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Complete Deployment of Next Generation 9-1-1 Across Arizona

Description: All State PSAPs Connected on a Single
NG9-1-1 Core Services Network

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EXECUTIVE SUMMARY

The Next Generation 9-1-1 (NG9-1-1) project is a statewide initiative to modernize Arizona's existing 9-1-1 system. The project aims to improve the efficiency, effectiveness, and reliability of 9-1-1 services while enabling new capabilities, including geospatial routing, text-to-911, improved redundancy, and leveraging an Emergency Service IP Network (ESiNET).

Situation

The NG9-1-1 project involves upgrading and integrating various 9-1-1 technologies, including 9-1-1 call handling systems, dispatch systems, mapping systems, and database systems. It also involves implementing new protocols and standards to ensure interoperability and compatibility with other systems and networks.

Problems

The legacy system was not designed as a 9-1-1 call routing system with built-in redundancies capable of managing effective call location and call routing. Several 9-1-1 outages occurred throughout the state, particularly in the more remote areas where telecommunications infrastructure was limited and extremely costly. The past 9-1-1 service providers did not make provisions to be capable of re-routing a 9-1-1 call to the correct Public Safety Answering Point (PSAP) and relied on re-routing a 9-1-1 call to a different PSAP. This caused multiple challenges, as many PSAPs operated different internal systems that were not compatible across the state. Additionally, the past system caused significant call processing delays due to non-diverse call routes.

Solution

The State of Arizona has launched NG9-1-1 for implementation across all counties. The project is being led by the Arizona Department of Administration (ADOA) 9-1-1 Program in partnership with Comtech Telecommunications, AT&T, and Motorola.

IDEA

The NG9-1-1 implementation provides 9-1-1 emergency call location accuracy improvements with the inclusion of Geographic Information Systems (GIS) location database technology, 9-1-1 emergency call routing accuracy and process time reduction, operating system diversity and redundancy, PSAP 9-1-1 emergency process tool improvements, and the ability for PSAP collaboration across the state. Additionally, utilizing a state contract for this deployment provides a significant cost reduction in statewide PSAP operations costs.

IMPLEMENTATION

This achievement represents an implementation of next generation core services (NGCS), which replaced legacy 9-1-1 systems. The State 9-1-1 Program performed a statewide GIS assessment to bring all key elements associated with the state's land base GIS system to current standards in support of NG9-1-1 call location needs as ingested and required by NGCS. NGCS data centers were put in place with alternate system back-up diversity and redundancy to accept all NG9-1-1 calls, and route to the correct public answering point PSAP through a host service provider.

This system includes three layers of redundancy from the host provider to each PSAP. Also implemented were multiple paths of carrier diversity from the host data centers to the NGCS services data centers to complete a network capable of providing 99.999% operational uptime.

All PSAPs within the planned migration received new call handling equipment with several upgrade options to support technologies associated with PSAP NG9-1-1 operations. The options provided to the PSAPs through this NG9-1-1 deployment include Citizens Input and Smart Transcription. Citizens Input allows the public to access a link provided by the PSAP to capture streaming video to the PSAP that may assist the PSAP in several ways to better manage a 9-1-1 emergency event while providing safety to first-scene responders. Smart Transcription is a PSAP tool that transcribes the 9-1-1 call two-way voice conversation, focusing on keywords for quicker processing, improved clarity, and documentation, and is used as an effective training tool for the PSAP call takers and dispatchers.

In 2024, the State 9-1-1 Program team earned a rare award for outstanding use of the Environmental Systems Research Institute's (Esri) mapping software to build up the quality of geographical data that makes 911 services more accurate and useful in modern-day emergencies. Earning distinction among the 90,000 businesses, nonprofits, governments, and agencies using the GIS tool worldwide, Arizona's 9-1-1 Program team was among the 235 Special Achievement in GIS awardees in 2024. The award recognizes just one facet of the years-long focus, collaboration, and persistence the 9-1-1 Program team has brought to the complex project of upgrading Arizona's emergency response systems statewide. Leveling up the geographic data collected and available across the state is foundational to improving 911 service in Arizona.

IMPACT

A total of 78 PSAPs are now operating on Next Generation 9-1-1. The Navajo County Sheriff's Office was the first dispatch center to migrate in June 2022; the last, Phoenix Police Department, was completed on May 20, 2025. Each state PSAP is now connected to a single NG9-1-1 core services network. While exact numbers are difficult to determine, it is estimated that well over 1 million individual 911 calls are made in Arizona each year. Of those calls, more than 80% are from wireless devices.

All residents and visitors to Arizona will benefit from the State 9-1-1 Program's NG9-1-1 implementation. Every 9-1-1 call now has resiliency through multiple paths and carriers with diversity and redundancy. The immediate benefits of NG9-1-1 include the following:

- Emergency responders can zero in on longitude and latitude within 3 feet when a 911 call is placed from a cell phone.
- Calls from landlines will be traced to updated coordinates instead of outdated billing addresses.
- 911 call centers receive automatic system updates in a cloud environment instead of lengthy manual fixes.
- There is redundancy in the system to prevent 911 outages.
- Anywhere in the state, people can text 911 if they are in a situation where they cannot speak, lack reliable service, or have minimal battery life.
- Anywhere in the state, people can send pictures, video, and audio files to 911 via text or another service, helping 911 operators triage emergency services and help better prepare first responders. The images are also available for any subsequent police reports or judicial proceedings.

The project represents a quantum leap forward for modernizing public safety infrastructure and serving community safety needs in all corners of the state, regardless of population or resources.

REFERENCES

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