

# New report outlines key features of next-generation public safety communications

February 1 2012, By Jennifer Huergo

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Creation of a next-generation public safety communications network requires leadership from a single non-profit organization devoted to this purpose, according to a report released today by a federal advisory committee. Such a network would support voice, video and data transmissions, and ideally be at the disposal of all first responders—the medical, emergency, law enforcement or military personnel who are first on the scene of events that threaten public safety.

The report was released by the Visiting Committee on Advanced Technology (VCAT), which reviews and makes policy recommendations to the National Institute of Standards and Technology (NIST). NIST is engaged in the research supporting [public safety](#) communications and operates a testbed at its Boulder, Colo., campus. The committee held meetings and collected input from the communications and public safety communities, as well as the public.

"Public safety service is among the most important functions that government provides," says Vint Cerf, chair of the VCAT and vice president and chief Internet evangelist for Google. "In the 21st century, we have an opportunity to re-invent public safety communications, taking advantage of smart devices that use digital and packet-based communication technologies. This report is aimed at improving communication options available to [first responders](#)."

Public safety communications reach across many geographical, jurisdictional and technological lines, involving federal, state and local

agencies, as well as private organizations and even volunteers. All have different procedures, budgets and existing technologies that would need to be coordinated to create a communications solution for the entire country.

To meet this challenge, the committee recommends that a non-governmental, non-profit organization be charged with development of standards that would support creation of the network.

As a model, the report describes the Smart Grid Interoperability Panel, which includes representatives from a large number of sectors with an interest in the next-generation power grid. According to the report, "that panel has been an effective mechanism for serious work on the elaboration of standards and requirements and identification of useful specifications for Smart Grid devices."

The committee envisions an organization that can establish "frameworks for cooperation that can build on common planning, standards, technology, budgeting and practices."

The report concludes that a public safety [communications network](#) should:

- incorporate commercial technology where appropriate;
- extend commercial technology to achieve robustness;
- provide for backward compatibility or interoperability through standards adoption and/or development where feasible, including interoperation with existing and new 911 systems;
- give high priority to cost-effectiveness, ease of use and affordability;
- take advantage of Internet and other packet-based technologies to support multi-media communication and mobile ad hoc network formation;
- incorporate assigned public safety spectrum and other data

communication spectrum assignments and include opportunity for sharing where feasible;

- incorporate strong, federated authentication and other security technology to positively identify and authorize personnel and equipment permitted in the system;
- incorporate advanced position location capabilities, including indoor and underground location, and;
- make extensive use of open national or international standards and, where appropriate, open source software.

And significantly, the network must be able to adapt to new technologies as they are developed.

The report's authors hope "that its release will spawn further focused discussion and action to improve support for public safety response in the United States and elsewhere."

The report is available at: [www.nist.gov/director/vcat/upl ...  
f\\_a\\_National\\_PSN.pdf](http://www.nist.gov/director/vcat/upl...f_a_National_PSN.pdf)

Provided by National Institute of Standards and Technology

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