



**Intelligent Transportation Systems**  
U.S. Department of Transportation



# U.S. DOT Next Generation 9-1-1 Initiative

May 9, 2008



## ***Purpose of Briefing***

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- **Overview of Next Generation 9-1-1 Initiative**
- **What is Next Generation 9-1-1?**

The “Next Generation” of 9-1-1 will enable the general public to make a 9-1-1 “call” (transmitting real-time communication – voice, text, or video) from any wired, wireless, or Internet Protocol (IP)-based device, to the Public Safety Answering Point (PSAP), and enable digital data sharing with the emergency communication network.



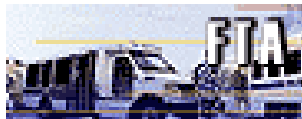
## ***Intelligent Transportation System Joint Program Office***



**The JPO coordinates the ITS program and initiatives among:**



Federal Highway Administration,  
Federal Motor Carrier Safety Administration,  
Federal Transit Administration,  
Federal Railroad Administration ,  
National Highway Traffic Safety Administration  
Maritime Administration.



In 2004 the ITS Management Council reorganized the functions of the ITS program to focus on 9 particular areas.

**The NG9-1-1 Initiative is one of these 9 Major Initiatives.**



# The Current 9-1-1 System



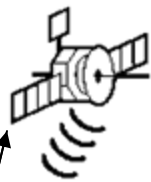
1968:



Basic 9-1-1:

- Copper Land Line
- Analog Technology

1990's:



Enhanced 9-1-1:

- Phase I
- Phase II

2000's:



??? 1968





# Problem Statement





## ***NG9-1-1 Initiative***

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### **Long Term Goal:**

To enable the general public to make a 9-1-1 “call” (any real-time communication – voice, text, or video) from any wired, wireless, or Internet Protocol (IP)-based device, to the PSAP, and enable data sharing with the emergency communication network.

### **Major Milestones:**

- Architecture and high-level design for NG9-1-1 System
- Proof of Concept Demonstration
- Transition plan for NG9-1-1 implementation



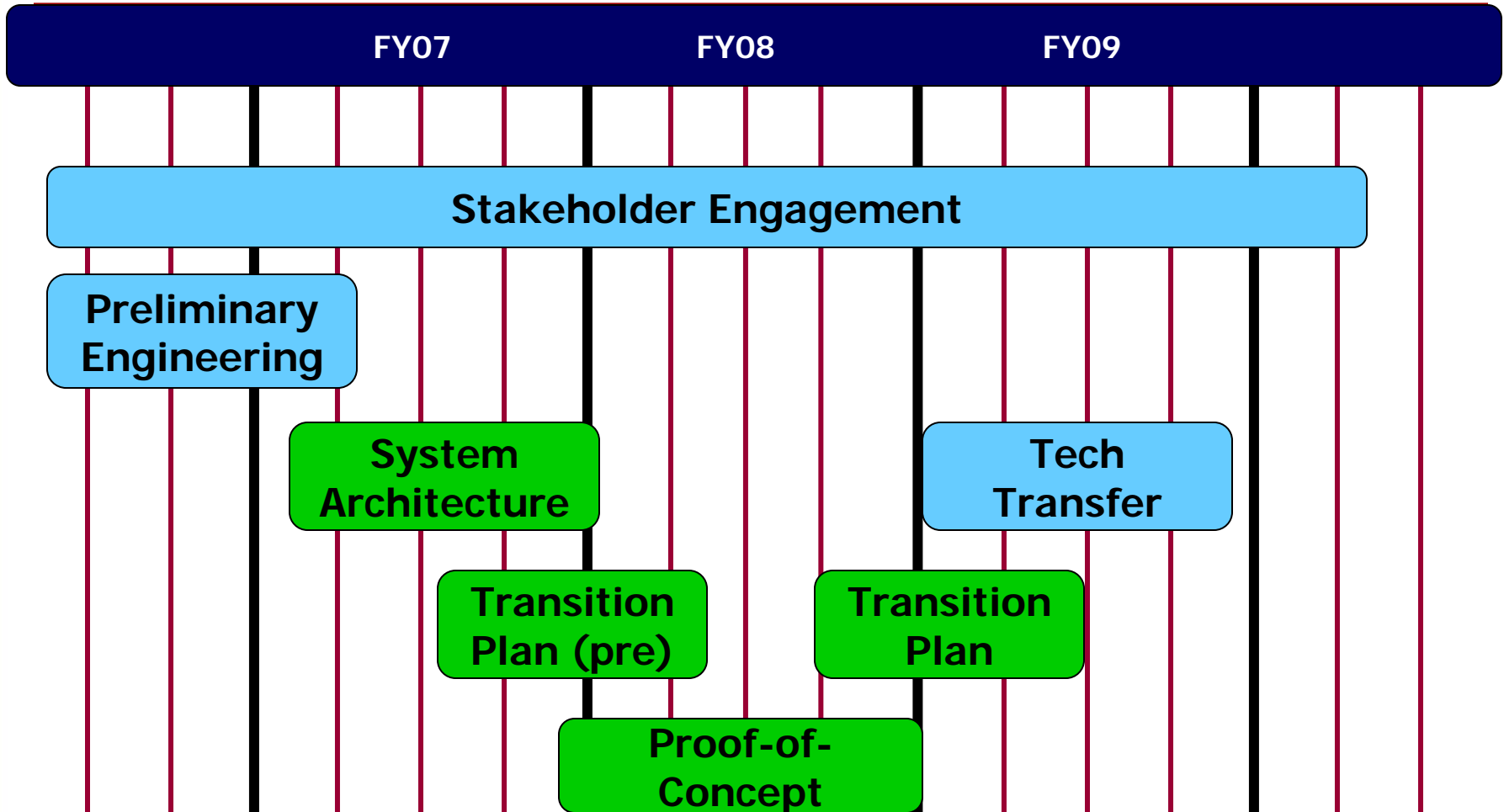
## NG9-1-1 Initiative



Today's 9-1-1	Next Generation 9-1-1
Primarily voice calls via telephones	Voice, text, or video information, from many types of communication devices
Minimal data available	Advanced data sharing is automatically performed
PSAP services – access, transfer, backup – are local only	Enhanced “long distance” capabilities; physical location of PSAP becomes immaterial
Limited capability for emergency notification	Location-specific emergency alerts possible for any networked device



# NG9-1-1 Initiative Roadmap

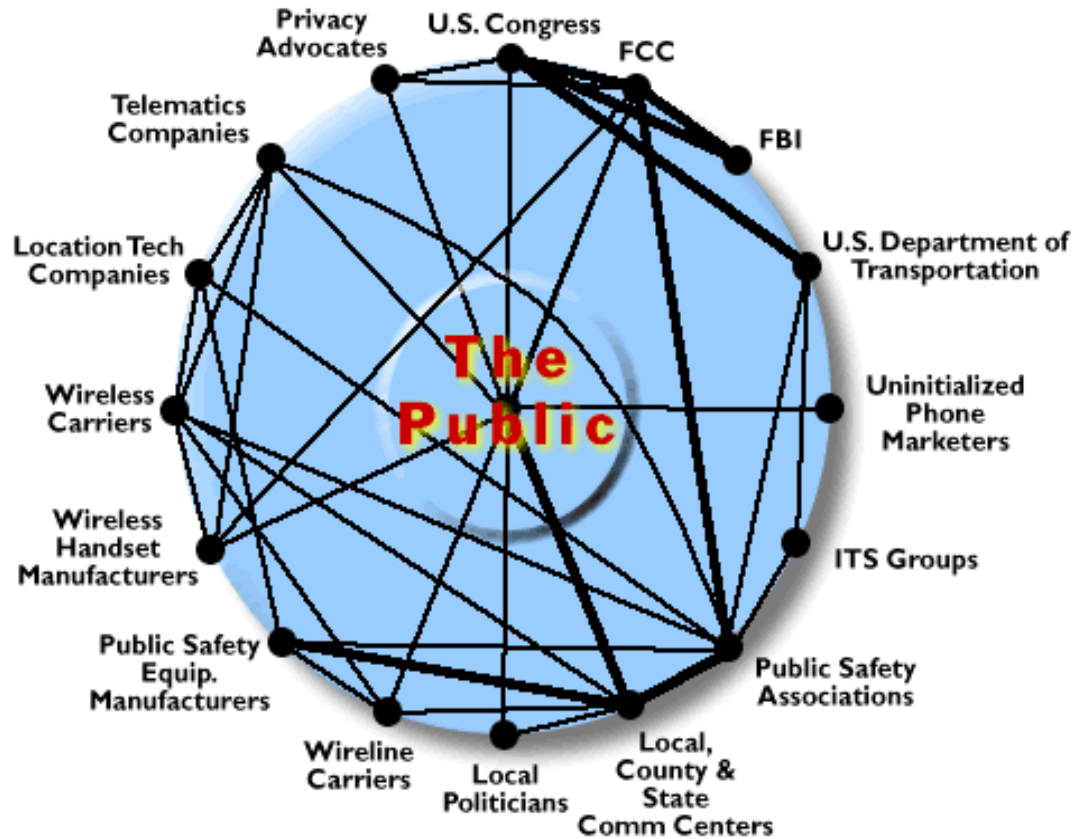




# The Stakeholders



## The Web of Wireless 911 & Location Technology





## Project Team: 4 Major Tasks



- **Task One**

Booz | Allen | Hamilton

- Revise Concept of Operations
- Define Functional Requirements
- Design Architecture



- **Task Two**

- Preliminary Analysis of Cost, Value and Risk
- Report on Critical Deployment Issues

- **Task Three**

- Proof of Concept

- **Task Four**

- Transition Plan



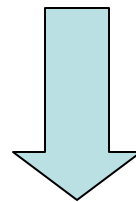


## ***Tasks of the NG9-1-1 Team: Project Status***



### **Task 1: System Architecture Development [Completed]**

- Revised Concept of Operations (ConOps)
- Define functional requirements
- Architecture design



### **Task 3: Proof of Concept [Currently Underway]**

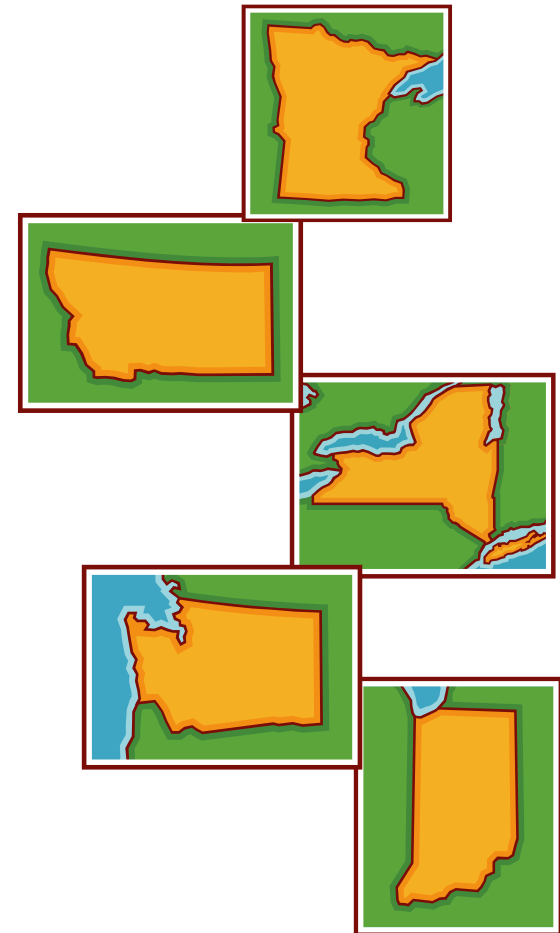


## Proof of Concept



### Combination Live/Lab

- 3 Labs
- 5 PSAPs:
  - St. Paul, MN
  - Helena, MT
  - Rochester, NY
  - King Co. (Seattle), WA
  - State of Indiana





# Proof of Concept Participants





## ***Scope of the Proof of Concept (POC)***

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- **Testing of Selected Requirements:**
  - Ability to receive voice, video, text (IM, SMS) and data
  - Support for deaf/hearing-impaired accessibility
  - Caller's location identification
  - Transmitting telematics data (Advanced Automatic Crash Notification) like speed, vehicular rollover, crash velocity
  - Call routing based on caller's location
  - IP networking and security



## ***NG9-1-1 Related Standards Organizations***



- US DOT hosted International SDO Emergency Service Workshop
  - April 2007
- Internet Engineering Task Force (IETF)
  - Session Initiation Protocol (SIP)
  - LoST: A Location-to-Service Translation Protocol.
- Alliance for Telecommunications Industry Solutions (ATIS)  
Emergency Services Interconnection Forum (ESIF)
  - Emergency Services Messaging Interface (ESMI)
  - Emergency Information Services Interface (EISI)
- 3GPP (a partnership of ETSI, ARIB/TTC, ATIS, CCSA and TTA)
- IEEE (802.11; 802.16)

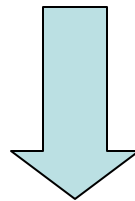


## ***Tasks of the NG9-1-1 Team: Project Status***



### **Task 2: Transition Analysis**

- Preliminary Analysis of Cost, Value & Risk
- Report on Critical Deployment Issues

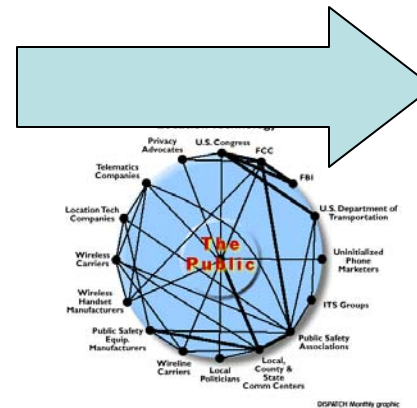


### **Task 4: Final Transition Plan**



# Transition Plan

- **Cost, Value & Risk**
- **Transition Issues**
  - Funding
  - Operations
  - Standards & Technology
  - Governance & Policy
- **Deployment Approaches**
  - Independent, Unilateral (bottom up)
  - Coordinated, Intergovernmental (top down)





- **Strategies**
- **Options**
- **Models**



## ***NG9-1-1 Initiative Documents Available:***



<http://www.its.dot.gov/ng911>

- Revised Concept of Operations
- Functional Requirements
- Architecture Design
- Preliminary Analysis of Cost, Value and Risk
- Transition Issues Report
- Human Machine Interface Display
- Proof of Concept Deployment Plan
- NG9-1-1 Transition Issues Report
- Data Acquisition and Analysis Plan 
- Preliminary Transition Plan 



## *After November 2008...*



Requirements



Standards



Transition Plan



Acquisition Tools



**National**



**Office**

- DOT / DOC – Joint Program
- Housed @ US DOT / NHTSA



## *Then What?*

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- More information is not necessarily better.
- Bottom line: Getting the right information to the right person at the right time.
- What information is the right information for law enforcement?
- Do you want to pull information or do you want information pushed?
- How will those decisions be made?



***Thank you!***



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Email Distribution List?***

**<http://www.its.dot.gov/ng911>**

Booz Allen Team  
[ng911wg@bah.com](mailto:ng911wg@bah.com)

Laurie Flaherty  
[laurie.flaherty@dot.gov](mailto:laurie.flaherty@dot.gov)  
(202) 366-2705