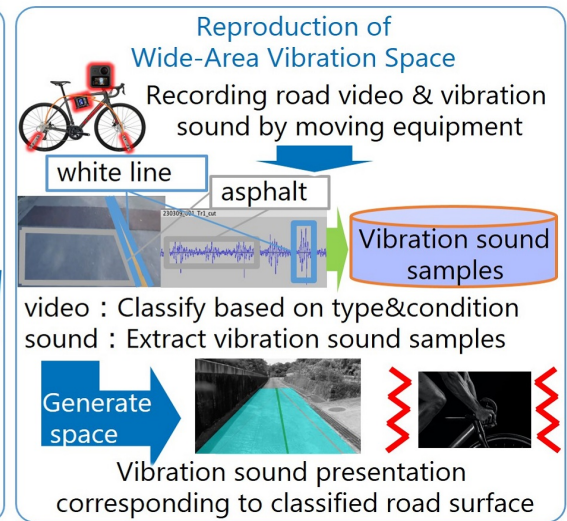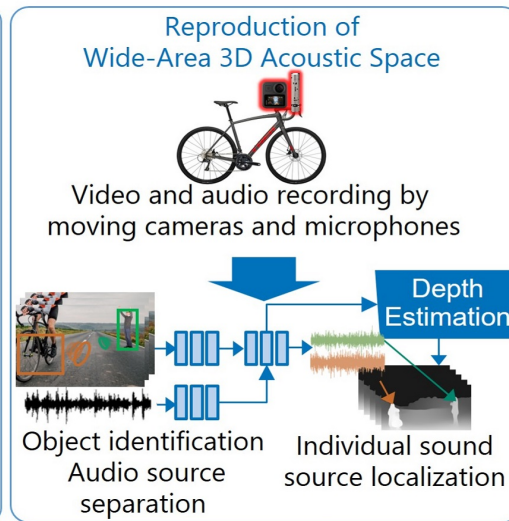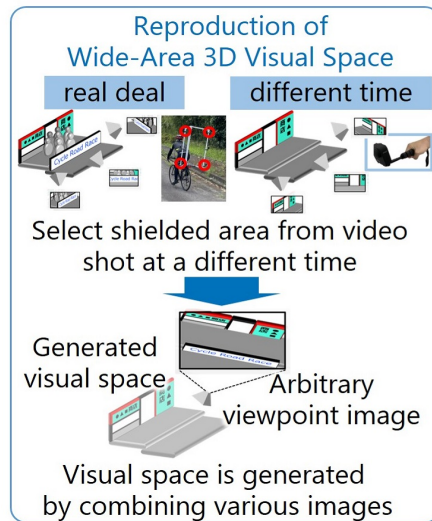## Background

Virtual sports and e-sports are becoming popular as new forms of sports that utilize digital technology, but they are far from replicating reality. Therefore, we are conducting research and development to create a virtual world that provides an experience equal to or better than the real world.

Summary

We have developed a media processing technology (video, audio, tactile) that creates an ultra-realistic metaverse called "XR sports space" that reproduces the space, temporal changes, and vibrations of a wide-area outdoor environment in a virtual world, reproducing the experience of the real world.

Reproduction of Wide-Area 3D Visual Space

real deal | different time

Select shielded area from video shot at a different time

Generated visual space

Arbitrary viewpoint image

Visual space is generated by combining various images

Reproduction of Wide-Area 3D Acoustic Space

Video and audio recording by moving cameras and microphones

Depth Estimation

Object identification Audio source separation

Individual sound source localization

Reproduction of Wide-Area Vibration Space

Recording road video & vibration sound by moving equipment

white line | asphalt

Vibration sound samples

video : Classify based on type&condition
sound : Extract vibration sound samples

Generate space

Vibration sound presentation corresponding to classified road surface

Features

- Technology that generates a 3D visual space from multiple videos and generates videos from arbitrary viewpoints by supplementing occluded areas with videos taken at different times
- Technology that reproduces Wide-Area 3D Acoustic Space through sound source separation based on object identification & individual sound source localization using depth estimation
- By generating samples based on images and vibration sounds while riding a bicycle, the vibration sensation according to the riding situation can be reproduced in the Metaverse

Future_benefits

The ultra-realistic metaverse space "XR Sports Space" enables remote competitions where users who are located far apart feel as if they are competing in the same place and time.

Exhibiting Company

NIPPON TELEGRAPH AND TELEPHONE CORPORATION

Contact

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