Preface: Workshop "Robotics for Mapping – SLAM approaches for mobile mapping and robot intelligence"

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The availability of accurate geospatial information and reliable ubiquitous localization systems are key factors in a number of applications and contexts, ranging from location-based services and smart cities, to the use of terrestrial, underground, aerial and underwater autonomous robots, autonomous driving, and positioning in GNSS-denied environments, just to mention a few. The recent development of effective artificial intelligence tools also plays a core role in these applications, in order to enable an effective machine interpretation and understanding of geospatial data.

The previously mentioned applications are usually related to the use of mobile platforms working in real time: these requirements imply the use of effective mobile mapping systems. Furthermore, the need for ubiquitous accurate localization goes beyond the possibilities of stand-alone GNSS positioning. In this context, simultaneous mapping and localization (SLAM) techniques have proved to be effective solutions in order to properly compensate for the unreliability of GNSS in certain working conditions, while preserving the possibility of fast accurate mapping.

Motivated by the above considerations, this workshop will seek contributions covering advanced topics related to the state of the art and future trends of SLAM approaches for mobile mapping and robot intelligence, focusing both on the mapping and localization problems, and on the artificial intelligence tools needed in order to enable mobile perception and real time machine understanding of geospatial data.

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Responsible Technical Commissions/ involved Working Groups:
ISPRS ICWG I/IV