

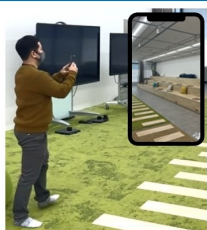
Background

VPS is a technology for estimating the 3D position/orientation from photo in real time. There is a pre-process that generates the keypoints space and a real-time localization process. The conventional pre-process had the problems of high measurement costs and easy distortion of the keypoints space.

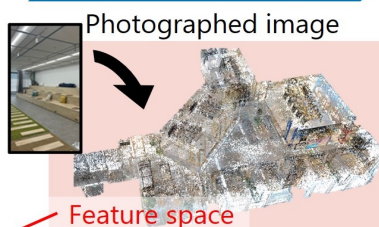
Summary

We established a new technology for generating an ultra-precise keypoints space by associating image feature with ultra-precise 3D point clouds measured by LiDAR. This technology can improve the accuracy of real-time localization, and can also significantly reduce pre-process measurement costs.

1. User takes a
Picture of surroundings



2. Match the picture
with the feature space



3. Estimate position
and posture



Ex.1: XR Communication

Drawing avatars in the correct position



Virtual World/VR

Real World/AR

Ex.2: Autonomous driving

Providing current position/posture



	Feature space measurement cost	Estimation accuracy of Position/posture
Conventional	Requires a lot of images	Low accuracy
Proposed	Requires fewer images and point clouds	High accuracy

Features

- The world's first active keypoints space generation technology that associates ultra-precise 3D point clouds measured by LiDAR with image feature values
- Prevents erroneous correspondence between point cloud and image features by removing hidden points and generating a composite photo that looks exactly like the photo

Future_benefits

You can build a highly accurate VPS at a lower cost. By localization with high accuracy, it contributes to the realization of advanced services such as XR and autonomous car.

Exhibiting Company

NIPPON TELEGRAPH AND TELEPHONE CORPORATION

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