NG 9-1-1 Update

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Core Purposes of NG9-1-1

Fully replace E9-1-1 while retaining the capabilities and functions in place today.

Add capabilities to support changes for current and new types of Originating Service Providers.

Add flexibility for PSAPs and 9-1-1 Authorities to manage calls, share costs and applications.

Add capabilities to integrate and interoperate with emergency entities beyond the PSAP.
NG9-1-1 EcoSystem

NG9-1-1 Core Services on an ESInet

- Originating Service Environment
- E9-1-1 ALI Database
- Legacy E9-1-1 Selective Router

PSAP
- Call Taker System
- Computer Aided Dispatch
- Map Display
- Logging & Reporting

Radio Networks
- Homeland Security
- Town Hall
- FEMA

Graphical Information System (GIS)

Extended Emergency Networks

- LVF
- ESRP/PRF
- Security Functions
- ECRF with PSAP Boundaries
- LNG/LSRG
- LPG

IP “Call” Location
TDM Call
NG9-1-1 Transition Steps

NG9-1-1 Transitional Steps

Transitional NG9-1-1

Legacy 9-1-1

NG9-1-1
NG9-1-1, ESInet, and `i3' are not equivalent terms!

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## 9-1-1 Today & Tomorrow

<table>
<thead>
<tr>
<th>9-1-1 CAPABILITY</th>
<th>E9-1-1</th>
<th>NG9-1-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice Calls</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Text/Multimedia/Sensors/IoT</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Transfer Mis-Routed Calls</td>
<td>Limited Capability</td>
<td>Yes</td>
</tr>
<tr>
<td>Virtual PSAPs</td>
<td>Limited Capability</td>
<td>Yes</td>
</tr>
<tr>
<td>Additional Data</td>
<td>No</td>
<td>Yes*</td>
</tr>
<tr>
<td>Data Sharing across regions</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Data Sharing with Responders</td>
<td>Limited Capability</td>
<td>Yes</td>
</tr>
<tr>
<td>Policy Based Call Routing</td>
<td>Managed by E9-1-1 SSP</td>
<td>Managed by 9-1-1 Authority</td>
</tr>
<tr>
<td>Location Delivered with Calls</td>
<td>No</td>
<td>Yes*</td>
</tr>
<tr>
<td>Standard IP Interfaces</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

* These services require next generation originating networks as well as Next Generation 9-1-1
NG9-1-1 DATA EVOLUTION

• Some new data will naturally come into play as new service types appear

• Each type of service may also involve additional optional data beyond what is naturally associated with that call type

• Each 9-1-1 Authority will have to decide which optional additional data is to be used in the operations for their PSAPs

• And what training will be required to support it
NG9-1-1 allows for additional data to be acquired from multiple sources. Data can be used to identify initial responders for dispatch, make immediate notification to other agencies, provide information to help increase responder safety, and improve call processing.
Examples of Additional Data include:

- **Caller Provided Medical Data**
- **Floor Plans**
- **Telematics**
- **Fire Control Panels**
- **Building/Fire Code Inspections**
- **Hazardous Materials**
- **Sensor Locations and Data**
- **Historical Data**
- **Surveillance Camera Locations**
- **Campus / Facility Layouts**
NG9-1-1 NEW CAPABILITIES

Ability to transfer calls, with data, anywhere necessary

Increased interoperability between applications and organizations

Ability to share workload dynamically
NG9-1-1  NEW CAPABILITIES

Ability for call takers/dispatchers to work together from different physical locations  (Virtual PSAP and Responder Broadband Networks)

More options for contingency planning / disaster recovery

Ability to collaborate with regional PSAPs and Standardize Training
NG9-1-1  NEW CAPABILITIES

Data Sharing &
Situational
Sharing

Awareness
management of
large scale incidents

Increasing opportunities for mutual aid and
PSAP collaboration/cooperation
NG9-1-1 NEW CAPABILITIES

What has to happen to realize these capabilities?

• NG9-1-1 features able to support them must be installed

• Multimedia (beyond voice) will be a progression, as the Originating Service Providers develop the capability to bring text and video through their networks to NG9-1-1

• But – when it happens, it will happen fast! Pent up demand

• NENA and Public Safety Authorities need plans and identified Transition steps to support changes when and as they occur

• Public Safety Authorities must be ready - don’t be the roadblock
What has happened recently?

• 2015 FCC TFOPA Report: NG9-1-1 and PSAP Optimization options and pros and cons

• 2015 thru 2016: National 9-1-1 Office develops NG9-1-1 Maturity steps for NG9-1-1 Transition

• 2016 TFOPA Task Force: Expand 2015 Report and provide planning methods at all levels of 9-1-1 Authorities, utilizes Maturity steps in an NG9-1-1 Readiness Checklist covering major facets of planning and implementation

• 2016 CSRIC WG1: Identified and evaluated options to provide caller location based routing of 9-1-1 calls

• 2014 thru 2016: Development of the National Emergency Address Database (wireless indoor location augmentation)
What has happened recently at NENA?

- Completion of NG9-1-1 Core Services Architecture v2 (i3)
- Development of NG9-1-1 RFP Guidelines
- Development of Emergency Incident Data Document (EIDD)
- Development of Monitoring and Managing NG9-1-1 Service and Systems documents
- Updating of PSAP 9-1-1 Operations Standards
- Development of NG9-1-1 System Operations Standards
- Several other Standards
Resources

• National Emergency Number Association (NENA) - Next Generation 9-1-1 Project: Detailed information on all aspects of NG9-1-1 can be found at http://www.nena.org/ng911-project.


• National Emergency Number Association (NENA) - Next Generation Transition Planning Committee (NGTPC). Detailed information relating to NG9-1-1 system transition issues being developed by the NGTPC can be found at http://www.nena.org/technical-committee/next-generation-transition-planning

• National Emergency Number Association (NENA) – Next Generation 9-1-1 Policy Implementation Handbook - available on the NENA website


Resources

- U.S. Department of Transportation, Research and Innovative Technology Administration (RITA) - *Next Generation 9-1-1 Initiative:*
  [http://www.its.dot.gov/ng911/ng911_pubs.htm](http://www.its.dot.gov/ng911/ng911_pubs.htm)

  - *Next Generation 9-1-1 System Initiative Procurement Tool Kit.*

  - *Next Generation 9-1-1 System Initiative - Final Analysis of Cost, Value, and Risk.*
    [http://www.its.dot.gov/ng911/pdf/USDOT_NG911_4-A2_FINAL_FinalCostValueRiskAnalysis_v1-0.pdf](http://www.its.dot.gov/ng911/pdf/USDOT_NG911_4-A2_FINAL_FinalCostValueRiskAnalysis_v1-0.pdf)

  - *Next Generation 9-1-1 System Initiative - Final System Design.*

  - *Next Generation 9-1-1 System Initiative - Transition Plan.*