Goals / Objectives

• Local Control, Budgets, and History Shape Current 9-1-1 / NG9-1-1 Deployments
• There Is No “Standard” 9-1-1 / NG9-1-1 Deployment
• Legacy 9-1-1 in Transition
• i3 / NG9-1-1 – Challenges and Opportunities
• GIS in Transition
• Discussion
Intrado Services

- Innovative leader and pioneer of 9-1-1 technology solutions since 1979
- Provide the foundation of the nation’s 9-1-1 infrastructure
- Next Generation 9-1-1 ESInets serving nearly 22 million US population
- Support the delivery of 260 million calls to 9-1-1 per year
- Processed more than 3 billion 9-1-1 calls
- Provider of 9-1-1 technology for:
  - ILECs, CLECs, wireless carriers, satellite & cable operators,
  - VoIP & Telematics providers, public safety, and
  - State and Local government agencies
- 9-1-1 voice, data and call handling equipment to 6,000 PSAPs
Wireless 911 Oversight - 2007 to Current

Local Program
State Fee/Oversight & Local
State Program
Combo
No Surcharge/Local Program

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Today's Typical Legacy 9-1-1 Environment

Subscribers

- Wireline
- Wireless
- VoIP

Communication Service Providers

- End Office
- MSC
- Gateway

9-1-1 Service Provider

- Selective Router
- SRDB
- ALI Database

PSAPs

- Provisioning
- GIS Data

9-1-1 Data Management

- MSAG, ESNs, SRDB, Subscriber records
- Data Error Management

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NENA i3 Target Architecture
Context of NENA i3 Functions – Changing Responsibilities
Geographic and Address Data

- Coordination of Address and Geographic Data
  - GIS Coordinators (e.g., County)
  - Postal Addresses (Civic or textual)
  - Call Taking and Dispatch (CAD)
  - ALI and MSAG (transitional)
  - Enhanced Data Services

- Routing Data
  - GIS Polygons (with Latitude and Longitude)
  - Equivalent (or better) results to current Selective Router database

- Public Internet Interconnection
  - ECRF / Forest Guide
  - Hierarchical Routing Rules

✓ GIS with 9-1-1 attributes
✓ GIS data coordination is challenging
✓ Need “dispatch-able” addresses
✓ Different GIS data can cause confusion across applications
NENA i3 Vision (simplified)
SS7 Configuration and Distributed Functions
Solution Architecture

Emergency Call Management Complex (ECMC)
Core Sites
- Call Routing Application
- Databases
- i3 Functions
- Logging
- Security and Network
- Hosted Applications

Aggregation Sites
- LNGs
- Rtr
- TDM

Originating Service Providers
- Legacy Selective Routers
- Rtr
- TDM

Emergency Call Management Complex (ECMC)
Call Routing Application
Databases
i3 Functions
Logging
Security and Network
Hosted Applications

IP Network

CAMA PSAPs
- Rtr
- LPGs
- CAMA Trunks

IP PSAPs
- Rtr

IP into both ECMCs

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Network Responsibilities

- Neighboring Legacy SR or ESInet
- 9-1-1 Calls
- Originating Service Providers
- Legacy Network Gateways
- Intrado NOC
- Transport NOC
- Intrado ECRC
- RTR PSAPs
- CAMA Gateways
- IP Selective Router or NENA i3
- NG9-1-1 Data Services
- ALI Data Management
- Call Routing Complex
- Media Servers
- Copyright Intrado, Inc, 2015
Hosted Call Handling Connection Model
“Smart” Operating Environment

The Right Data to the Right Person at the Right Time!

- 9-1-1 Call Taking
- Dispatch
- First Responders (NPSBN Users)
- Communication Service Providers
- Consumer Data
- Machine-to-machine Sensors
  Smart Vehicles / Telematics
  “Connected Car”
GIS Tools and Services

Manage 9-1-1 attributes with your GIS data and migrate from current operating models to Next Generation 9-1-1
Tabular Address to GIS Data Management

- Numerous Validations
  - Address gap
  - Address overlap
  - Street point in wrong direction
  - Empty geometry
  - Address range parity
  - Address range order
  - Structure street parity
  - Structure address order
NG9-1-1 GIS Data life Cycle

Updates and Synchronization

9-1-1 GIS Database

Data Problems Identification

9-1-1 Usage

- Address Validation
- Call Routing (ESN replacement)
- Map Display (call taking and dispatch)
- Emergency Service Dispatch
- Discrepancy Tracking
- Jurisdictional Sharing

9-1-1 GIS data management programs are complex
Discussion