

OGC Calls for Participation in Indoor Mapping and Navigation Pilot



The Open Geospatial Consortium (OGC) has released a Call for Participation to solicit proposals for the OGC Indoor Mapping and Navigation Pilot initiative. The Indoor Mapping and Navigation Pilot, sponsored by the [Public Safety Communications Research Division](#) of the National Institute of Standards and Technology (NIST), will create and advance solutions to complex geospatial challenges related to indoor mapping and navigation for first responders.

First responders typically survey high-risk facilities in their jurisdiction at least once per year as part of a preplanning process. Outputs from preplanning are often in report form, and first responders may annotate available floor plans (e.g. from computer-aided design models) or generate their own hand-drawn maps during the process. Preplanning is time-

consuming, inefficient, and inherently complex, considering the information and level of detail that should or could be captured, the lack of automation, and difficulty identifying notable changes to facilities and infrastructure during successive preplanning surveys.

Mobile 3D Lidar

The NIST Communications Technology Laboratory (CTL), Public Safety Communications Research (PSCR) Division has identified mobile 3D light detection and ranging (Lidar) as a potentially transformational technology for first responders. Using Lidar and 360-degree camera imagery coupled with advanced software processing, first responders could very efficiently capture 3D point clouds and a wealth of other information, both observed and derived, while walking through buildings as part of their routine preplanning operations.

The use of 3D Lidar and imagery has many potential upsides beyond just creating point clouds for visualisation and mapping, e.g., use in localisation, object classification, integration with virtual/augmented reality solutions, change detection, etc. Though not widely used currently for surveying, especially outside the architectural, engineering, and construction (AEC) community, it is expected that investments by the automotive and unmanned aerial systems industries will drive the costs of 3D Lidar down dramatically over the next five years so that it will become a cost-effective tool for public safety, building owners/managers, and various service industries.

Open GIS frameworks and data models

The Pilot will call upon a diverse array of leading organisations in the field and leverage standardised, open GIS frameworks, data models, and data exchange formats (e.g. CityGML, IndoorGML, Web Processing Service, Web Feature Service, etc.) to stimulate the rapid generation of prototypes and demonstrations that address the key activities described below. In addition, best practices and lessons learned from the pilot shall be captured in engineering reports or other means and, where appropriate, forwarded to the appropriate standards committees under the Open Geospatial Consortium (OGC) and International Standards Organization (ISO) for consideration.

While the focus is on developing the capabilities and workflow required for preplanning operations, the intent is that future OGC initiatives will address the real-time, event-driven aspects of indoor mapping and navigation for first responders.

More information on the Pilot, including the requirements for participation, and how to submit any questions, is available in the [Indoor Mapping and Navigation Pilot Call for Participation \(CFP\)](#). Participation is open only to OGC Members. However, proposals from non-members will be considered provided that a completed application for OGC membership (or a letter of intent to become a member) is submitted prior to (or with) the proposal.