RSC
REMOTE SENSING CENTER
### at the Naval Postgraduate School

LIDAR

Panoramic Augmented Reality for Persistent Information in Counterinsurgency Using LiDAR

DESCRIPTION: The focus of this research and prototype system development is to integrate spatially related data into a synthetic view of the outside environment for use by vehicle commanders, via a visually augmented, spherical video, indirect vision system.

Former IED locations, street names, building and inhabitant information as well as intelligence data will be fused with the video displays of the indirect vision systems of next-generation combat and patrol vehicles such as BAE's Bradley. This permits terrain-associated knowledge to persist in-place on the battlefield.

OBJECTIVE: To prevent IED attacks by providing combat vehicle crews with crucial information for situational understanding of complex urban environments. Crucial information unobtrusively displayed at the right moment and at the right place, will allow a vehicle commander and crew to better understand their operational environment, and be more fully aware of threats that may be present, ultimately improving IED detection and avoidance.
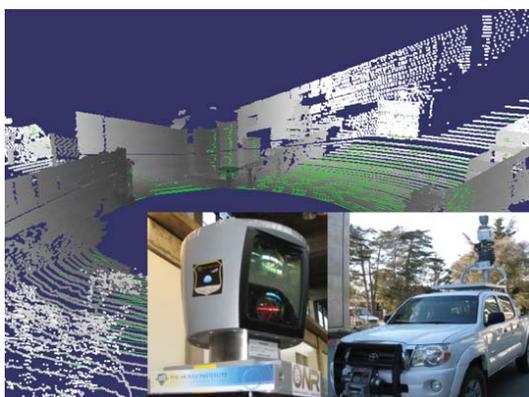
KEY DELIVERABLES:
- Technology for integration of range data and visible panoramic video, for rendering of geo-registered 3D information.
- User input methods for in-the-field annotation and display manipulation.
- A prototype system for demonstration, user studies and as baseline for transition, contracting, and building.

MILESTONES TO FIELDING CAPABILITY:
1. Sep 2009: developed core technology and a research prototype.
2. Mar 2010: completed application-driven user studies, refinement.
3. Sep 2010: transitioned to operational, field-testable prototype, development transitioned to companies.
4. Completed field testing and end-user studies, system ready for deployment.

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