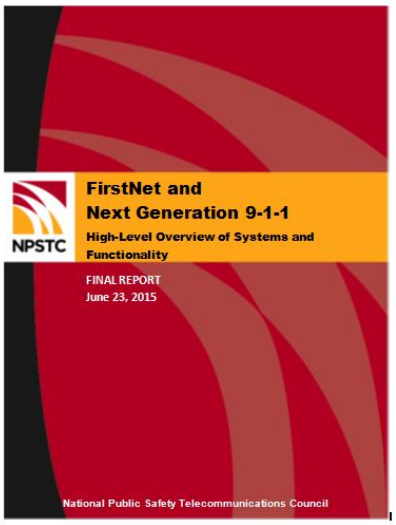
FirstNet and NG9-1-1: High-Level Overview of Systems and Functionality

August 2015

The National Public Safety Telecommunications Council (NPSTC) has developed an overview document to report on the similarities and differences, and interconnectivity between the Nationwide Public Safety Broadband Network (FirstNet) and Next Generation 9-1-1 networks (NG9-1-1).

NG9-1-1 and FirstNet Are Natural Partners

NG9-1-1 is a new network designed to connect 9-1-1 systems. FirstNet will be a wireless broadband network that will connect first responders. This is a natural partnership. Both NG9-1-1 and FirstNet share the same goal of improving communications during emergencies through a nationwide IP-based architecture. Together NG9-1-1 and FirstNet will enable users to access broadband technologies and applications. NG9-1-1 will improve safety by allowing the public to PSAP connection to share relevant data--voice, text, data, photo, or video. When this capability is combined with the ability to share this information with first responders in the field via FirstNet or other broadband system, the impact on public safety will be greatly enhanced.



In general, Public Safety Answering Points (PSAPs) will receive incoming calls for help via text message, voice call, or other messaging format which may include attached data such as pictures or video. Data calls to the PSAP may also be generated from machines and sensor systems including automatic crash notification (ACN), break-in alarms, and body health monitors. This data must be accepted and processed by the PSAP. In some cases, all of the data received will be transmitted to the first responder without any review or analysis. This may include one or more pictures of a vehicle crash or house fire, and ACN data burst, or a picture of a robbery suspect.

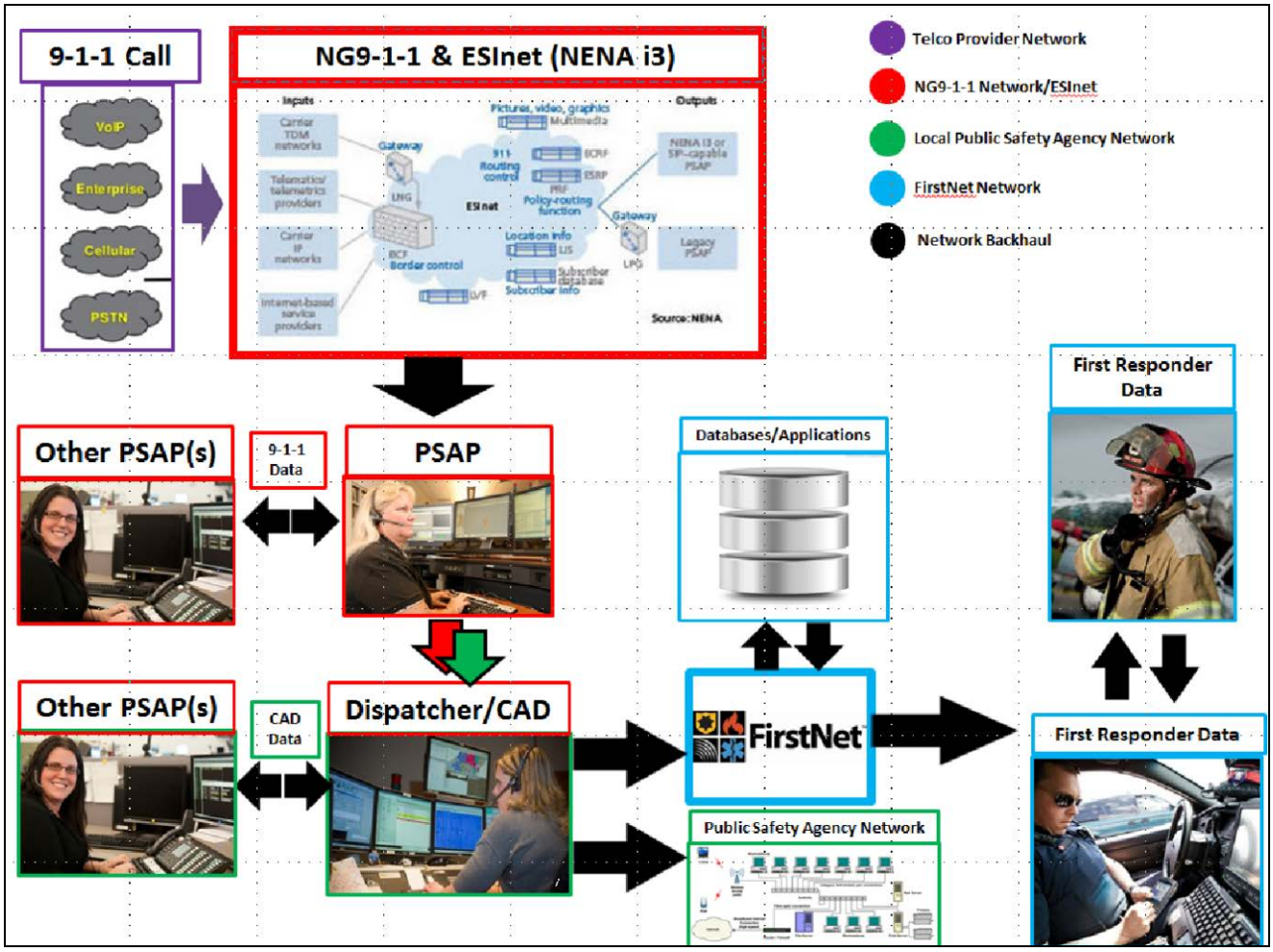
In other cases, the data may be reviewed/edited/repackaged by the PSAP before being transmitted to first responders. This may require the Public Safety Telecommunicator to identify the single best picture of the incident (from all that are received) and only transmit that image to the first responder. Data information is transmitted to the first responders via the FirstNet broadband network. This may include Computer Assisted Dispatch (CAD) dispatch messages, NG9-1-1 data, and other files and documents.

When the NG9-1-1 PSAP is FirstNet Capable

In the case of a NG9-1-1 enabled PSAP which is also FirstNet capable, the FirstNet system would be used to relay the appropriate data, which may include text, pictures, and video, to the responding units. FirstNet also enables the use of various applications (apps) to assist both the PSAP and the responder in sharing data. In this way NG9-1-1 and FirstNet systems are highly complementary and both are required to ensure a seamless flow of information from the public, to the PSAP, to the responders. Additionally, the use of both systems ensures multi-media capabilities throughout the entire call process.

Draft Flowchart Showing Connection between the Various Networks

This diagram shows one example of an implementation. FirstNet wired network connections may also provide for interoperability between different PSAPs and public safety agencies in addition to their wireless broadband network.



Once the PSAP has received and processed the initial call, they will continue to obtain additional information that will be useful to the first responders. By design, both the NG9-1-1 and FirstNet networks have security, interoperability, and connectivity requirements that can be met by a combination of means. Standards work is ongoing to ensure that these separate networks can communicate with each other. This includes IMS-based [IP Multimedia System] networks, such as those upon which FirstNet is based, and NG9-1-1 networks.

The complete report, *FirstNet and Next Generation 9-1-1: High-Level Overview of Systems and Functionality* is available on NPSTC's website at www.npstc.org.

http://npstc.org/miniurl/June2015FirstNetNG911FinalReport

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