



Operations/Education Roundtable #1 Summary March 24, 2005

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2005 PROGRAM PARTNERS

America Online
American Association of Poison Control Centers
AT&T
Cingular
COMCARE Emergency Response Alliance
HBF Group, Inc.
Intrado
L. Robert Kimball & Associates
Level 3 Communications
MapInfo
MCI
National Academies of Emergency Dispatch
Neustar
OnStar
Positron Public Safety Systems
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The National Emergency Number Association (NENA) convened the first meeting of the Next Generation (NG) E9-1-1 Operations/Education Roundtable on March 24, 2005 in San Jose, California. The discussion was moderated by Norm Forshee, NENA Operations Committee Liaison and 9-1-1 Coordinator, St. Clair County (IL) Emergency Telephone System Board, and Rick Jones, NENA Operations Issues Director. (See the attached list of the Operational/Educational Roundtable Partners and Participants, Appendix A).

Background: NENA's NG E9-1-1 Partnership Program is a collaboration between public and private stakeholders. It was created to anticipate the impact of emerging telecommunications technologies on 9-1-1 services and to assist in realizing the positive changes and improvements which are possible. The ultimate goal of NENA's initiative is to ensure that everyone has access to emergency services anytime, anywhere, from any device.

Supporting the Operations/Education Roundtable, the management team provides strategic oversight for the program. Three working groups, or Roundtables, for the key areas of operations/education, technology and policy were confirmed at the January 26, 2005 management team meeting. The team establishes goals, timelines and the general process for reaching consensus and recommendations. It consists of senior executives from the participating partners along with top elected leadership and key staff support from NENA. Each Roundtable will meet three times in 2005, dovetailing with other NENA planned events.

The Operations/Education Roundtable was tasked with moving forward with its three primary roundtable meeting topics, while being sure throughout its work that a number of identified points were kept in focus.

These points include:

- Emphasize education earlier in the process and include in all roundtable discussions;
- In order to stay current with new communications developments, involve consumer companies such as AOL and Microsoft in the Program (Note: AOL joined the Operations/Education Roundtable since this point was established by NG management team);
- Take international/global view;

- Importantly, consider education and access for persons with disabilities; hearing impaired community has new technology, private call center. They need to be at the table (Note, Toni Dunne, NENA Accessibility Committee chair did attend the March 24 Operations/Education Roundtable);
- Consider how new technology may enable tagging or user-selected call routing within PSAP (to fire, medical or police) to reduce time it takes to re-direct calls;
- Consider need to re-educate consumers/public regarding their access (or non-access) to emergency services when using next generation devices.

The final 2005 product from the Operations/Education Roundtable will be a series of working papers that provide consensus guidance regarding several recommendations concerning specific identified issues. These will include suggestions and assistance for proceeding forward towards necessary resolutions of the issues. Interim products throughout 2005 will include recommendations to be forwarded to the other two roundtables for additional development. They will also include recommendations for forwarding to other groups within the NENA structure and to entities outside of NENA, as deemed appropriate. Action items will also be identified throughout as recommendations and requests for assistance from roundtable partners and participants.

March 24 Operations/Education Roundtable Meeting: NG Public Safety Answering Point (PSAP)

Following opening remarks by Norm Forshee, each participant provided introductory comments, including brief background details, particularly those relevant to this roundtable's subject matter.

Excerpts from several existing documents were reviewed, focusing on NG E9-1-1 recommendations which have been made and work already in progress. The goal of this segment was to help prevent any duplicative efforts. A summary of the document excerpt points covered can be found in Appendix B.

Dr. Bob Cobb next presented information concerning the ENHANCE 911 Act of 2004 and the National 9-1-1 Program Office which will be created because of it. He reiterated the importance of seeking appropriation legislation for the \$250 million per year authorized under the legislation. He added that appropriations are also needed for funding of the Program Office, which will be jointly managed by the National Highway Transportation Safety Administration (NHTSA, within the U.S. Department of Transportation) and the National Telecommunications and Information Administration (NTIA within the U.S. Department of Commerce). He also explained that DOT currently has a Request for Information (RFI), comments due May 1, seeking suggestions and comments for its proposed NG 9-1-1 initiative. He highlighted that all the work currently going on within NENA is creating a positive environment for NENA and DOT to work cooperatively going forward.



Roundtable #1 Identified Issues

Focused discussion identified and developed important issues which needed addressing as part of Next Generation E9-1-1 PSAP operational planning.

1. N11 Numbers and Others

N11 numbers and other services, such as poison control centers, reached primarily by phone often have little, if any, electronic interconnection with 9-1-1 PSAPs. Also lacking in many areas is a uniform procedure and standardized procedures for transferring such calls when appropriate.

The N11 services include 211 (community information and referral (I&R) services/United Way), 311 (local non-emergency public safety/law enforcement/government), 511 (traveler information number/highway conditions & questions), 611 (wireline business office or wireless call center, latter which is similar to wireline operator services), 711 (Telecommunications Relay Service), and 811 (one call notification systems/excavation activities).

Other services include poison control centers (national 800 number which routes to state/regional center), operator services, various governmental services such as public works, suicide prevention lines, and more.

Any and all the listed numbers and services may receive emergency calls which could best be handled by transferring to 9-1-1 PSAPs. Even if the transfer can be made (via call forwarding) which in many cases, it cannot, any information/data collected already can very seldom be transferred. There is also a need for transferring to, when appropriate, or linking with such services, by 9-1-1 calltakers.

Some locales may have established operational policies and procedures to interact with at least some of the various numbers and services. However; there remains a need to establish nationally-recognized minimum standards for such operational policies and procedures for all.

In a next generation PSAP environment, with enabled transfers including voice, multimedia information, any appropriate data already collected; there is a need to establish nationally-recognized best practices/standards for operational policies and procedures for all such numbers and services.

2. Blocked Calls

In the current environment of primarily local 9-1-1 service, some 9-1-1 calls may not get through at certain times, due to network design and personnel limitations. This can mean that an emergency assistance request is either not delivered or takes several minutes



and/or repeated attempts to reach a PSAP and receive needed response. Next generation PSAP operational and technical designs and processes can eliminate or at least, sharply minimize any such occurrences.

3. National Routing Database

For various reasons, the next generation PSAP environment will need a national routing database, taking into account the U.S. and Canada, along with international/global possibilities. Multimedia emergency calls may pass through international networks and routing guidance will be needed to determine the correct answering point, be it in the U.S., Canada or elsewhere. Since there may be multiple location databases used to determine routing of various communications devices and services, standardization and local control over necessary jurisdictional boundaries and addressing will need to be integrated on a much larger scale than exists today.

Also, N11 numbers and other services, such as poison control centers using 800 services for state/regional routing, are having routing difficulties today with emerging communications services, such as various forms of VoIP, along with roaming wireless customers in some instances. For many VoIP customers, there may be limited to no access for the various N11 numbers (listed above in issue #1), while 800 services (such as used by poison control centers) may not route properly.

All of these numbers and services, in order to function properly in the future, will need routing based on a national routing database, which may include international/global considerations.

4. WiFi, WiMAX, BPL, and Others--Not Involved

WiFi hot spots are in the thousands across the U.S. alone, while various WiFi networks are being implemented and planned, covering areas ranging from municipalities with several thousand people up to planned implantations for metro areas covering populations in the millions. While a single WiFi point may cover a small retail shop area, an emerging technology, a WiMAX point may initially cover 5-6 square miles, with technical work ongoing to increase that to 30 square miles. Communications devices and services, including several of today's VoIP providers, either are or plan to provide communications services via these wireless broadband connections and networks. Their uses may involve communications devices which only work over broadband or which work both over broadband and over existing cellular/wireless networks.

Broadband over power lines is beginning to be implemented and may increase in use in the future. Communications services and devices, such as VoIP for residential and business needs, can also be provided with/over this connectivity.

While communication providers may have blocked access to emergency services for at



least some devices using emerging broadband access methods, there will be a future need to enable such access.

The various entities involved in research, development and implementation of such communication services need to be brought in to next generation E9-1-1 planning work, in order to assist in recognizing possible operational issues which must be addressed going forward.

5. Resources (People)

To develop operational standards, best practices and recommendations, covering various policies and procedures, resources are needed. For next generation PSAP operational and education issues being identified, finding the resources (particularly among volunteers) to work and resolve, becomes itself, an issue. It becomes increasingly important for various organizations and other entities to work together, minimizing duplicative work and sharing resources (people). While AAPCC, ComCARE, and NAED have already committed to being involved in this initiative, others should be sought. Where appropriate, combined groups can work issues, while in other instances; various entities can be asked or tasked with issues more directly related to their membership.

6. Education

Throughout the development of the NG E9-1-1 PSAP and the related operational standards and recommendations development process, education is critical. Education programs for the public who will use emerging communications services and devices, need to be developed, including how to properly use them, what are their limitations, how are they different from previous devices and services, what additional life-saving possibilities are available, multimedia interaction with emergency services and other points.

Interactive education between various entities and their volunteers, who wish to serve on groups to develop the appropriate operational recommendations and standards, is important.

It is important that results from the operations/education roundtables become part of the education process to the appropriate entities, as soon as possible.

7. Disaster Planning and Recovery/Security

Disaster planning and recovery must be considered as next generation PSAP operational needs and issues are identified. Diversity and backup in an IP environment must be identified and implemented. Using emergency network layers can be planned to minimize any loss of region to region, state to state, county to county, municipality to municipality communications. Multiple points of connectivity to redundant databases should be



considered. Automatic and manual rerouting of any and all communications services (voice, multimedia, radio, etc) to other PSAPs should be considered. Recognizing the essential importance of a national routing database, diversity and redundancy of it and any other databases using any of its subsets, should be considered.

In all planning, security is of critical importance, it is essential that it be an integral function.

8. Telecommunicator Certification, Required Pre-arrival Instructions

In developing next generation E9-1-1 PSAP criteria, the critically-essential role of telecommunicators must be addressed. While education and training for future changes involving emerging communication devices and services is developed, the need to certify that those trained have indeed completed essential courses and sessions, increases in importance. Those who manage and supervise the ‘first’ first responders must be made aware themselves of the critical nature of such training and education for all telecommunicator personnel. Essential operational standards and requirements must be in place, requiring the providing of appropriate pre-arrival instructions for all callers reporting emergencies, be they medical, fire or law enforcement related. The interaction and interoperability between many local, state and federal agencies involved in emergency situations in addition to various private entities will require appropriate training and certification for the telecommunicators and others in the next generation emergency network.

9. 9-1-1 Funding/Who Pays, For What

An essential part of the many next generation PSAP changes and improvements, including equipment, services and personnel, is the financing. Where will the development funding come from? Where will the implementation funding come from? Where will the ongoing operations and education funding come from? Which entities involved in the various processes will pay and for what? Existing funding methods seem inadequate and/or inappropriate to the tasks ahead. Emerging international multimedia communication services present challenges. A next generation emergency network involving entities with varying funding mechanisms in place today for systems and functions that are not interoperable, present challenges.

10. Interoperability

While interoperability has often been considered in emergency radio communications, it must be considered on a much broader scale for the next generation PSAP environment. Operational requirements, recommendations and standards should be developed that support full interoperability, without geographic limitations. Also, such development should support full interoperability among the various entities which may potentially be involved in any emergency situations and scenarios. Interoperability should be planned to



help eliminate 'silo' effects and 'my sandbox' notions.

Initial Action Items/Recommendations (Specific action items in bold)

- **National Standards:** There needs to be communication and consensus among the different groups that are working on E9-1-1 solutions (i.e. NENA, NRIC, ComCARE, and NAED). **Roundtable partners should assist in identifying key representatives from other groups who are dealing with similar issues, and reach out to invite them to participate in the ongoing Operations Roundtable discussions and work.**
- **N11 and Other Services:** We need to include additional participants in the NG E9-1-1 structure whereby, in addition to the already involved poison control centers, all N-1-1s, operator services, government services such as public works, and suicide prevention lines are incorporated into the system. As a result, operational requirements and standards need to be developed to guide these developments. **Roundtable partners should make appropriate recommendations and provide assistance with this issue and the need to include additional participants.**
- **Public Education/Access:** The public needs to be clued in about the realities of the 9-1-1 system: 1) Routing happens differently depending on whether it is an N-1-1 or 9-1-1 call and whether it is wireline, wireless or VoIP; 2) People don't realize that different entities, such as Public Works and 9-1-1, do not communicate effectively, or at all with one another; 3) Public perception is that homeland security is funding 9-1-1; this is not the case. **These recommendations should be forwarded to NENA's operational leadership and public education committee for further attention and work.**
- **Policy Roundtable Recommendation:** As a result of the discussions during the March 2005 Policy Roundtable, a recommendation for the Operations/Education roundtable was made, stating "in designing and developing the appropriate operational standards, policies and procedures, the NG Emergency Communications Center must support universal access to the nation's 9-1-1 system with improved coordination with Federal and State leaders."
- **Blocked Calls:** While such calls can be eliminated or at minimized compared to current network designs and implementations, related key operational issues, particularly those involving needed interconnection and interoperability between PSAPs and other entities, must be worked. **This recommendation should be forwarded to NENA's operational leadership for further attention and work.**
- **National Routing Database:** Further review by the operations/education roundtable of this concept is important; to better identify the operational issues that would need focus and attention. **Presentations at the June 30 operations/education roundtable**



planned.

- **WiFi, WiMAX, BPL, Others--Not Involved: Roundtable partners should assist in identifying, reaching out and inviting others, such as key participants in emerging communication services and technologies, to participate. Also needed are participants from telematics and related entities, as such services expand well beyond those provided with vehicles.**
- **Resources (People): Roundtable partners should assist in identifying and involving other entities which can help contribute needed resources (people/volunteers) to develop necessary operational requirements, recommendations and standards.**
- **Education: There is a need to educate a broad range of entities and people in the ongoing work and efforts of the NG E9-1-1 operations/education roundtable. NENA leadership and staff should help in this endeavor. Roundtable partners should assist and suggest additional steps which should be taken.**
- **Disaster Planning and Recovery/Security: These critical topics require considerable attention as part of NG E9-1-1 planning. These should receive future focused attention and discussion within the operations/education roundtable.**
- **Telecommunicator Certification, Required Pre-arrival Instructions: NENA, NAED and other interested parties should work together to help fulfill these recommendations.**
- **9-1-1 Funding/Who Pays, For What: NENA and the NG E9-1-1 policy roundtable partners should be advised that this is of paramount importance.**
- **Interoperability: Roundtable partners should assist in identifying, reaching out and inviting other entities to participate and assist in realizing this recommendation.**

Timeline for Next Steps

May 23--Draft summary report distributed to Program Partners for review.

May 27--Comments received from Program Partners and other participants.

May 31--Final draft summary report distributed to Program Partners.



June 1-3--Conference call follow-up for Program Partners. Final approval of summary report for release to NG E9-1-1 management team and additional planning for June 30 roundtable.

June 30- Second Operations/Education Roundtable in Long Beach, CA (after NENA Annual), noon to 4pm, with demonstrations and presentations from 10 a.m. to noon.

2005 NG E9-1-1 Operations/Education Roundtable:

March 24 roundtable

Primary Topic #1: NG Public Safety Answering Point (PSAP) Partnering with PSAPs and others involved in 9-1-1, this expertise is necessary to develop appropriate operational standards, policies and procedures. This process will help develop useful ideas and a path forward on how PSAPs can enhance their services by adopting or integrating with some of the revolutionary communication changes being developed and implemented.

June 30 roundtable

Primary Topic #2: Consumer/Business Communications
Private research is valuable in determining best operational standards, policies and procedures for interaction with PSAPs. This roundtable will deal with issues related to the development of new communications services and devices, and how this is affecting emergency services.

Late September-October roundtable

Primary Topic #3: Education
The telecommunications revolution has created numerous educational needs and opportunities for public safety communications companies, the public, and more. This roundtable will facilitate a dialog that produces a cohesive education and awareness program.

About NENA

A not-for-profit 501 © (3) organization, the National Emergency Number Association (NENA) is the only educational organization dedicated solely to the study, advancement and implementation of 9-1-1 as America's universal emergency number. Established in 1982 to integrate 9-1-1's "One Nation- One Number" into our community culture, NENA has more than 7,000 members organized into 46 chapters across the U.S. and Canada.



At www.nena.org you will find a wealth of additional information on the nation's 9-1-1 issues, including NENA's leadership role in other activities to increase the level of 9-1-1 service in each state and county of the United States, and links to other official documents.

Appendix A

List of Partners

AAPCC (American Association of Poison Control Centers)—Patty Heard

**AOL

*Cingular

*ComCare

NAED (National Academies of Emergency Dispatch)—Scott Freitag

Neustar—Mark Dahlen

*Nextel

Positron—Phil Rotheram

*did not attend

**joined same week as March roundtable

Other Participants and Guests

Dr. Bob Cobb, NENA's NG E9-1-1 Project Manager

Christy Williams, NENA Educational Advisory Board (EAB) representative and Public Education Committee chair

Rob Martin, NENA Executive Director (Guest)

Toni Dunne, NENA Southeast Regional Vice-President and Accessibility Committee Chair (Guest)

Paul Binder, T-Mobile (Guest)

Natasha Chin, Red Flash Group

Appendix B

Document Reviews

NENA IP Capable PSAP Features and Capabilities Standard Document 58-001. Created within NENA committee, approved Feb 1, 2005

Highlights

1. The ability to receive 9-1-1 calls from the public switched telephone network (PSTN), managed private IP networks, and directly from the Internet.



2. Sufficient bandwidth to support pre-determined limit of simultaneous calls.
3. Ability to receive and respond to text messages (including SMS, IM and other services).
4. Ability to conference callers and emergency responders in a multimedia environment that would permit the exchange of digital photography, digital audio, video, etc'
5. The ability to receive telematics and similar calls with voice and appropriate data information.

NRIC (Network Reliability & Interoperability Council) VII, an FCC-designated federal advisory committee.

The first six NRICs mainly looked at the traditional telecommunications structures and needed best practices, with very limited inclusion of 9-1-1 related issues. NRIC VII is focusing on future 9-1-1 and emergency services networks. NRIC VII includes various working groups. 1B is focusing on E9-1-1 long term issues, primarily where E9-1-1 should be by 2010.

“As we expect responders to share the same Emergency Services networks as the PSAP, we expect to be able to connect callers directly to responders when appropriate. All available media streams and data should be capable of being forwarded (or directly accessed) by responders assigned to an incident,” states the first report of IB.

It goes on to state, “The evolution of the Emergency Services Network will improve the services Public Safety can offer to people with disabilities. VoIP provides a greatly superior capability for alternate media streams such as interactive text. Unlike present TDD devices, VoIP interactive text media is signaled with the call, and thus can be routed to an appropriate call taker, who will know, as the call is being answered, that it is an interactive text call. Even language preference can be signaled in advance and routing can be made sensitive to language.”

NENA IP capable PSAP standard and NRIC 1B’s first report have very similar recommendations, conclusions and statements. NRIC 1B is now working on its final report concerning future E9-1-1 architecture.

NRIC 1D, Communication Issues for Emergency Communications Beyond E9-1-1

In NRIC 1D’s first report it is mentioned that emergency medicine is developing data from four sources: vehicles (telematics), personal medical information subscription services, oral conversations (i.e. PSAPs) and on-scene personnel.

The report states we must have a single process by which emergency data standards for information is shared (key point) between emergency professions and that needs to be coordinated and developed.

-“Just in time training video”-have an instant video that trains people right away for disasters and emergencies. Need to prepare people within 24 hours of disaster that will happen.



ETSI EMTEL (European Telecommunications Standards Institute Emergency Telecommunications Group) Emergency Services Access Operational and Technical Requirements

Goal is to provide 1-1-2, as the emergency services access number in the 25 European Union countries.

While ETSI is a telecommunications standards group for Europe, its EMTEL group does set both operational and technical requirements for the appropriate emergency service access networks and systems. This document establishes those going forward in an IP environment and taking into account, emerging communication devices and services. None are in conflict with similar ones developed within NENA, and we're working with ETSI. This is important because many next generation components will be best if done with an international/global approach. Many of our NG E9-1-1 program partners, such as Positron, are global, and we need global solutions. If you can standardize vendor equipment, you can cut costs, and have more safety etc.

DOT (U.S. Department of Transportation) Next Generation 911 Initiative Request for Information excerpts.

DOT wants to assist in the development of NG 9-1-1 and help move it forward, including providing important resources and direction in this endeavor. As part of the discussion concerning this provided document, Dr. Cobb gave an overview of the **National 911 Program Office**

The Enhance 9-1-1 Act of 2004 created a 9-1-1 Program Office called Implementation Coordination Office (ICO), jointly managed by NHTSA, an entity within the Department of Transportation, and NTIA, an entity within the Department of Commerce.

While that Act authorized \$250 million per year for five years in matching funds, primarily to assist PSAPs in upgrading equipment and systems, particularly in order to handle phase II wireless E9-1-1, there is now a need for additional legislations, granting the appropriations needed to fulfill that commitment

