**Earthquake disaster investigation using a Compact MMS**

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***ABSTRACT***

On January 1, 2024, the Noto Peninsula in Ishikawa Prefecture, Japan, was struck by a magnitude 7.6 earthquake known as "The 2024 Noto Peninsula Earthquake." This earthquake was one of the largest inland, direct-hit earthquakes and caused extensive damage.　　 Immediately after the disaster, aerial photogrammetry and LiDAR surveys were conducted to assess the damage. The data obtained revealed widespread earthquake damage, including landslides, road damage, and collapsed houses. However, it was difficult to aquire detailed damage, such as road level differences and house tilting, from the air. Therefore, in this case, to further understand the damage in detail, we used a portable, easy-to-install vehicle-mounted laser measurement system (Mobile Mapping System: MMS N-QUICK), capable of flexible use in urban and mountainous areas to obtain high-density 3D data from the ground. As a result, the data acquired allowed us to quickly confirm detailed ground damage, such as road conditions and building damage, which were difficult to identify through aerial surveys. This achievement supplements the aerial survey results, enabling a comprehensive understanding of the damage situation and proving to be highly useful in restoration and recovery efforts.

**Keywords:** Mobile Mapping System, LiDAR, 3D point cloud, Earthquake disaster