R&D ROADMAPPING

PSCR

PUBLIC SAFETY COMMUNICATIONS RESEARCH PROGRAM

📷 PROJECT SNAPSHOT

📖 BACKGROUND

The Public Safety community is in a period of great technological transition. As their communications technology migrates from disparate Land Mobile Radio (LMR) networks to the Nationwide Public Safety Broadband Network (NPSBN), first responders will be presented with opportunities and challenges to adapt to the emerging technologies in this new environment. The Public Safety Communications Research (PSCR) program is leading a coordinated, multidisciplinary research effort to forecast the evolution of emerging technology sectors, identify how this transition will likely impact public safety operations, and recommend technology areas where federal research & development (R&D) organizations supporting the public safety community can invest their resources to make our nation's responders safer and more effective.
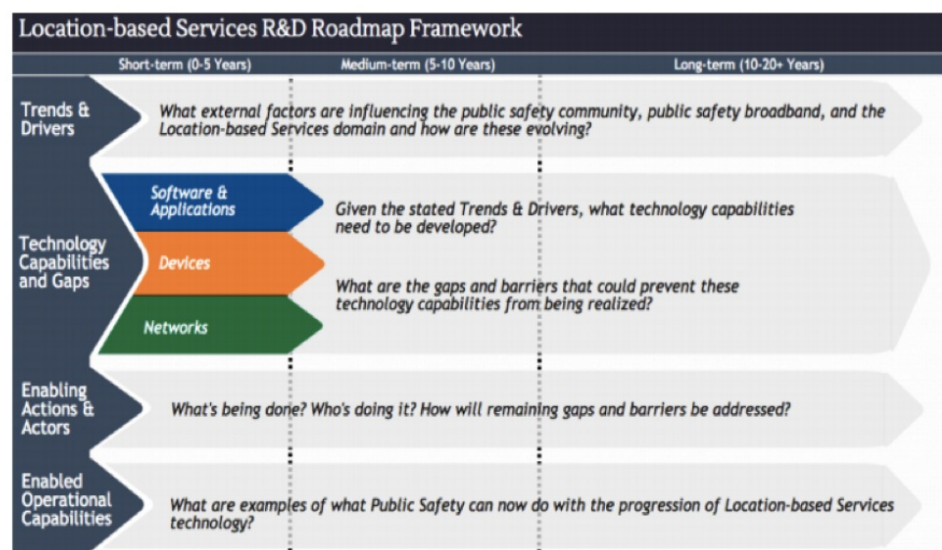
PSCR is developing multiple technology roadmaps that present the highest-priority technological trends, capabilities, gaps, and R&D opportunities facing public safety over the next 20 years. Each PSCR roadmap focuses on a specific emerging technology sector that has the potential to greatly increase the response capabilities of public safety once it migrates to the NPSBN. For each technology area, PSCR commissioned a diverse stakeholder working group made up of technology experts and end users from industry, academia, public safety, and all levels of government to identify the challenges and opportunities associated with introducing these new technologies into public safety operational environments. Thus far, PSCR published a Location-Based Services R&D Roadmap Report, built upon the recommendations put forth in this document at the October 2015 Location-Based Services Summit, and commenced a second stakeholder working group focused on public safety's enhanced use of Data Analytics. These parallel efforts will prioritize the technological needs of public safety and outline actionable steps that the community can pursue to better integrate emerging technologies like Location-Based Services and Analytics in mission critical operations.

⚙️ AN INNOVATIVE APPROACH

PSCR developed a roadmap framework that is repeatable, scalable, and focuses on translational R&D priorities. This framework ensures the comparability of gaps and R&D opportunities identified in disparate technology sectors, and traces the logic behind developing priorities. By validating the findings of each roadmap with a broader stakeholder base through investment criteria and R&D summits, PSCR created a process that distills the input of a large working group into a concise set of R&D focus areas that need closest attention.

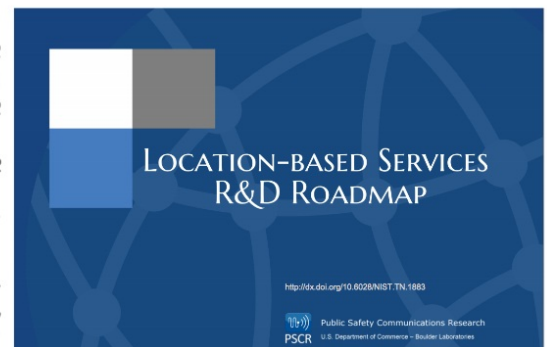Location-based Services R&D Roadmap Framework

PSCR used the following innovative approach:

- Established two working groups representing over 120 stakeholders to provide input on what technology challenges are most important for public safety to address in the short-, medium-, and long-term

- Designed a collaborative Wiki platform for each roadmap working group that allows stakeholders to provide input, exchange information, and upload documents

- Defined an R&D assessment criteria in close collaboration with FirstNet and the PSAC through which to evaluate potential investment opportunities

- Visualized the evolution of the Location-Based Services technology sector between today and 2040

- Identified a preliminary list of R&D Investment Opportunities for Location-Based Services and Data Analytics

- Developed problem statements that describe the current state, future state, enablers, and potential barriers or disruptors of the six highest-priority challenges inhibiting public safety's enhanced use of Location-Based Services

- Published its first technology roadmap and facilitated the subsequent R&D Summit

- Developed a scalable roadmap framework that can be easily reused or updated to reflect changing technology environments

RESULTS

PSCR published the Location-Based Services Roadmap Report in May 2015 and has since begun drafting a second technology roadmap based on Data Analytics. These reports describe R&D investment areas related to software, network, and device technology that stakeholders view as within PSCR's realm of expertise and would deliver the greatest benefit to public safety. These reports fully document the logic and data behind the identified R&D opportunities, and serve as the basis for future R&D summits.

LOCATION-BASED SERVICES
R&D ROADMAP

http://dx.doi.org/10.6028/NIST.TN.1883

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VALUE TO PUBLIC SAFETY

PSCR's technology roadmaps are an invaluable resource in navigating public safety's transition between LMR and broadband communications. PSCR:

- Assists the public safety community in understanding the risks and rewards associated with emerging technologies

- Interfaces between commercial technology providers, academic researchers, and public safety end users to help define the requirements, projected capabilities, and resource demands of deploying new technologies

- Identifies the trends, enabling actors, and potential partners associated with potential R&D opportunities

- Ensures that federal R&D funds supporting public safety are spent in the most responsible, effective manner possible