

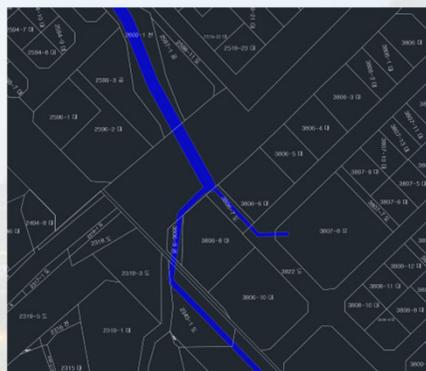


Collaboration, Innovation and Resilience: Championing a Digital Generation

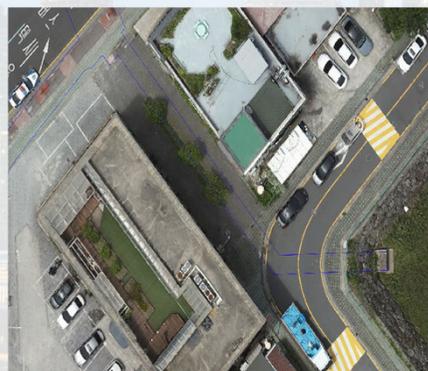
Brisbane, Australia 6-10 April

Research on the Utilization of Mixed Reality (MR) through the Characteristics of 3D Precise Location

Yunguk HAN



Two-dimensional Status Line



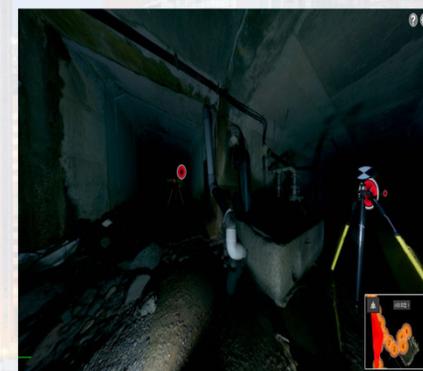
orthoimages



3D modeling



LIDAR DATA



360-degree picture



PLATINUM SPONSORS



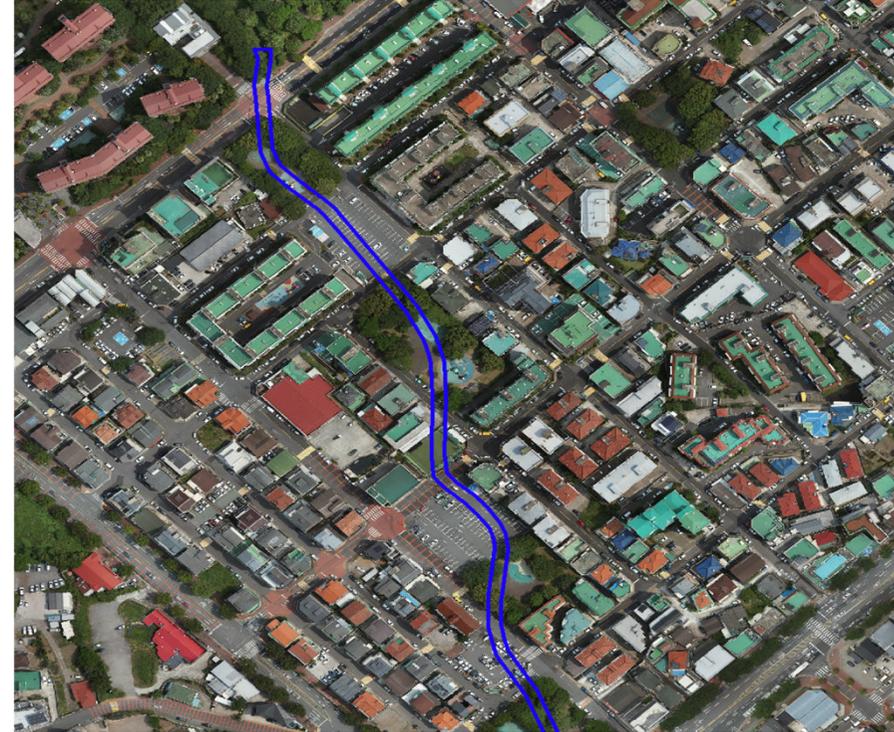
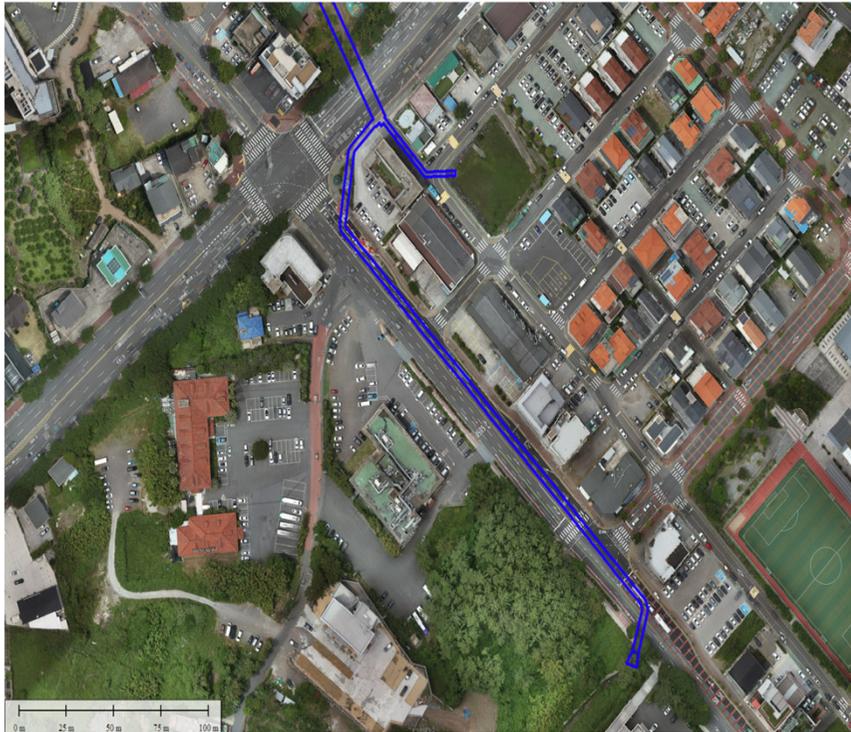
Research Background and Objectives

- ✓ **Mixed Reality, MR**
An environment where the virtual world is Integrated with the real world, allowing interaction between them.
- ✓ **Construction of 3D point cloud data by combining reference points, drones, and point clouds**
- ✓ **The objective is to innovate surveying technology and maximize the efficiency of operations**



It aims for the innovation of surveying, evolving from 2D measurement to multifunctional cadastral surveying

Spatial Scope



The study area was selected as the underground and aboveground sections of the covered Ihocheon stream in Jeju-si, Jeju Island.

Necessity (Drone Footage Data)



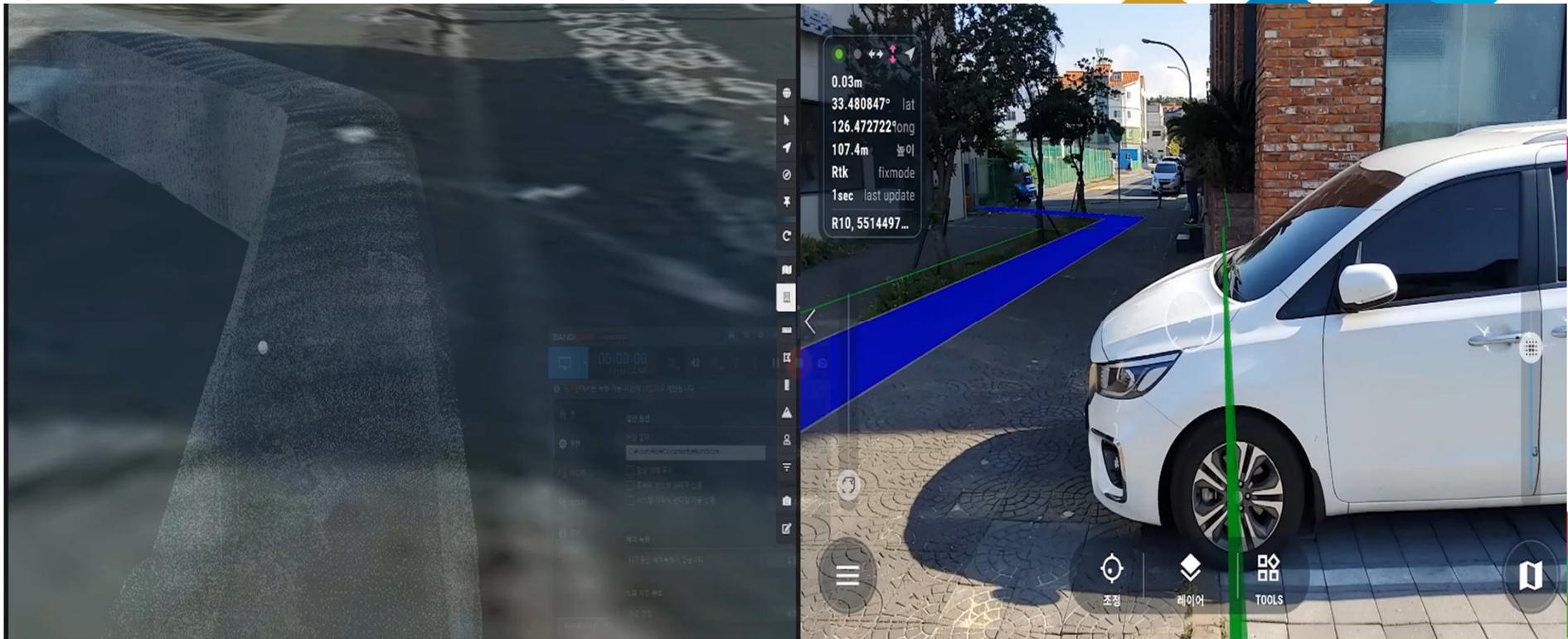
Site conditions that are difficult to verify in 2D drawings can be accurately observed in 3D imagery

Research Results



Overlaying the 3D drone data of the covered section with the current state of the stormwater pipeline for modeling

Using HoloLens to Check Underground Facility Conditions from the Ground



Checking the location status of underground structures using HoloLens from the ground

Utilization Plan (Boundary Marker Installation Using HoloLens)



HoloLens enables quick installation of boundary markers during the installation process

The most relevant SDGs related to the presentation and theme of this session

1st relevant SDG

8 DECENT WORK AND ECONOMIC GROWTH



2nd relevant SDG

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



3rd relevant SDG

11 SUSTAINABLE CITIES AND COMMUNITIES



SUSTAINABLE DEVELOPMENT GOALS

International Federation of Surveyors supports the Sustainable Development Goals