Next Generation 9-1-1
Strategies, Considerations and Options

Homeland Security

NCC

National Coordinating Center for Communications

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Topics to Cover

- **NG9-1-1 – What it means may vary**
- **Technical Basics – New Terminology**
- **Issues that need to be on the radar**
- **Sensible decisions for your region**

How will NG9-1-1 Systems Be Different?

- **IP-Based: components/personnel can be located anywhere**
- **Many new communications inputs**
- **Standard interfaces will make it possible for disparate systems, PSAPs and authorized agencies to interoperate**

So…just what is “NG9-1-1?”

- Public Safety Communications is undergoing tremendous change.
- The transition from circuit switched technology to IP networks and Next Generation 9-1-1 has begun, leaving PSAP’s and Telecommunicators to wonder, “What is NG9-1-1 and what does it mean to me?”
- Next Generation systems will be a “network of networks” providing connectivity between PSAPs on a network within a specified geographic area to other networks both regionally and nationally.

Broadband capabilities are key

STANDING UP A SECURE BROADBAND IP NETWORK AND INTERCONNECTING PSAPS AND OTHER AGENCIES

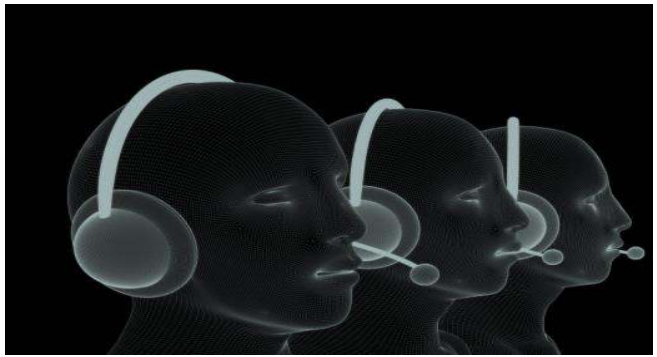
Agencies share resources such as CAD, RMS, email &Internet applications

Building a Network

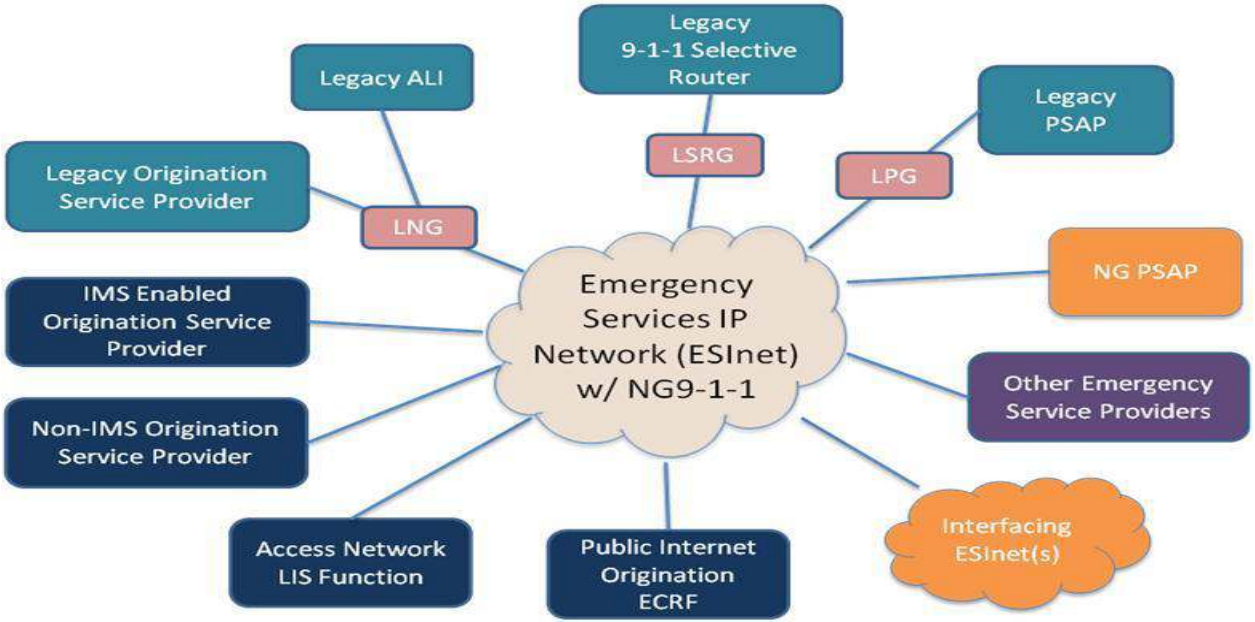
- Does your state currently operate a secure IP network that could be used for emergency services or for delivery of 9-1-1 calls?
- Have you assessed requirements for bandwidth to assure that the current network will handle future traffic?
- How will it be managed/governed in an environment with overlapping jurisdictions?

What Is i3 Next Gen 9-1-1

- i3 is the NENA architecture for a system of 9-1-1 services, functional elements and databases that run on an Emergency Service IP Network (ESInet).
- 9-1-1 calls will be routed via geospatial databases.
- ATIS is also working on an IMS based Architecture for ESInets.
- Eventually, these will replace E9-1-1 capabilities while retaining the functions in place today.



Simplified view of NG9-1-1 environment



ESInets

- Fundamental to the formation of NG systems is the creation and deployment of Emergency Services IP Networks, or ESInets.

- The ESInet is indeed a network of networks designed to achieve specific Quality of Service (QoS), Security and reliability levels while facilitating enhanced call routing and delivery.

ESInets

- In addition the ability to reroute calls to, and share data with, any PSAP served by the ESInet is a benefit of the transition.

- In spite of the measurable benefit to making the transition, many PSAPs are finding that they are limited by equipment and networks incapable of providing a realistic evolution to NG9-1-1.

NG9-1-1 Elements

Systems & Functionality

NG9-1-1 Systems are made up of Functional Elements (FE) that will provide multiple features & capabilities. An FE does not have to correspond to a specific product or position in a PSAP.

NG9-1-1Functional Element Examples

Dispatch	ECRF
Call Handling	ESRP
Mobile Data	BCF
Incident Creation	PRF
Logging & Recording	LVF
GIS	

Beware of legacy 9-1-1 terms that are limited to only one function

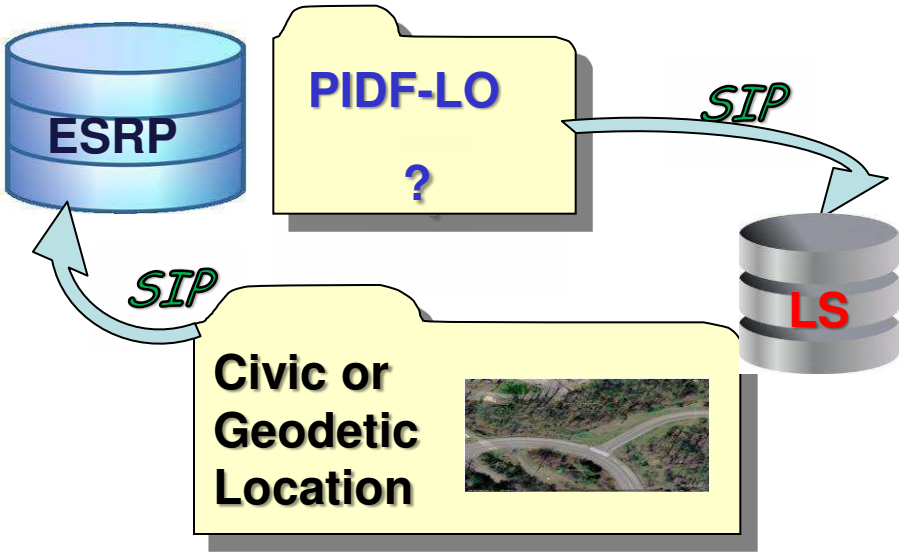
ESRP & PRF

Emergency Service Routing Proxy

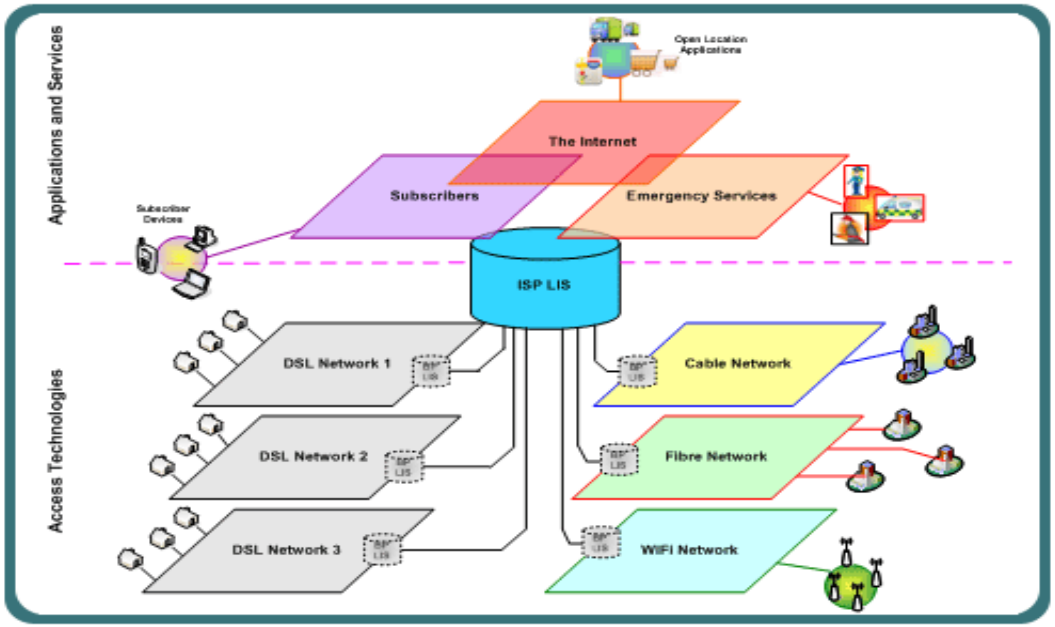
Policy Routing Function

The Keys to the City

ESRP *queries the* LS (Location Server)



LS-Location Server

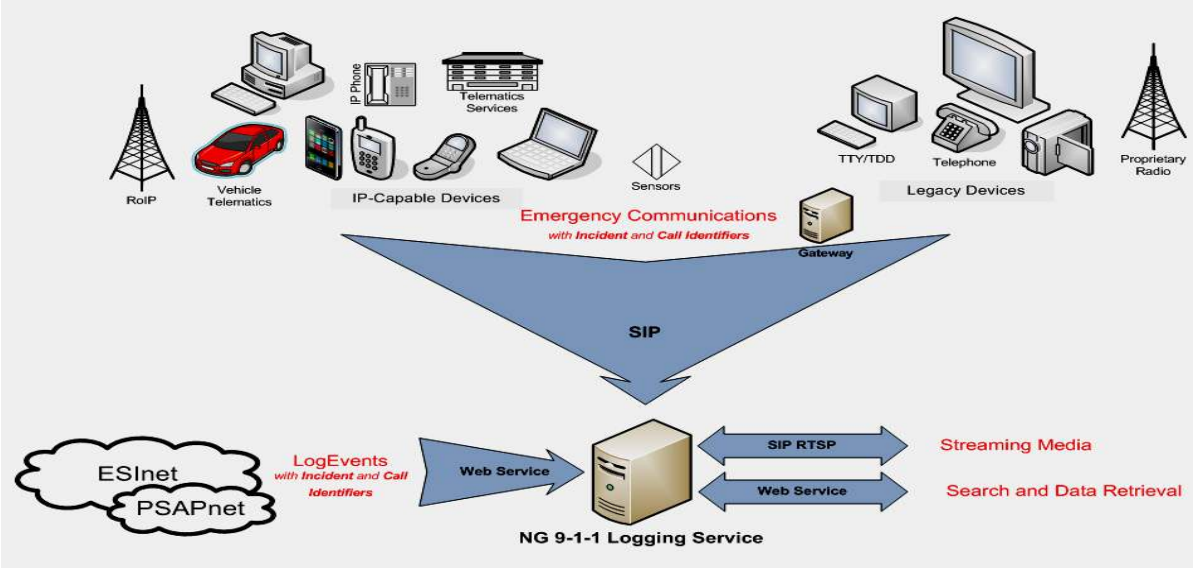


Everything Else
Left side
Apt A 4th floor
Suite 502 5th floor SE corner of Bldg Caution Hazardous materials

ESRP *queries the* ECRF (Emergency Call Routing Function)

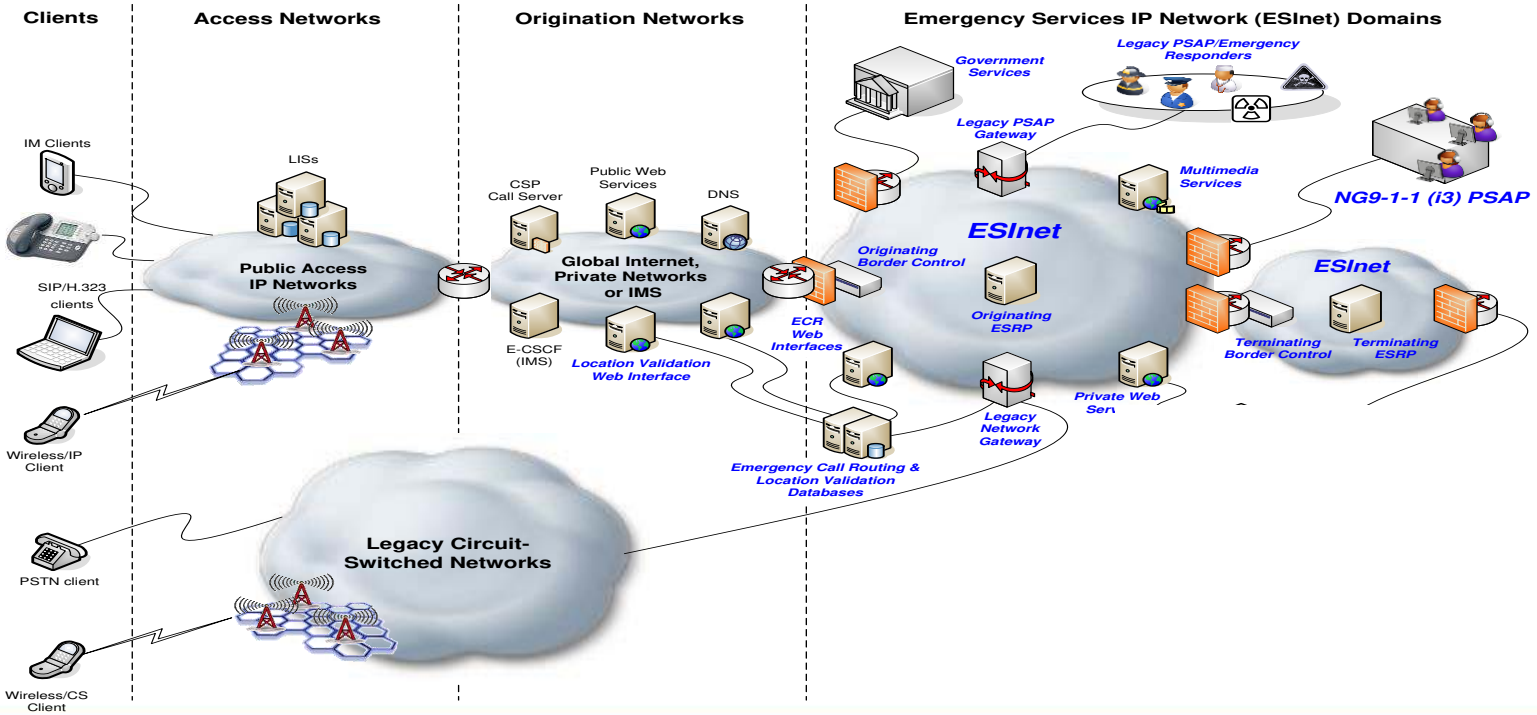
NG 9-1-1 Logging Services

Logging Function



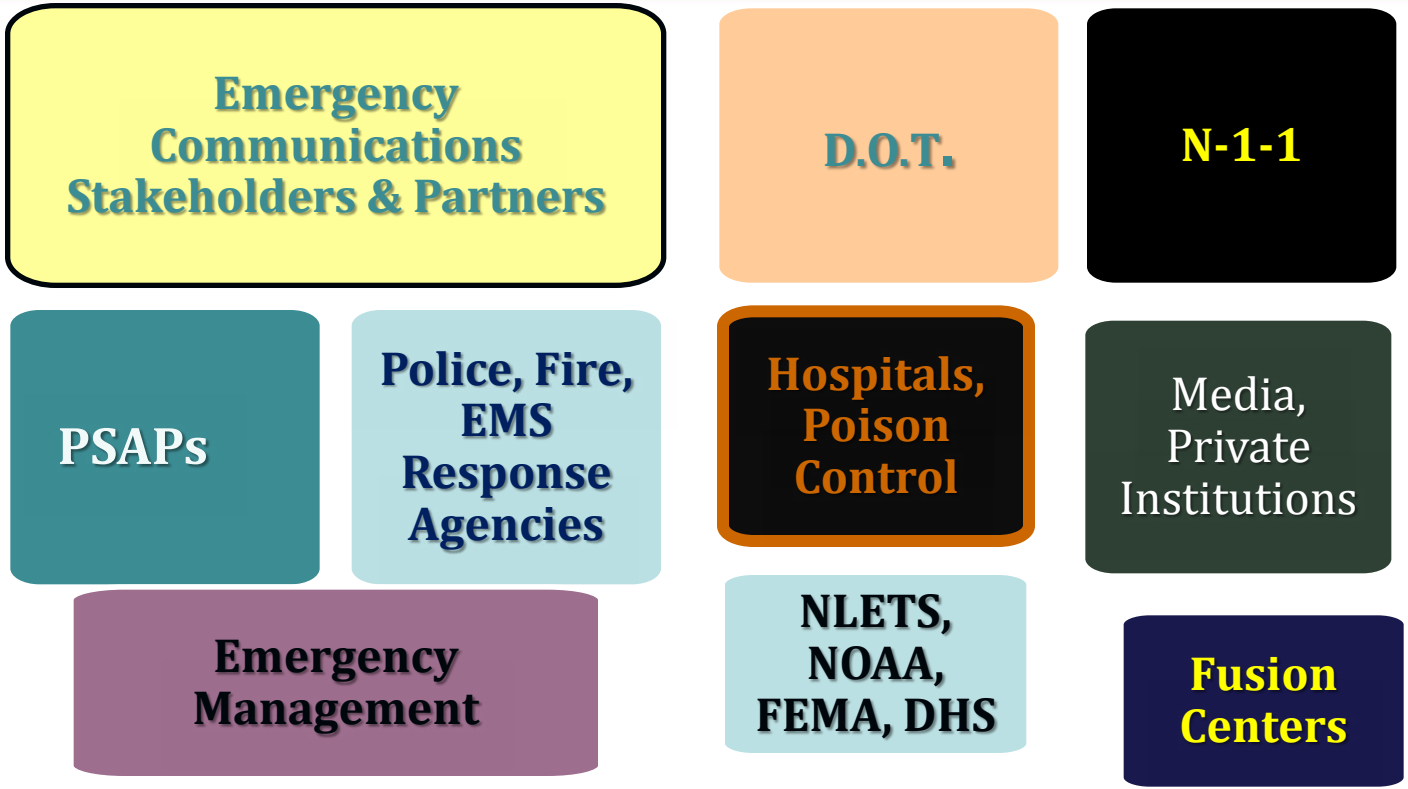
Cybersecurity

NG9-1-1 Logical Flow and Options



How do you position your agencies to transition to a *fully featured* NG9-1-1 system?

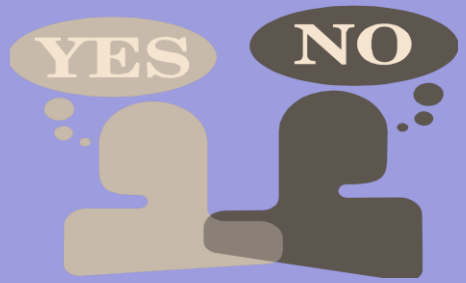
The devil is in the details


Emergency Communications Stakeholders & Partners
D.O.T.
N-1-1
PSAPs
Police, Fire, EMS Response Agencies
Hospitals, Poison Control
Media, Private Institutions
Emergency Management
NLETS, NOAA, FEMA, DHS
Fusion Centers

Service Provider Stakeholders

Who are the origination & access network providers that will be involved?

Are they ready to move forward with NG9-1-1?



Governance Issues

Funding

System Management

Who will be the designated 9-1-1 system manager?

At what levels will contracted vendors be required?

Project Management Basics

What is the Common Denominator During an Emergency?

ALL Emergencies are LOCAL.

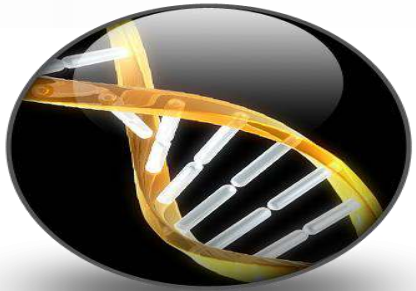
Interoperability of both voice and data services is critical as incidents unfold and expand.

Next Generation services can provide that interoperability

Collaboration is Required

Managing data, coordinating services at all levels, and paying for them all require vision, leadership and a willingness to work collaboratively.

NG9-1-1 Transition



Evolution not Revolution

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QUESTIONS?

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