



## Whitepaper: Next Generation 911

### BACKGROUND

In early 2018, we celebrate the 50th anniversary of the first 911 call made in Haleyville, Alabama, an event that has since fundamentally changed the way citizens access first responder services.

This “golden jubilee” is a reminder of something that is so basic to our existence and is taught in every elementary school: when a life is on the line, dial 911.

Most people take 911 for granted—and they should—because for the people that make the “most important call of their entire life,” 911 simply works.

**Except when it doesn’t.**

## Next Generation 911: A Mission Critical Transformation for Today’s 911 System

### Today’s Technology Requires Modernization

Thousands of dedicated emergency telecommunicators proudly serve their communities as the “first of the first responders.” Those that have sat in the chair and worn the headset know that today’s 911 system, designed in the 1960s, remains largely unimproved. Modern consumer and enterprise technologies that were implemented in the 1990s are still relied upon daily. While still capable, these technologies have been eclipsed by newer, more efficient public safety solutions, which must be adopted.

Some communities have already recognized the need to improve their operations and technologies, and have begun to implement modern solutions to improve outcomes for 911 callers. These improvements are known within the industry as “Next Generation 911” or Next Gen 911.

### What is Next Gen 911, and Why Must We Transition Away from Today’s Legacy 911 System?

Next Gen 911 is a standards-based, all-Internet Protocol (IP) emergency

communications infrastructure enabling voice and multimedia 911 communications, and the sharing of this information with field responders and emergency managers. Today, access to 911 for most is limited to a voice call; in contrast, Next Gen 911 will enable the ability to transmit photos, videos and other existing and future forms of broadband-enabled data, in addition to voice, to 911 professionals. Implementation of Next Gen 911 will:

- increase compatibility with emerging communication technologies
- enhance the flexibility, reliability and survivability of 911 systems during major disasters
- improve emergency response for the public and emergency responders
- and reduce the overall cost of operating the 911 system.

Failing to act in a timely manner to undertake the Next Gen 911 transition will not only prolong deployment, but increase costs., risk incompatibility with emerging communication trends, increase security risks for the 911 system, and miss opportunities for improved emergency response. Our current 911 environment

has resulted in a “patchwork” deployment with widely varied capabilities and limited interoperability with neighboring agencies. A coordinated approach must be adopted in the transition to Next Gen 911.

### Next Gen 911 Deployment Challenges and Opportunities

The Next Gen 911 promise is significantly hampered by challenges and gaps in the areas of governance, funding, technology, operations and education. These gaps must be addressed to promote a more effective and timely Next Gen 911 deployment. Many 911 authorities lack the experience needed to guide the 911 community through the strategic policy development, design, planning, implementation and operation of a state- or region-wide Next Gen 911 solution. Some vendors are marketing text-to-911 solutions as Next Gen 911 or indicating that their solution is Next Gen 911 “capable.” Unfortunately, this creates confusion and neither meets the Next Gen 911 requirements. In reality, Next Gen 911 is the implementation of technology, operations, and policies for 911 call delivery, while retiring decades-old solutions that are, in some cases, well beyond their “end-of-life” status.

There are immediate and long-term strategic efforts needed for 911 authorities to establish a vision to realize the benefits of Next Gen 911. For 911 to meet its statutory requirements, it must first identify a partner to assist in the technological, operational, policy and funding considerations and challenges associated with implementing Next Gen 911.

### Your First Priority: Develop and Support a Comprehensive Next Gen 911 Strategic Plan

Gathering data from 911 stakeholders to assess the current state will provide insight into the requirements of the local, regional, and state public safety communities. Leveraging this data helps to articulate your vision and goals, and then develop specific, actionable initiatives over a five-year period. A comprehensive Next Gen 911 Strategic Plan specifically aligns the principles and themes that will guide the successful coordinated transition to Next Gen 911.

Engaging 911 stakeholders in the creation of the strategic plan will identify necessary requirements to advance Next Gen 911, while providing the opportunity for active participation when carrying out the goals and initiatives. Establishing the plan gives stakeholders the ability to measure progress and stay informed on initiatives, action plans, and tasks that affect your area’s 911 operations. Based on stakeholder input, the strategic plan likely will include goals for multiple aspects of Next Gen 911, including:

- Design, acquisition and deployment of Next Gen 911 networks and Next Generation Core Services (NGCS)
- Implement 911 center interconnectivity and information sharing
- Leverage geospatial technologies for dynamic call routing and to better locate 911 callers
- Protect the reliability and security of the 911 system
- Enhance system reliability and resiliency

“Unless we find a way to help the nation’s [911 centers] overcome the funding, planning, and operational challenges they face as commercial communications networks evolve, NG911 will remain beyond reach for much of the nation. Let me be clear on this point: 911 service quality will not stay where it is today, it will degrade if we don’t invest in NG911.”

-Tom Wheeler, former Chairman, Federal Communications Commission, July 12, 2016

## Immediate Action and Leadership Is Needed

Today's communications service providers are rapidly transitioning their networks to fully-IP-based infrastructure, even while 911 systems remain entrenched in technologies of the past century. Local, regional, and state 911 authorities have the opportunity and obligation to take direct, near-term steps toward the planning, design, and implementation of Next Gen 911, before it's too late.

Those responsible for managing 911 centers need action and leadership from their elected officials and policymakers. Beyond the required planning efforts, 911 is making decisions about updating or replacing their outdated critical technologies and systems. Beyond the networks and applications needed to make Next Gen 911 a reality, our 911 centers need standards-compliant 911 call handling equipment and most of all, accurate and validated geospatial data.

The need for high-quality geospatial data cannot be overstated. Stakeholders across the 911 community must assess and develop relationships and partnerships with their geographic information system (GIS) counterparts. Our experience demonstrates that development of "public safety grade" GIS data takes much longer than expected but is a foundational requirement for all Next Gen 911 solutions. Delaying attention to this critical aspect of 911 is not in the best interest of local 911 authorities.



Next Gen 911 will enable the transmission of bandwidth-intensive data such as streaming video and images; building floor plans, biometrics, field-reporting data and more to first responders for improved emergency response to the public.



Next Gen requires more than just implementing Next Gen "capable" or Text-to-911 solutions. It involves technology, operations and policies for 911 call delivery and the retirement of decade-old solutions that are beyond their end of life status.

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