Before the United States House of Representatives
Committee on Energy and Commerce
Subcommittee on Communications and Technology

Oversight of FirstNet and Emergency Communications

March 14th, 2013

Testimony of Telford E. Forgety, III; "Trey"
Director of Government Affairs & Regulatory Counsel
NENA: The 9-1-1 Association

Summary

1. NG9-1-1 service is the critical consumer-to-PSAP counterpart to the PSAP-to-field communications capability offered by FirstNet.
2. Congress should ensure that FirstNet leverages the extensive technical and operational development work already completed for NG9-1-1.
3. Congress should allow all 9□1□1 to compete for grant funding by including 9-1-1 in the definition of "public safety" for all federal public safety grant programs.
4. Consistent with the FCC's report, Congress should direct the National Implementation Coordination Office to deploy a PSAP Credentialing Agency and a national Forest Guide to support NG9-1-1 system security and call routing.
5. Congress should direct the Department of Homeland Security to deploy a national 9□1□1 data collection and analytics capability to provide real-time insight into natural and man-made disasters and aid the detection of cyber attacks on Public Safety Answering Points (PSAPs).

Testimony

Chairman Walden, Ranking Member Eshoo, and may it please the Committee: My name is Trey Forgety,[1] and on behalf of the 9-1-1 Association's more than 7,000 public- and private-sector members, I want to thank you for holding this hearing. Providing emergency response service is perhaps *the* core function of government, and 9-1-1 is the crucial first link between the public and emergency responders. Just last month, we marked the 45th anniversary of the first 9-1-1 call. As we celebrate that important milestone, it is entirely appropriate that we should evaluate the role of 9□1□1 in public safety communications with a view toward ensuring that consumers can request help from their communities' field responders using the devices, applications, and originating services that they use every day. Next Generation 9-1-1 is the foundation of that vision.

Next Generation 9-1-1 or "NG9-1-1" will provide a standards-based platform for PSAPs and field responders to exchange information such as medical data, photos, video, and response histories. In this regard, NG9-1-1 systems will serve as the bridge between consumers and public safety: Information will flow in to first responders through NG9-1-1 systems and out to field responders via FirstNet. In

[1] I joined NENA: The 9-1-1 Association in 2010 after two years as a Presidential Management Fellow in the Department of Homeland Security (DHS) Office of Emergency Communications. During my fellowship, I served temporarily with the Federal Communications Commission's (FCC) Public Safety and Homeland Security Bureau and with the Department of Commerce's National Telecommunications and Information Administration (NTIA). At the FCC, I developed recommendations for the Public Safety chapter of the National Broadband Plan. Later, at Commerce, I worked to implement the Plan's recommendations as NTIA evaluated applications to the Broadband Technology Opportunity Program (BTOP). Both at NTIA and DHS, I participated in discussions with senior administration officials from the Office of the Vice President, the Office of Management and Budget, the Office of Science and Technology Policy, and the National Economic Council to develop policies for the deployment of the nationwide mobile broadband network for first responders, now known as FirstNet. I hold a Bachelor of Science in Applied Physics and a Doctor of Jurisprudence, both from the University of Tennessee.

this regard, neither system can be fully utilized without the other. That's why NENA believes it is imperative that the federal government take concrete steps to support the deployment of NG9-1-1, and to ensure that FirstNet is deployed in a way that ensures its integration with PSAPs and NG9-1-1 systems. Additionally, NENA believes that NG9-1-1 systems, and the protocols, interfaces, and security models on which they are based, can provide a basis to speed the deployment of FirstNet.

Over the last decade, the public safety community, carriers, hardware manufacturers, and software developers have worked collaboratively through NENA to develop consensus standards for the architecture and operation of Next Generation 9□1□1 systems. Next Generation 9□1□1, or "NG9-1-1," represents the first fundamental change in how the public communicates with public safety agencies since the introduction of 9□1□1 service. NG9-1-1 introduces a new, robust roles-based security model and standards-compliant authentication and encryption mechanisms. Rather than relying on specialized and expensive-to-replicate facilities in a single carrier's network, NG9-1-1 is based on open standards, commodity hardware, and fungible connectivity. For example, an NG9-1-1 PSAP will have the ability to procure connectivity from multiple, diverse carriers to increase resilience in the face of network failures. Indeed, NG9-1-1 systems can even be offered on a fully-redundant, hosted basis. This change in paradigm will provide the public with several benefits, including greater reliability and resilience of 9□1□1 service, an expansion of available communications media to include text and video, and lower costs of service resulting from competition for hardware, software, and connectivity.

These benefits need not be limited solely to NG9-1-1 systems, however: FirstNet can, and, in our view, *should* incorporate standards work that has already been completed outside the public safety radio community. For example, FirstNet could meet the oft-quoted need to provide granular authentication and access control mechanisms by incorporating methods analogous to those contained in NENA's Next Generation Security standard. Borrowing liberally from other public safety standards such as NENA's i3 architecture for NG9-1-1 systems will also allow FirstNet to deploy broadband service for field responders at a lower overall cost by reducing the need for expensive protocol conversion systems and one-off interworking solutions. The deployment of both NG9-1-1 systems and FirstNet are long-term projects for United States, but they must be coordinated. Because NG9-1-1 deployment is already underway, however, it will be particularly important to ensure that the deployment of FirstNet does not displace funding for its sister system, and that it does not create stranded assets for state and local 9-1-1 authorities.

NG9-1-1 systems are already being deployed, in stages, around the country, but deployment timelines are inconsistent from state to state, and even from county to county. In some places, it may be a decade or more before the public has access to the advanced capabilities of NG9-1-1. At the same time, funding for 9□1□1 service, largely a fee-for-service model premised on wireline telephone revenues, is undergoing its own radical transition. Wireline subscribership continues to fall at a dramatic pace as wireless and broadband services replace it in consumer adoption. Not all states have prepared for or reacted to this transition, however, and many public safety agencies already find themselves underfunded as the user fess that once supported their operations dwindle while call volumes remain the same

or continue to rise. Agencies will also face some additional costs as they transition to NG9-1-1 in order to continue operating legacy services and facilities in parallel with Next Generation facilities and software until a final cut-over can be effected.

In the Middle Class Tax Relief and Job Creation of 2012, Congress directed several federal agencies to conduct studies aimed at identifying steps that could be taken to speed up the transition to NG9-1-1. Recently, the FCC submitted to Congress its report on the legal and regulatory framework necessary to support NG9-1-1 service. That report recommends several actions that Congress can take to promote NG9-1-1 deployment. Overarching all of the Commission's recommendations, however, is an important principle that I wish to highlight: Although NG9-1-1 will undoubtedly require larger roles for states and new, but limited roles for the federal government, it will remain a uniquely local service. Recognizing this fact, the Commission's report recommends a number of ways that Congress could provide states, regions, and 9-1-1 authorities with incentives to deploy NG9-1-1 quickly and wisely. NENA very much supports this approach over more regulatory processes that have, at times, been employed in the past. In order to realize the benefits of an incentives-based approach, however, the FCC and other federal agencies that will play a role in NG9-1-1 must have meaningful incentives to provide. Fortunately, NENA believes that Congress can create incentives for NG9□1□1 deployment without appropriating any new dollars.

Currently, the Departments of Justice, Homeland Security, Commerce, and Transportation administer billions of dollars in federal public safety grants. Yet almost none of that money can be used to make improvements in 9□1□1. Because the statutory and regulatory definitions of "public safety" used in these grant programs typically include *only* law enforcement, fire, or EMS service,

9□1□1 doesn't even get a chance to compete for grant funds. Congress can level the playing field, however, by simply changing the definition of "public safety" to explicitly include "9□1□1." This would provide a powerful incentive for 9□1□1 authorities and other local governments to develop smart, cooperative plans for NG9-1-1 deployment, and reward the best plans with federal support.

Providing these incentives through access to federal grants would also help to provide valuable information about which approaches were successful, and which were not, ensuring that later adopters could leverage these lessons learned to improve their own deployment outcomes. There already exist many projects that could benefit from access to grant funds. For example, the Counties of Southern Illinois NG9-1-1 deployment project represents a new regional approach to governance and operations that NENA believes could provide significant advantages and cost savings to local governments that adopt it. Likewise Tennessee's statewide NG9-1-1 transition plan could showcase the virtues of a federated, phased approach to deployment, while Alabama's could showcase the potential of a centralized, swift approach.

Besides providing incentives to speed and improve the roll-out of NG9-1-1, there are two specific roles that only the federal government can play in NG9-1-1. First, the role-based security model developed for NG9-1-1 requires a PSAP Credentialing Agency or "CA." A CA is *not* a new federal bureaucracy, but rather a service that verifies whether the electronic identity of a PSAP corresponds with the government authority actually responsible for it, and issues cryptographic credentials that PSAPs can use to authenticate and secure their communications. Second, the location-based routing model developed for NG9-1-1 will benefit greatly from the deployment of a "Forest Guide." A Forest Guide is a national

database that contains boundary information for lower-level routing servers at the state and/or local levels. A national Forest Guide is also responsible for exchanging routing information with other nations' Forest Guides. This will be particularly useful in areas along our extensive and in some places densely-populated border with Canada where routing decisions are particularly sensitive to location and mobile networks may reach across the international boundary.

NENA previously recommended to the FCC, and the Commission included the option in its report, that these functions should be housed within the National 9-1-1 Implementation Coordination Office, jointly operated by NTIA and NHTSA. NENA believes that the ICO's experience with 9□1□1 and its sterling reputation with stakeholders in the 9□1□1 community make it the best and most appropriate agency to administer these functions. Additionally, the Office's existing subject matter expertise and familiarity with expert contractors will speed the deployment of these functions, once Congress directs the office to begin their development.

Beyond their obvious operational benefits to consumers and public safety, both NG9-1-1 systems and FirstNet also present a significant opportunity to realize positive external benefits such as planning inputs and cost savings for all levels of government. Just as the private sector has begun to leverage "Big Data" to gain insights into manufacturing and retail processes, the public safety community needs access to analytic and visualization capabilities to leverage the tremendous value of aggregated 9□1□1 data. During and after last year's *derecho*, for example, there arose significant questions and perhaps even disagreements as to precisely when, how, and to what extent 9□1□1 service failed, and precisely when it was restored. Had analytic capabilities been in place, however, affected PSAPs could have de-

tected the outage quickly as 9□1□1 call volumes deviated from the expected range for that date and time. More recently, DHS discovered multiple Telephone Denial-of-Service attacks against PSAPs – *weeks* after they occurred. Had a data aggregation and analytics system been in place, these attacks could have been detected in near-real-time, perhaps allowing carriers to mitigate the attacks at higher levels within affected networks, or to locate and apprehend the perpetrators. From a preparedness perspective, robust analytic capabilities will be key to future improvements in 9□1□1 service as they allow 9□1□1 authorities to better match staffing levels to expected call volumes, to reduce the instance of over-provisioning in circuits or bandwidth used to receive 9□1□1 calls, and to detect service failures such as abnormally-long call ring times or abandonment rates.

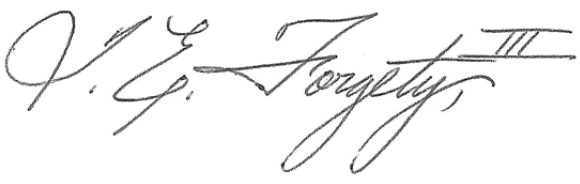
Analytic capabilities will also play an important role in prioritizing the use of scarce public resources in the improvement of public safety and homeland security response services. For example, knowing the percentage of 9□1□1 calls in a given jurisdiction that require a response by fire protection services, and the type of response at that, will allow municipal officials to make better, more informed choices about how to expend taxpayer dollars with the greatest effect on taxpayer safety. Without these capabilities, the public safety community will remain largely blind to the drivers of its costs and largely unable to effectively articulate its impact on safety of life and property in data-driven regulatory and legislative processes.

NENA believes that these capabilities will prove particularly valuable at the federal level for providing situational awareness and response prioritization. Near-real-time map-based visualizations, for example, could allow coordinating agencies such as FEMA and the FCC to detect incidents as they occur and mon-

itor their progress as they expand, contract, and change in character. On a nationwide basis, NENA estimates that deploying analytic and visualization capabilities to 366 metropolitan statistical areas would cost less than $20 million in capital expenditures, and less than $10 million in annual operating expenditures; expanding such capabilities to all 6,000+ primary PSAPs would be only marginally more expensive. Given the clear benefits that such capabilities can provide in terms of ongoing improvements to the preparedness and resilience of public safety communications and to the broader public safety enterprise, NENA believes that achieving a nation-wide deployment of such capabilities should be a key homeland security goal for the next five years, and recommends that Congress direct DHS to begin developing and deploying such a system as soon as possible.

Providing reliable and responsive emergency communications service to the public is the core mission of NENA's membership, and I am pleased, Mr. Chairman, that you and your Committee have called this hearing and allowed me to testify about how we can better do so in the future. I believe that significant improvements in 9-1-1 service can be achieved over the short term and with minimal fiscal impact if only the necessary parties can work together with a common goal and a common understanding that 9□1□1 is a unique service with unique requirements and a central position in the preparedness of our nation. I look forward to working with you and the Committee to achieve these benefits for all Americans.

Respectfully submitted,



Telford E. Forgety, III
Tenn. BPR No. 027226
Director of Government Affairs
& Regulatory Counsel
NENA: The 9-1-1 Association