ITUEvents

ITU Workshop on the future of Television for Asia & Pacific

23 April 2021
Fully Virtual

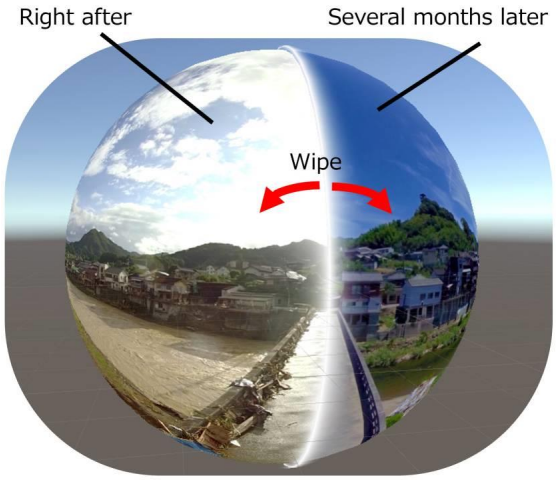
Other application of 360 camera

- Use of 360 camera for capturing images captured from high position without drone.
- Application is required to use drone in arbane area.

NHK STRL's R&D on AR/VR

NHK

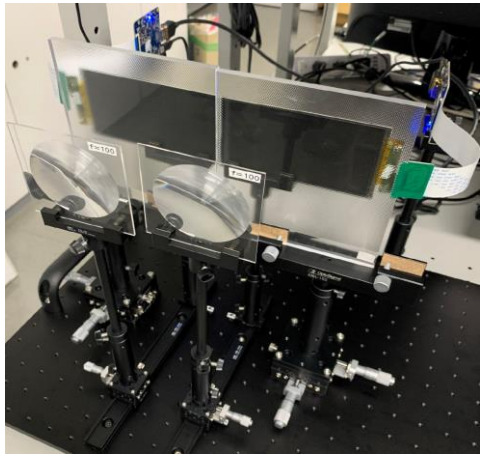
Before/After VR



8K display VR

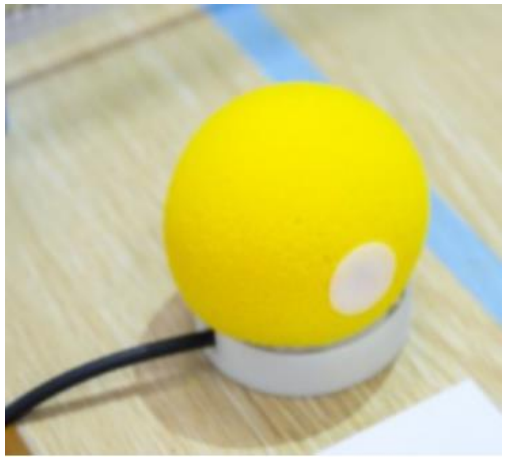
Extremely high-resolution VR

Light-field HMD



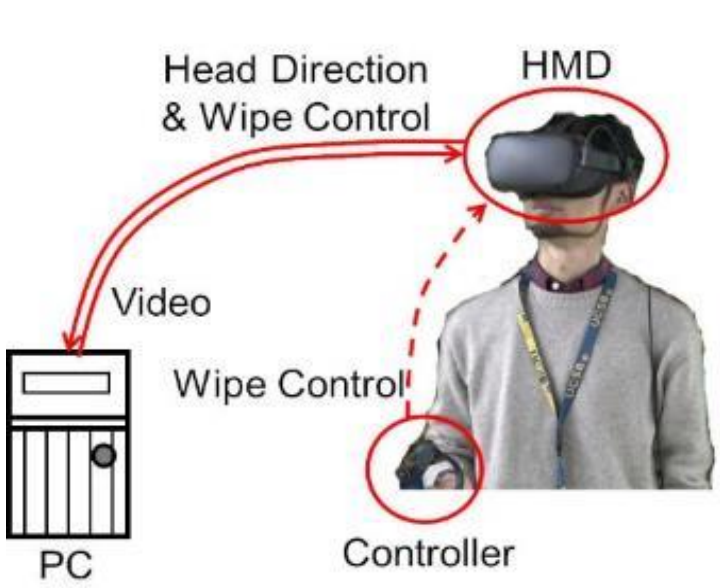
Space-sharing content viewing system

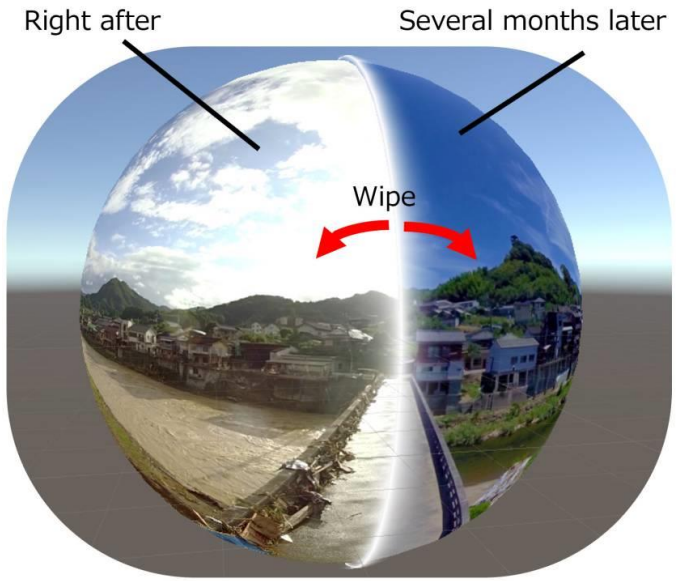
Ball-type haptic device



1) 360 VR image system for comparative views

- The system enables a user to compare two 360 images
  - captured at the same position at two different times
  - right after the disaster and several months later
- The system consists of a workstation, an HMD, and a controller
- Two images were mapped to the sphere





1) 360 VR image system for comparative views

2) VR images with extremely high resolution

NHK

- Current VR HMD does not have enough pixels.
- Considering the design of HD & 8K, 30K is required for 360 images.
- VR with extremely high-resolution images is expected to provide highly immersive experience with a sense of presence and reality.

2) VR images with extremely high resolution

- NHK set up a display system that present images of over-8K resolution to design the VR including specification for future design.

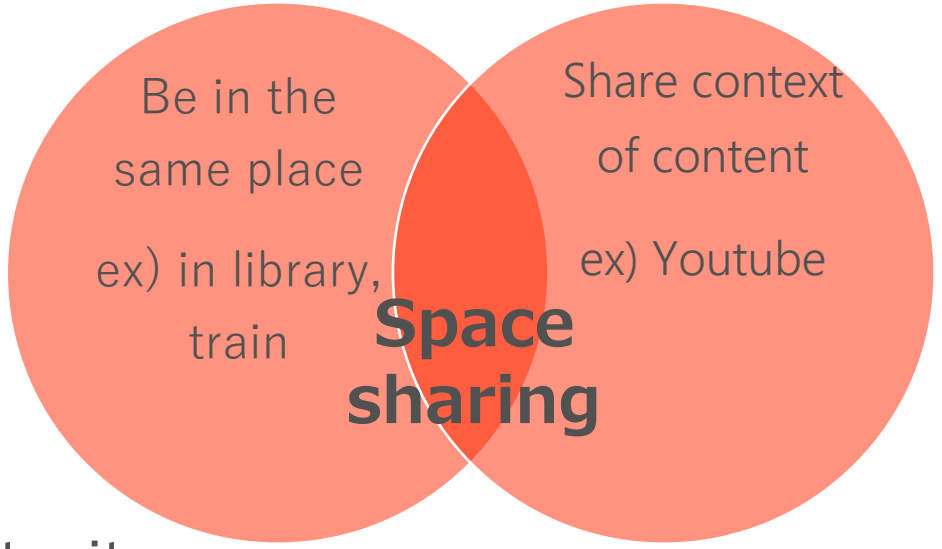
Space-sharing content viewing system

NHK

- Space sharing

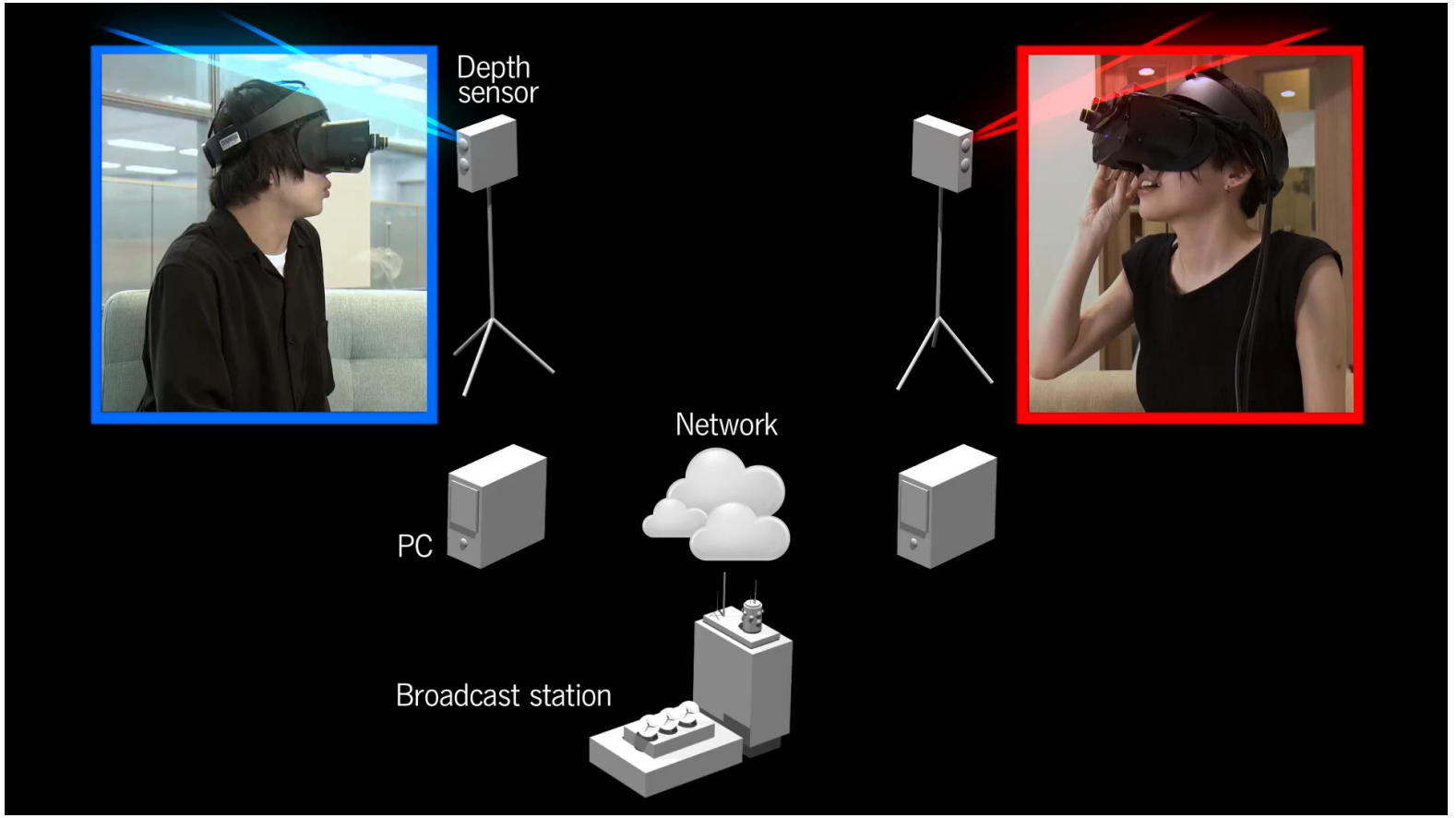
  ≡Be in the same space in real or virtual ∩ Share context of content

  - Be in the same place
    - Interest & emotions are transmitted
      from words, actions & facial expressions
    - High spatial expressiveness of AR / VR
  - Share context of content
    - Sense of belonging thru. common experience
    - Broadcastability & simultaneity give an opportunity



- Viewer can feel family or friend closer who is watching together
  - Ex) Sense of unity at living room, music live site, stadium etc.

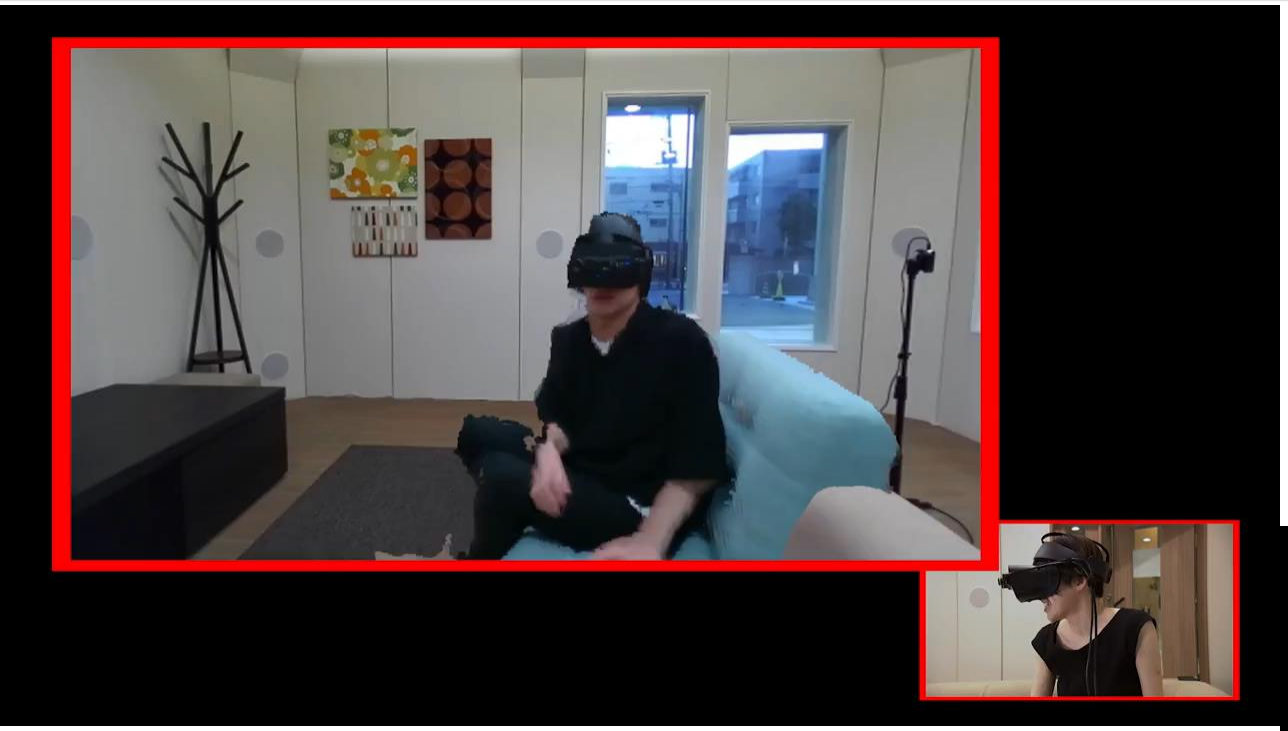
Space-sharing content viewing system



- A depth-sensor captures the depth images of the viewer.
- The depth images are transmitted to the other in real-time.
- The virtual images of person at distant place are reproduced according to HMD's position & direction.

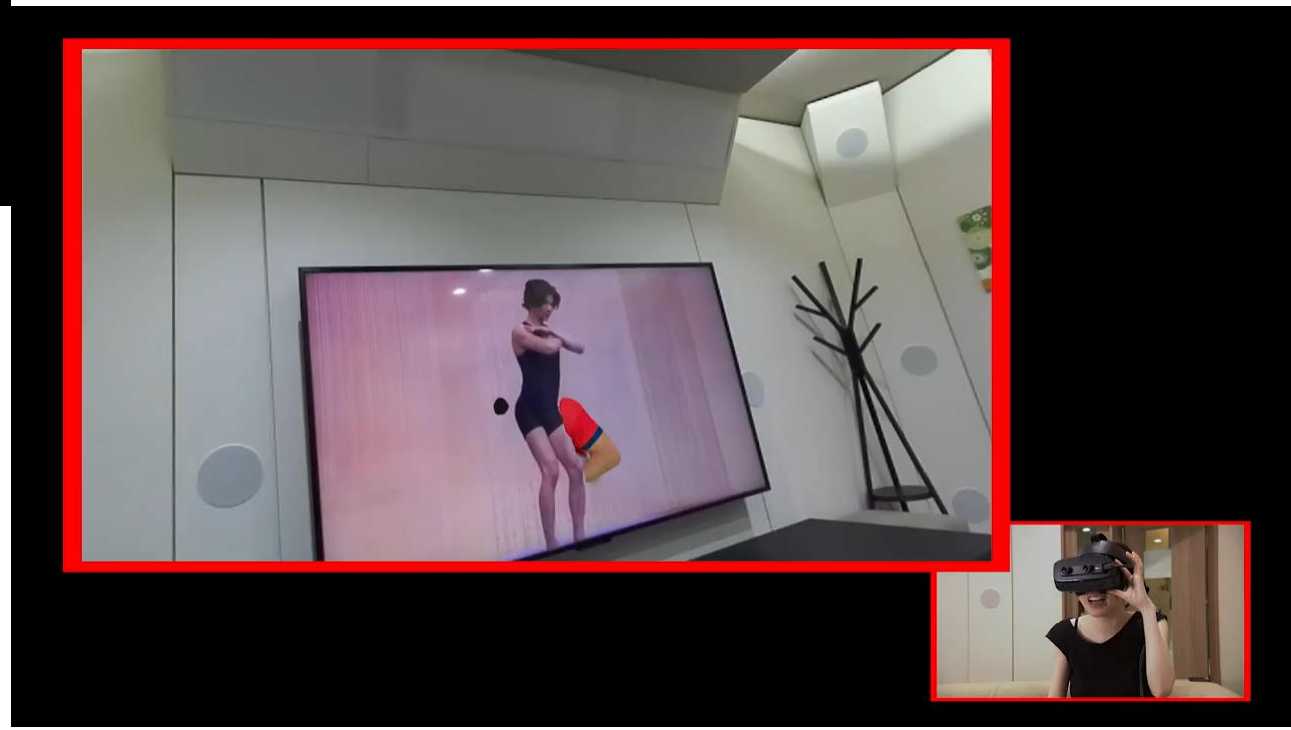
Space-sharing content viewing system

NHK



Sharing VR program

Sharing AR program



Application to TV production

- Performers can also share the experience by this system.
- Applied to produce a scene that family apart sing together.

Conclusion

- NHK & STRL's trial on AIAV systems are introduced.
- Before/After VR
  - An application to Journalism using VR technology.
  - Viewer can compare two 360 images captured at different time by interaction.
- High-resolution VR
  - For realization of highly immersive experience with a sense of presence and reality
- Space-sharing content viewing system
  - New viewing style that connect viewers by VR technology