

**Missouri Department
of Transportation**



CASE STUDY



Emergency
Communications
for Public Safety &
First Responders

CLIENT

Missouri Department of
Transportation

CHALLENGE

Expand emergency communications
network to ensure mission-critical
communications

REQUIREMENTS

Support for converged VoIP (Voice
over IP), RoIP (Radio over IP), video,
data and radio backhaul

SOLUTION

An upgraded emergency
communications network based
on satellite services

SUMMARY

An easy to deploy, versatile, and
scalable transportable solution that
supports all of its applications





OVERVIEW

The Missouri Department of Transportation (MoDOT) has experienced first-hand the importance of a reliable emergency communications network. In 2008 alone, Missouri dealt with disastrous situations including major flooding and ice storms that were declared state emergency situations. By providing emergency communications services during situations like these, MoDOT helps save lives.

MoDOT was seeking to expand its emergency communications network. It needed a comprehensive and reliable backup and emergency communications system to ensure critical communications always stay online and to enable coordination with other agencies and support personnel with the capability to tie its radio bridges together and seamlessly provide mixed backhaul when terrestrial lines were down.

REQUIREMENTS

- Upgraded communications solution
- Support for converged VoIP (Voice over IP), RoIP (Radio over IP), video, data and radio backhaul
- Mobile, independent of terrestrial networks
- Provide interoperability between state agencies
- Access to the PSTN to integrate with FEMA or other federal agencies.
- Easy to manage, deploy and operate, and cost efficient from both a capital (CAPEX) and operational expenditure (OPEX) perspective

MoDOT determined that the ideal network would utilize broadband satellite connectivity as its core network. During Katrina and Rita, critical voice and data communications were offline. Wireline circuits were damaged, and wireless and cellular technologies were knocked-out since they are dependent on terrestrial communications. Land Mobile Radio (LMR) systems experienced blackouts since they are also dependent on the local land-based infrastructure.

SOLUTION

MoDOT officially implemented its upgraded satellite emergency network in 2008. Utilizing SageNet's Spacenet Satellite Services™, the innovative solution supports full Voice over IP (VoIP) and Radio over IP (RoIP) capabilities with Quality of Service (QoS), Internet access, and can interface with trunked radio systems and analog systems. The solution enables seamless transmission capabilities and control to communicate and interconnect remote tower sites by satellite, and interoperability with legacy radio systems.

In addition, the team developed an innovative telephone solution, referred to as STAC (satellite transport audio circuits), that provides a reliable voice service that is more efficient and cost-effective than alternative phone services. The STAC system, however, connects directly to MoDOT's satellite network to avoid the issue of high contention ratios for shared satellite phone users. Its advanced design uses significantly less bandwidth for voice services, making it more efficient and cost-effective, and reduces the effects of latency.

MoDOT is utilizing both fixed and transportable systems, and SageNet's flexible backup satellite service that can be instantly deployed.

CUSTOMER VALUE

Since the implementation, MoDOT's emergency communications network has been put to use numerous times for real-time deployments, and consistently allowed Missouri emergency response units to communicate better and ultimately perform at peak efficiency. The system has been used to support numerous government agencies.

MoDOT used the advanced emergency management network in Missouri to help government agencies and community organizations resume data and voice communications during the aftermath of severe flooding in 2008. MoDOT provided a transportable and rapidly deployable satellite network to local communities at the request of The State Emergency Management Agency (SEMA). The emergency communications network provided support for Voice over IP (VoIP), radio backhaul, and VPN Internet access.

SUMMARY

The advanced emergency communications network solution provides numerous benefits to MoDOT, including an easy to deploy, versatile, and scalable transportable solution that supports all of its applications. The solution is critical for public safety measures, providing a high reliability communications system in the case of a crisis or disaster. In addition, MoDOT has access to readily available satellite training, ensuring complete support for their communications network before or during an emergency situation.

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