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## THE *RAILMAPPER* – A DEDICATED MOBILE LIDAR MAPPING SYSTEM FOR RAILWAY NETWORKS

J. Kremer and A. Grimm  
IGI mbH, Langenauer Straße 46, 57223 Kreuztal, Germany

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**Abstract.** The Mobile LiDAR Mapping System *StreetMapper* from IGI and 3D Laser Mapping (Bingham Nottingham, UK) is mounted on a large variety of road vehicles to cover different mission specifications. In addition to the operation on the road, the system finds its applications on other kinds of vehicles, like boats or trains. The modular and flexible system concept even allows utilizing the same LiDAR Mapping system for Mobile Mapping on the ground and for airborne missions on helicopters, respectively.

Besides this general flexibility, each application has its own special requirements. Special hardware and software components are needed to complete the core components, like the laser scanner and the GNSS/IMU systems, to build a dedicated system for the chosen task.

Compared to the typical dynamics of a road vehicle mounted Mobile Mapping system, a dedicated rail mapping system operates under conditions that are much more challenging for a high accuracy GNSS/IMU trajectory determination. Furthermore, the typical rail mapping tasks, like the exact measurement of the rail track geometry, require the operation of the most accurate laser scanners and of specialized post-processing software.

In this paper, the *RailMapper*, a specialized Mobile Mapping system for railway surveys is presented. The system is described with focus on the railway specific requirements and results of practical surveys are given.

[Conference Paper](#) (PDF, 1321 KB)

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