



The Internet of Things and 911-Connected Devices: Advanced Technologies Enhance Public Safety

The Internet of Things (IoT) continues its momentum in 2016, with the technology now encompassing 911-connected alarm devices operating in next-generation 911 (NG9-1-1) emergency networks, known as Emergency Services IP Networks (ESInets). 911-connected alarm devices increase the timeliness and accuracy of 911 calls to emergency dispatchers, and reduce the response time of emergency responders arriving at the scene of emergencies.¹

For over five years, the industry has observed the evolution of 911-connected devices, prompted by U.S. Congress and the Federal Communications Commission (FCC).² NG911-capable public safety answering points (PSAPs) will receive the incoming alarm-generated data from automatic collision notification systems in vehicles (i.e. telematics), sensor-embedded alarms (smoke, heat, and CO alarms), and medical alert devices (personal heart monitors).^{3,4} Further, standards developed by the *National Emergency Number Association* (NENA) involve the additional data (video, smoke, heat, water, etc.) from sensor-embedded alarms being routed directly to PSAPs.⁵

Sources.

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6. <http://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.1191.pdf>
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We envision NG9-1-1 going beyond multimedia feeds and eventually providing a unified interface for data from other sensors, such as smoke, gases, and other events.

Research Roadmap for Smart Fire Fighting.

Smart Fire Fighting and 911-Connected Smoke and CO Alarms

A recent report released by the National Institute for Standards and Technology (NIST), and the National Fire Protection Research Foundation, entitled *Research Roadmap for Smart Fire Fighting*, recognizes the importance of 9-1-1 connected devices as having a key role in the future of firefighting.⁶

The report discusses the role of such devices as part of a unified public safety network of wireless connected sensors embedded in devices, buildings, and in firefighting apparatus and equipment worn by firefighters. The report acknowledges that “This innovative arrangement creates time efficiencies because the alarm is transmitted straight to the fire, rescue, and emergency medical services (EMS) [911] dispatcher. This direct PSAP transmission, which eliminates the third-party, saves one to three minutes, a crucial amount of time in an emergency.”

The report also addresses the concerns of false alarms from such devices, indicating that an alarm time delay feature be included to allow verification of the emergency event before the data signal is transmitted to the 911 dispatch center.

Further research by NIST recognizes the advantages with “connected buildings” conveying information from alarms generated by smoke detectors and temperature sensors to firefighters in emergencies.⁷ Standard development documents from the *National Fire Protection Association* call these devices wireless 911-enabled alarms, which contain sensors for detecting smoke, CO, and heat, and transmit emergency event data directly to 911 dispatchers.⁸

