Next Generation 911 101
For Stakeholders & Decision Makers
Purpose
To educate stakeholders and decision makers about NG911 and issues surrounding the movement by answering (5) basic questions...

What exactly is NG911?
Why move to NG911?
What has to happen to get to NG911?
What is the expected timeline for NG911?
Why does all this matter to me?
Next Generation 9-1-1 (NG911) is an Internet Protocol (IP)-based system that allows digital information (e.g., voice, photos, videos, text messages) to flow seamlessly from the public, through the 9-1-1 network, and on to the 9-1-1 Call taker and on to Emergency Responders.
The National Emergency Number Association (NENA) is at the forefront of this system development that is known as the NENA i3 Standard

*NENA-STA-010.2-2016*
NG911 provides advantages for 911 Centers

- Allows for various Types of calls to be received: voice, text, image, video, and other emerging technologies.
- Ability to transfer and receive calls from PSAPs outside the local region (along with transfer of associated call data).
- The capability to accept supplemental information designed to facilitate emergency services.
- Provides standardization of technology and applications which will allow for more cost effective solutions.
Components of a Fully Functional NG911 System

- Carrier call delivery
- 911 Center Equipment
- ESInet
- Databases
- Core Services
- Procedures
- NG911(i3)
911 Center Equipment

Telephone equipment must be capable of receiving voice and data via internet protocol. (IP)
### Procedures

Process and policy for handling 9-1-1 voice, text, images, video from various devices and applications.
ESInet
Private, managed emergency services IP network infrastructure upon which application platforms and core services can be deployed
Core Services

Components [equipment/processes] that make up the system functionality needed to process a 9-1-1 call from call origination through call completion.
Geo Spatial Routing (*a subset of core services*)

Delivery of 9-1-1 calls to the most appropriate PSAP based upon the calling device’s location compared to GIS data.
Policy Based Routing (*a subset of core services*)

Delivery of 9-1-1 calls to the most appropriate PSAP based upon pre-defined conditions and or situations.

911 Call delivered to PSAP B
Data relating to the 9-1-1 caller’s location and personal information, PSAP boundaries, buildings, call routing rules, etc.

### MSAG

<table>
<thead>
<tr>
<th>Street Name</th>
<th>Low</th>
<th>High</th>
<th>Community</th>
<th>O/E</th>
<th>ESN</th>
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<tbody>
<tr>
<td>CLWD VLG CT</td>
<td>4203</td>
<td>4207</td>
<td>MY COUNTY</td>
<td>O</td>
<td>101</td>
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<tr>
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<td>4210</td>
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<td>E</td>
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<td>COACHMAN AV W</td>
<td>2900</td>
<td>4799</td>
<td>CITY A</td>
<td>B</td>
<td>102</td>
</tr>
</tbody>
</table>

### ALI Database

<table>
<thead>
<tr>
<th>TN</th>
<th>Address</th>
<th>Community</th>
<th>Name</th>
<th>ESN</th>
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<td>PUBLIC, J Q</td>
<td>101</td>
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<td>813-555-4321</td>
<td>4208 CLWD VLG CT</td>
<td>CITY B</td>
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<td>813-555-6789</td>
<td>3214 COACHMAN AV W</td>
<td>CITY A</td>
<td>JONES, MARY</td>
<td>102</td>
</tr>
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</table>

### Selective Router Database

<table>
<thead>
<tr>
<th>TN</th>
<th>ESN</th>
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<tbody>
<tr>
<td>813-555-1234</td>
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<tr>
<td>813-555-4321</td>
<td>103</td>
</tr>
<tr>
<td>813-555-6789</td>
<td>102</td>
</tr>
</tbody>
</table>
Carriers
Carriers must be able deliver 911 calls with location with the call.
All service providers need to be able to comply. (Landline, Cellular and VOIP)
Question #2. Why move to NG911?

The current system is antiquated.

Telephone companies are notifying that they are moving away from analog to IP based systems for all of their communication services including 9-1-1.

Specifically, AT&T (a major Florida 9-1-1 service provider) has announced publically that they are doing away with copper by 2020!
Communication devices made available to the public are equipped with technology that our 911 infrastructure is unable to utilize.

The public is using technologically advanced devices and applications that can provide helpful data that is currently not made available in the 911 system.

The public have expectations that these technologies should work the same when contacting 911.
Commercial sector technology capabilities are more advanced than that of public safety.

Common Re-occurring question....

*If an Uber, Pizza Hut and Starbucks can see your name, location and get real time updated information, why can’t public safety?*
**Question #3. What has to happen to get to NG911?**

<table>
<thead>
<tr>
<th>Legacy</th>
<th>NG</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Simplistic Analog Networks</td>
<td>• Engineered, Managed IP Networks</td>
</tr>
<tr>
<td>• Static Translation Based Controls</td>
<td>• GIS and Database Controls</td>
</tr>
<tr>
<td>• Limited to Voice Calls</td>
<td>• Voice, Text, Image, Video</td>
</tr>
<tr>
<td>• Data Bandwidth 20 digits (2 TNs)</td>
<td>• Bandwidth unlimited (SIP Header)</td>
</tr>
<tr>
<td>• Custom Interfaces for Each Service</td>
<td>• Standard IP Interface for All Services</td>
</tr>
</tbody>
</table>
A strategy needs to be developed that addresses the **technical**, **operational**, and **financial** requirements in transitioning from Legacy 911 to NG911.

“Mission Statement”

*Promote and support the development, coordination, and integration for an evolved, fully-functional, seamless "Next Generation 9-1-1" system that is accessible anytime, anywhere, from any device in order to realize the full potential for 9-1-1 to provide emergency services, enable interoperability between systems, protect human life, preserve property, and maintain public safety for the residents, visitors, and first responders in the State of Florida.*
Technical

All PSAP 9-1-1 call handling equipment must be NENA i3 standard compliant.

Address databases must be GIS based. This will require a significant amount of location verification and validation. *(Min 98%)*

All PSAPs must transition to an i3 capable network infrastructure.

Network infrastructure must have access to the core elements for call processing and routing.

Carriers must send the location information with call.
Operational

Agreements between counties must be (Interlocal/MOU)

Policies and Procedures must be developed.
(practices for working with new technologies, archiving data, etc.)

Training must be developed and implemented.
(Telecommunicators, IT Personnel, Management & Public)
Financial

Must determine the costs associated with NG911 System.

Must determine what an adequate funding model looks like.

Must find opportunities for financial savings, through regional and/or statewide initiatives.

The 911 Fee and/or additional revenue stream must be capable of sustaining costs to support new technologies.
Some counties are already taking steps to move forward by:

- Establishing regional 9-1-1 work groups in order to develop strategy and action plans to address technical and funding concerns.
- Implementing an IP network and NG911 compatible equipment as funding allows.
- Preparing data to be compatible with the NG911 GIS data model and meet recognized standards of accuracy and completeness.
- Seeking needed stakeholder and decision maker support in order to lobby for change in 9-1-1 fee legislation to support rising system costs.
Question #4. What is the expected timeline for NG911?

Timelines are going to vary based on multiple variables. Examples include:

• Developing and maintaining a governance structure.
• Implementation of IP networks.
• Preparation and/or refinement of GIS Data.
• Implementation of NG Core Service Elements.
• Upgrades from legacy call handling systems and applications to IP-capable equipment and services.
• Establishing security for NG911 networks and equipment.
• Operations planning and execution.
Realistically.... It could take 5, 10 or even more years before reaching the NG911 i3 end state solution nationwide.
Question #5. Why does all this matter to me?

County interested stakeholders:

• NG911 is having a financial impact on county governments general funds and other subsidies.

• Citizens and visitors have increasing expectations. If public expectations are not met, it can ultimately impact the way in which they see our local legislators and officials.

• Public expectations can create a level of liability.

• The ability to leverage new technologies will improve public safety response which can result in a safer community and positive image of the county and officials.
Question #5. Why does all this matter to me?

State interested stakeholder:

• Florida needs to take a pro-active approach to the NG911 movement to keep from falling behind other states. There are other states are much more advanced than Florida.

• 911 fee revenue funding in Florida is significantly lower than other states which is having a negative impact in terms of being able to implement new technology.

• It is essential that the state representatives support a regional or statewide strategy so counties do not continue to go in multiple directions.
To have a successful and rapid transition from legacy technology to NG911 technology is not something that the 911 Coordinator can do alone. It will be a joint effort by many people at various levels of government, across the state and across the country.