid |

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