



What's Next Report

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Dia Gainor

Welcome and Introductions

Shelly Row

Director, ITS Joint Program Office
Research and Innovative Technology Administration
U.S. Department of Transportation

Laurie Flaherty

National Highway Traffic Safety Administration - Office of EMS

Dia Gainor

TSAG Chair, Executive Director National Association of State
EMS Officers



What is TSAG?

- Transportation Safety Advancement Group
- TSAG Involvement in NG9-1-1
- US DOT Intelligent Transportation Systems Joint Program Office



Before 9-1-1

Contacting emergency services pre-1970's

Box Alarms

1

Since most people didn't have a phone in their home until the early 1900's, citizens used "box alarms," often on street corners, to notify the fire department.

Operator-Assisted

2

Some 40-50 years later, with home telephones ("landlines") readily available, the police could be called "directly" (but often through an operator).

Advent of 9-1-1

3

The very first 9-1-1 call was made in Haleyville, Alabama on February 16, 1968. 9-1-1 provided an easy-to-remember, three-digit phone number that would connect the caller to the police.

Today's 9-1-1

Progress since 1968

Late 1960's – 1970's

9-1-1 is established across the U.S., starting mostly with urban areas.

1980's

9-1-1 was upgraded to Enhanced 9-1-1 (E9-1-1)* which provided the caller's telephone number and address

1990's – Present

E9-1-1 was upgraded to support calls from wireless devices and Voice over Internet Protocol (VoIP) devices.

```
207
(585) 522-3428 07:35:01 07082010
Doe, John & Jane
150 RESD
Chili Ave

Rochester NY
Bldg Unit Flr
ESN=325 MTN:585-522-3428

ROCHESTER PD
ROCHESTER FIRE
ROCHESTER FIRE
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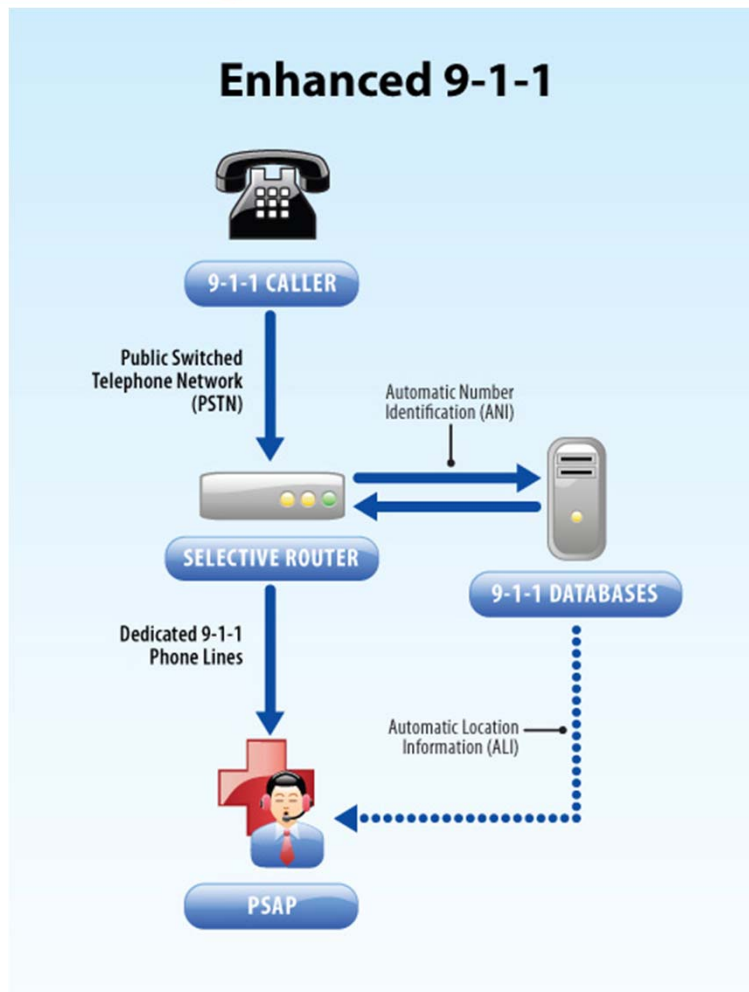
Sample E9-1-1 Screen

** E9-1-1 delivers Automatic Number Identification and Automatic Location Information (ANI/ALI)*



Today's 9-1-1 – Wireline Call

(traditional, fixed location callers)



- Dialing 9-1-1 is more than just being connected to a 9-1-1 emergency call taker...
- The phone system routes your call based on predefined data
- The 9-1-1 system looks up the location (ALI) of the phone number (ANI) in a “Master Street Address Guide” or MSAG
- ANI/ALI is immediately forwarded to the public safety answering point (PSAP – also known as a “9-1-1 Center”)

Today's 9-1-1 – Wireless Call

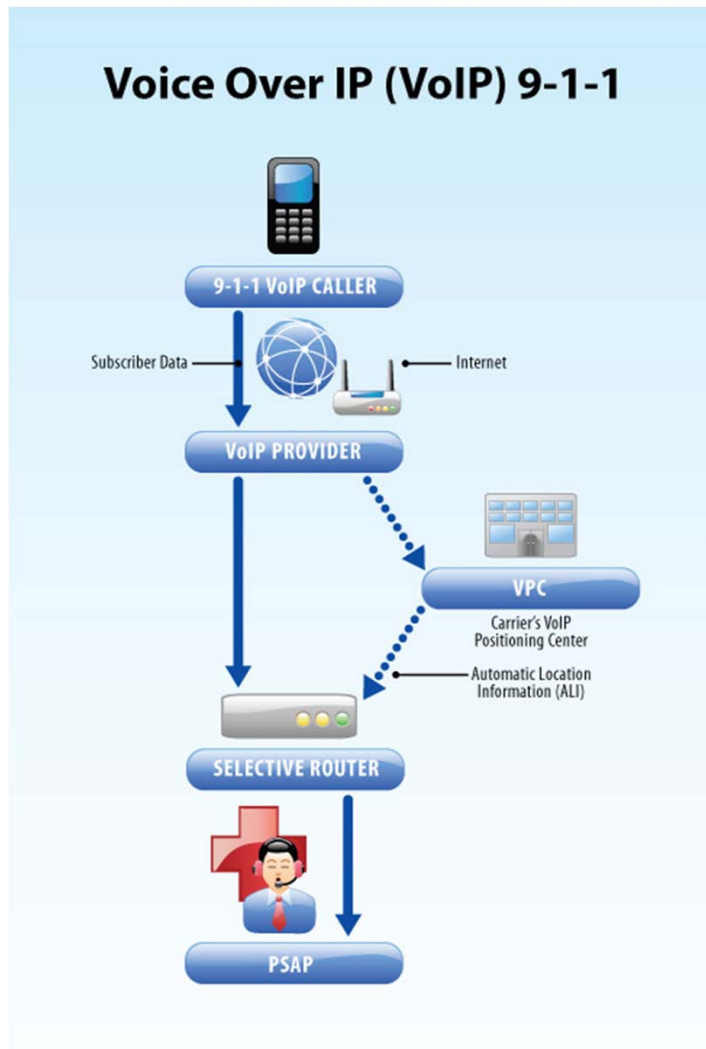
(wireless users, potentially-changing location)



- Wireless 9-1-1 is a bit more complicated, requiring the wireless service provider to locate the caller using either a GPS chip embedded in the phone, or cell phone signal power and triangulation between multiple cell phone towers.
- Somewhere between 33% and 50% of all 9-1-1 calls made today are wireless calls.
- 95% of PSAPs currently have some “Phase II Wireless” ability (wireless location accuracy to 50-300 meters).

Today's 9-1-1 – Voice over IP Call

(Internet-based users, user-supplied location)



- Voice over IP (VoIP) callers use a process that is similar to wireless 9-1-1, however the VoIP user typically must pre-define the location.
- Some VoIP services (e.g., Skype and Google Voice) do not offer 9-1-1 services.
- A recent FCC report indicated some 23 million VoIP subscribers as of June 2009 (up **10%** in the just the first 6 months of 2009).
- Locating VoIP callers can be problematic, especially if the device is moved without the subscriber updating their location.

Why NG9-1-1?

NG9-1-1 is a system of 9-1-1 services and databases that run on an Emergency Services IP Network (ESInet). Sometimes referred to as a “system of systems” or “network of networks”

Why is it important?

- Legacy Features
- Supports New Technologies
- Enhances Interoperability



The Need for Next Generation 9-1-1

Today's "legacy" 9-1-1 system is being outpaced by emerging technologies

1

Constant adaptation of legacy 9-1-1 is expensive and slow

2

New communications technologies need "plug and play" access and interfaces

3

Growing data rich environment (that today's 9-1-1 can't handle)

4

Need data bandwidth, modernized network (IP), open standards

5

Need a more flexible and easily controlled 9-1-1 system

6

Need nationwide and beyond intercommunication, including other emergency services (transportation operations, emergency management, etc.)

7

Post transition, NG9-1-1 can be significantly more efficient (and likely less expensive to implement new features)

Typical Emergency Response

NG9-1-1 provides an opportunity to enhance the entire encounter



Enhanced Routing Abilities

Geographic-based data provides the ability to route callers faster and with more accuracy.

Flexible PSAP Call Handling

Better and more useful forms of information, give PSAPs options on how best to manage calls.

More Coordinated Response

Increased sharing of data, resources, procedures, and standards, improves a response.

Today's 9-1-1 vs. NG9-1-1

9-1-1 CAPABILITY	E9-1-1	NG9-1-1
Voice Calls	Yes	Yes
Transfer Misrouted Calls	Limited Capability	Yes
Location Delivered with Calls	No	Yes*
Policy Based Call Routing	Managed by E9-1-1 SSP	Managed by 911 Authority
Text/Multimedia	No	Yes*
Additional Data	No	Yes*
Data Sharing Across Regions	No	Yes
Data Sharing with Responders	Limited Capability	Yes
Virtual PSAPs	Limited Capability	Yes
Standard IP Interfaces	No	Yes



NG9-1-1 System Design Characteristics

NG9-1-1 is being designed with the future in mind

Standardization

1

Employing consensus-based open standards is essential to achieve national interoperability and to share data among geographically dispersed PSAPs and other responder agencies.

Non-Proprietary Technologies

2

The NG9-1-1 system relies on commercial off-the-shelf (COTS), open source, and common telecommunications and networking products used throughout the industry.

Key Mission-Critical System Engineering Design Features

3

NG9-1-1 is designed to provide: scalability (sized to fit/expandable), extensibility (supports future technologies), reliability (able to withstand failures), and configurability (meet diverse needs).

The *What's Next* Project

Opportunity to make NG9-1-1 more valuable to first responders

- Collaborative effort involving stakeholders
 - Law Enforcement
 - Fire-Rescue
 - EMS
 - Transportation Operations



The *What's Next* Project

- Provide insight from first responders:
 - Cultural
 - Organizational
 - Operational environments
- What data?
 - Prioritize types of data
 - Discuss how and when to transmit the data to/between first responders

The *What's Next* Forum

September 23 and 24, 2010 • Washington, D.C.

- American Ambulance Association
- American Association of State Highway and Transportation Officials
- American College of Emergency Physicians
- American College of Osteopathic Emergency Physicians
- Association of Metropolitan Planning Organizations
- Association of Public-Safety Communications Officials - International
- Governors Highway Safety Association
- I-95 Corridor Coalition
- International Association of Chiefs of Police
- International Association of Fire Chiefs
- International Association of Fire Fighters
- National Association of Counties
- National Association of Emergency Medical Technicians
- National Association of EMS Physicians
- National Association of State EMS Officials
- National Association of State Fire Marshals
- National Emergency Number Association
- National Fire Protection Association
- National Sheriffs' Association
- National Traffic Incident Management Coalition
- National Volunteer Fire Council
- Transportation Safety Advancement Group



The *What's Next* Report

Each Emergency Response Group addressed:

- Background Issues Relevant to Their Fields
- Consensus Points for Future Collaboration
- Potential Obstacles to NG9-1-1
- Desired benefits
- Potential Data Points/Capabilities to be Prioritized
- Process for Moving Forward



What's in the *What's Next* Report?

- Safety is a top concern.
- Response-related information should be prioritized.
- Overload should be avoided.
- Interoperability is a key consideration.
- Importance of uniform standards underscored.
- NG9-1-1 should be considered a matter of national importance for emergency responder groups.

What's in the *What's Next* Report?

- Rural agencies' needs must be considered.
- Particular consideration must be paid to the needs of hearing-impaired citizens.
- Stakeholder education is viewed as essential.
- A clear process for future collaboration is likely to build support and buy-in from stakeholder groups.
- Emergency responder agencies will likely require assistance with costs.

What's Next for *NG9-1-1* What's Next?

- Continued Collaboration
- National Forum for Additional Discussion
- Federal Efforts
- Private Sector



TSAG Public Safety Track – 1 p.m.

Law Enforcement ERG, *Bay 1A*

Moderator:

Sgt. Dan Dytchkowskyj, *TSAG, National Sheriffs' Association*

Speakers:

- Jim Misener, *TSAG, ITS America—Safety Forum*
- Nancy Pollock, *TSAG, Association of Public-Safety Communications Officials (APCO) International*



TSAG Public Safety Track – 1 p.m.

Transportation Operations ERG, Bay 1B

Moderator:

John Corbin, *TSAG, American Association of State Highway and Transportation Officials (AASHTO)*

Speakers:

- Tom West, *TSAG, University Transportation Centers*
- Bill Hinkle, *TSAG, National Emergency Management Association (NEMA)*



TSAG Public Safety Track – 3 p.m.

Fire & Rescue ERG, *Bay 1A*

Moderator:

Mike Brown, *TSAG, International Association of Fire Chiefs (IAFC)*

Speakers:

- TJ Nedrow, *TSAG, National Volunteer Fire Council (NVFC)*
- Skip Yeakel, *TSAG, American Trucking Association*
- Jim Goerke, *TSAG, National Emergency Number Association (NENA)*



TSAG Public Safety Track – 3 p.m.

Emergency Medical Services ERG, *Bay 1B*

Moderator:

Ted Delbridge, MD, *TSAG, National Association of Emergency Medical Service Physicians*

Speakers:

- Dia Gainor, *TSAG, National Association of State EMS Officials*
- Rick Comerford, *TSAG, International Association of Emergency Management (IAEM)*
- Jim Goerke, *TSAG, National Emergency Number Association (NENA)*



Know More

- Download the Report
 - www.tsag-its.org
- Talk with a TSAG Member
 - Breakout sessions
 - Throughout the conference
 - Members listed on TSAG Web site
 - dgainor@tsag-its.org

