Brochure

Transforming 9-1-1 Collaboration across federal, state and local agencies

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Atos

The Critical Need for Converged Communications in the face of increasingly complex threats

It isn't a matter of if but when the next disaster strikes. While the United States can never be fully prepared, our 9-1-1 system can be better designed to mitigate risk and minimize catastrophe. To measure improvement, agencies across all levels of government must successfully communicate—and the systems used to support this communication simply cannot fail.

Homeland Security Redefined

Today, with emergency information communicated in so many forms, it's an enormous task simply to know what information to share, with whom and how. Homeland security incidents can now pose a greater threat than traditional public safety and can involve public services, if, for example, a terrorist attack targeted the electrical grid. This makes collaboration across organizations more critical than ever.

Communication challenges during the terrorist attacks of September 11, 2001, were perhaps the biggest indicators of this need. A national security incident simultaneously became a local emergency response situation; while the attacks were intended to threaten America as a whole, the physical damage hit local communities. The incident redefined the term "homeland security" and forced us to take a hard look at how we could better prepare for emergencies by improving technological interoperability, breaking down organizational silos and using data to become increasingly proactive.

More recently, the response to the Boston Marathon bombings showed that improvements have been made in collaboration and unified communication for public safety. Federal, state and local first responders came together sharing voice, video and image information to track down the suspects and end the threat. The response demonstrated the need to address homeland security incidents in a "command and control" environment, with the federal government driving policy and technological collaboration to improve interagency communication at all levels.

FirstNet, the broadband network dedicated to public safety agencies across the country—and the biggest infrastructure project taken on by the United States since the national highway system—offers a good example of this model. While FirstNet will be a shared federal, state and municipal resource, it'll be managed at the federal level to ensure centralized command and control. The same must be true for Next Generation 9-1-1 (NG9-1-1), the initiative aimed at updating the 9-1-1 system across the country. NG9-1-1 implementation will occur at the local level, but direction for its creation and funding must come from the federal government as current surcharges and allocation methods are unsustainable.

Are We Up to the Task?

Of course, a federally centralized command and control approach requires more than just policy. The federal government must also ensure that its technology is up to the task. Increased collaboration means that our communication systems must interoperate across federal agencies and within state and local systems as well.

Recent reports indicate that the Department of Homeland Security is planning substantial upgrades to its network strategy to improve its emergency response capabilities. Additional federal agencies should consider these same upgrades. Aside from federally centralized command and control and improved interagency collaboration, a smart network strategy can benefit agencies by saving them millions of dollars.

A Smart Network for Converged Communications Should Include:

One Central Engine

FFundamentally, a successful network strategy has one central engine driving interagency collaboration: a shared centralized framework with enough flexibility built in that all involved parties can have the tools they need. The framework can be focused on all vertical industries, such as utilities, to holistically address homeland security, and should be scalable and application-focused, with controls based on roles and agencies. A single centralized system can also bring all data sources, including social media, into one place, enabling reporting and analytics.

With Atos, this central communications platform or engine powers not only the Public-Safety Answering Point (PSAP) but the Emergency Services IP Networks (ESInet) itself, meaning that a single investment can replace what currently requires at least three individual subsystem purchases: the call handling system, the selective router replacement and the telephone central office for delivery. With the Atos platform, the multimedia session controller (the "engine" or VoIP switch) serves as the call-taking system, has the ESRP embedded (replacing the selective router with a NENA i3 compliant solution) and, as the only carrier-class platform in the industry, also replaces the need for the central office domain.

Site Telephony

Agencies should have a dedicated network for handling inbound emergency calls as quickly and efficiently as possible—calls involving everything from citizen concerns to FBI enquiries. This dedicated network should be built on a carrier-grade switch that can be repurposed for wireless and VoIP and should be equipped to handle millions of voice and data calls. It should be a replacement for and an addition to basic telephony. Large agencies should consider an IP PBX that can handle at least 50,000 calls an hour—the peak load of any major city in the U.S. for 9-1-1 traffic. Site telephony must also be deployable in a pinch and, most importantly, must interoperate with state and local ESInets

Reliability is a huge and growing concern for today's PSAPs, as point-to-point infrastructure has significant limitations concerning backup, failover and sustainability. Our nation's 9-1-1 system still uses a design blueprint from 25 years ago, created well before VoIP and layer 3 technologies were even envisioned. As seen during incidents such as Superstorm Sandy, 9-1-1 telephone company infrastructure oftentimes is not redundant, requires significant manual intervention and can go down entirely.

Video Integration

Agencies need a communications system that can handle all forms of content, particularly video. Police body cameras and car-mounted cameras have become prevalent tools that must be available in real time to all agencies. This was a lesson learned directly from the Boston Marathon bombings, as local surveillance footage played a key role in helping the FBI to identify the bombers.

While standards are still being defined and ratified for delivery of video within an NG9-1-1 domain, one thing is certain: video will become part of the call flow and ecosystem. Though currently separate according to the NENA i3 framework architecture and standards being shaped, video must be treated no differently in a NG9-1-1 domain than any other "call" type. As such, investments today must be scalable to handle delivery of video just as voice is handled: with priority as a 9-1-1 call. The Atos platform has all of the necessary logic, scalability and delivery capabilities today for the multimedia domains of tomorrow.

Routing Protocol

Smart networks also feature a routing protocol strategy for how information will be shared, not just within an agency, but also with other agencies and out in the field. In today's increasingly mobile environment, every kind of endpoint must be considered. Endpoints are no longer just devices such as body cameras; they are people as well.

A PSAP of tomorrow, for example, may have 20 call takers, two of whom are trained to manage video and one as an EMT. Content can be delivered to these three based on the nature of the call, the type of emergency and (most importantly) the operational workflow desires of PSAP management. In this model, one system intelligently delivers content based on the operation itself, with a desktop application that is completely customizable by job function and/or role. Only Atos brings this unique functionality today.

Dynamic Application Capability

Each agency uses a unique set of tools, but under 9-1-1 they all need to work together. That requires one central system in a command and control environment to support applications and mass collaboration between thousands of enterprise applications.

Investing in separate platforms for text-to-9-1-1, video-to-9-1-1 and social media-to-9-1-1 adds unnecessary costs, complexity, latency and inefficiency to the operation. The right solution is a single architecture that allows PSAPs to embrace content based on their operations, their workflows and their staff's skill sets. This is what applications are intended to do: provide customization that is easy, quick and, most importantly, cost efficient.

For a Federally Centralized Command and Control Strategy

Disasters are often unavoidable, but our nation can improve interagency communications, enhance infrastructure and save money by avoiding duplicate and triplicate systems. While incidents occur at the local level, leadership must begin nationally—and not just from a policy perspective but technologically as well. A federally centralized command and control strategy made possible by Atos can break the silos now found in government agencies and transform 9-1-1 collaboration in a world of complex threats.

About Atos

Atos SE (Societas Europaea) is a leader in digital services with pro forma annual revenue of circa € 12 billion and circa 100,000 employees in 72 countries. Serving a global client base, the Group provides Consulting & Systems Integration services, Managed Services & BPO, Cloud operations, Big Data & Cyber-security solutions, as well as transactional services through Worldline, the European leader in the payments and transactional services industry. With its deep technology expertise and industry knowledge, the Group works with clients across different business sectors: Defense, Financial Services, Health, Manufacturing, Media, Utilities, Public sector, Retail, Telecommunications, and Transportation.

Atos is focused on business technology that powers progress and helps organizations to create their firm of the future. The Group is the Worldwide Information Technology Partner for the Olympic & Paralympic Games and is listed on the Euronext Paris market.Atos operates under the brands Atos, Atos Consulting, Atos Worldgrid, Bull, Canopy, Unify and Worldline.

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Let's start a discussion together

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