

Crafting 9-1-1's Legacy of Tomorrow

Michigan Forum on Next Generation 9-1-1
and Other Emerging Technologies

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Changes in Technology

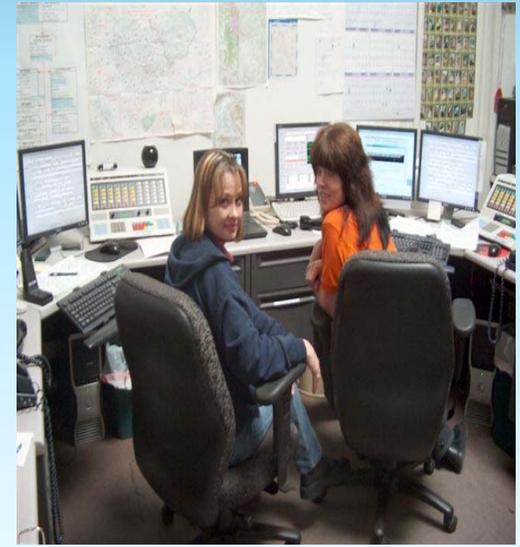
1968 to 1970



1970 to 2008



2009 to the future



- **Any Call...From Anywhere...On Any Device.**

Changing Demographics of 9-1-1

- **Increased citizen expectations with technology evolution**
- **Over 240 million 9-1-1 calls placed annually**
- **Over 6,000 PSAPs in North America**
- **Growth and transition in wireless subscribers**
 - 296,000+ wireless 9-1-1 calls daily
 - 50% or more 9-1-1 calls originate from wireless device
 - 135.2 billion text messages monthly
 - Reduction in *wireline* subscribers (20.2% of households)
- **Growth in VoIP subscribers**
 - 8 million new subscribers in past 12 months
 - 10% or more of households by end of 2009
- **Growth of telematics markets**
 - Once a luxury, now standard equipment
 - Native delivery of calls to PSAPs

Technology Has Changed Public Safety's Needs



Wireless

VOIP

Text

Pictures

Mapping

Misroutes

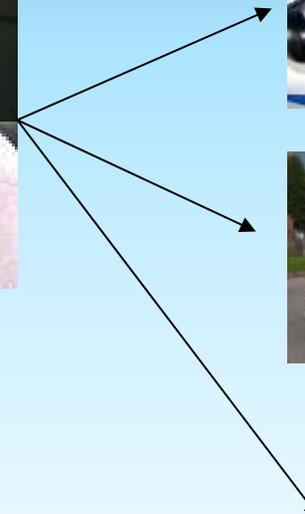
Cameras



Public Policy

- Ensure that E9-1-1 Systems are Viable
- Expands Reliability, Redundancy, and Diversity
- Protect E9-1-1 Service Levels
- Meet Demands for Public Safety Response
- Prepared for Future Technologies
- E9-1-1 Service Standards

Interoperability?



Interoperability means getting all available data with voice call to Public Safety; to be used as appropriate

Three C's of Next Generation 9-1-1; PLUS a few

- **Connectivity**
 - Meet Consumer's Expectations
 - Critical Success Factors
- **Convergence**
 - Accept *ALL* devices
 - Open Standards Based
- **Competition**
 - Qualified, Non-Discriminatory Access
 - Points of Interface
- **Collaboration, Cooperation & Communication**

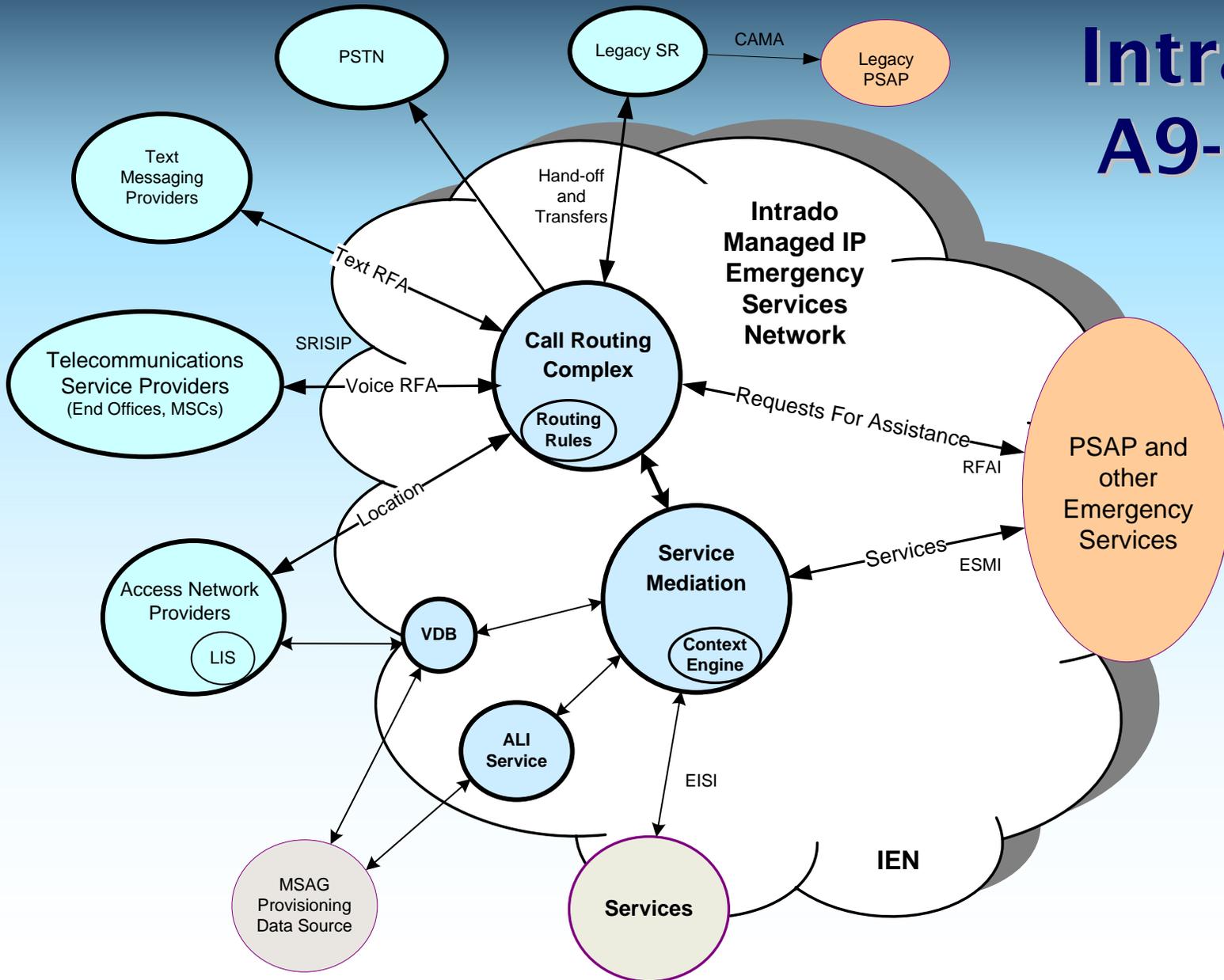
A Plan to the Future

- **Solution & Applications**
- **Industry Standards & Guidelines**
- **Regulatory Aspects**
- **Interconnection**
- **Telematics Today . . .**

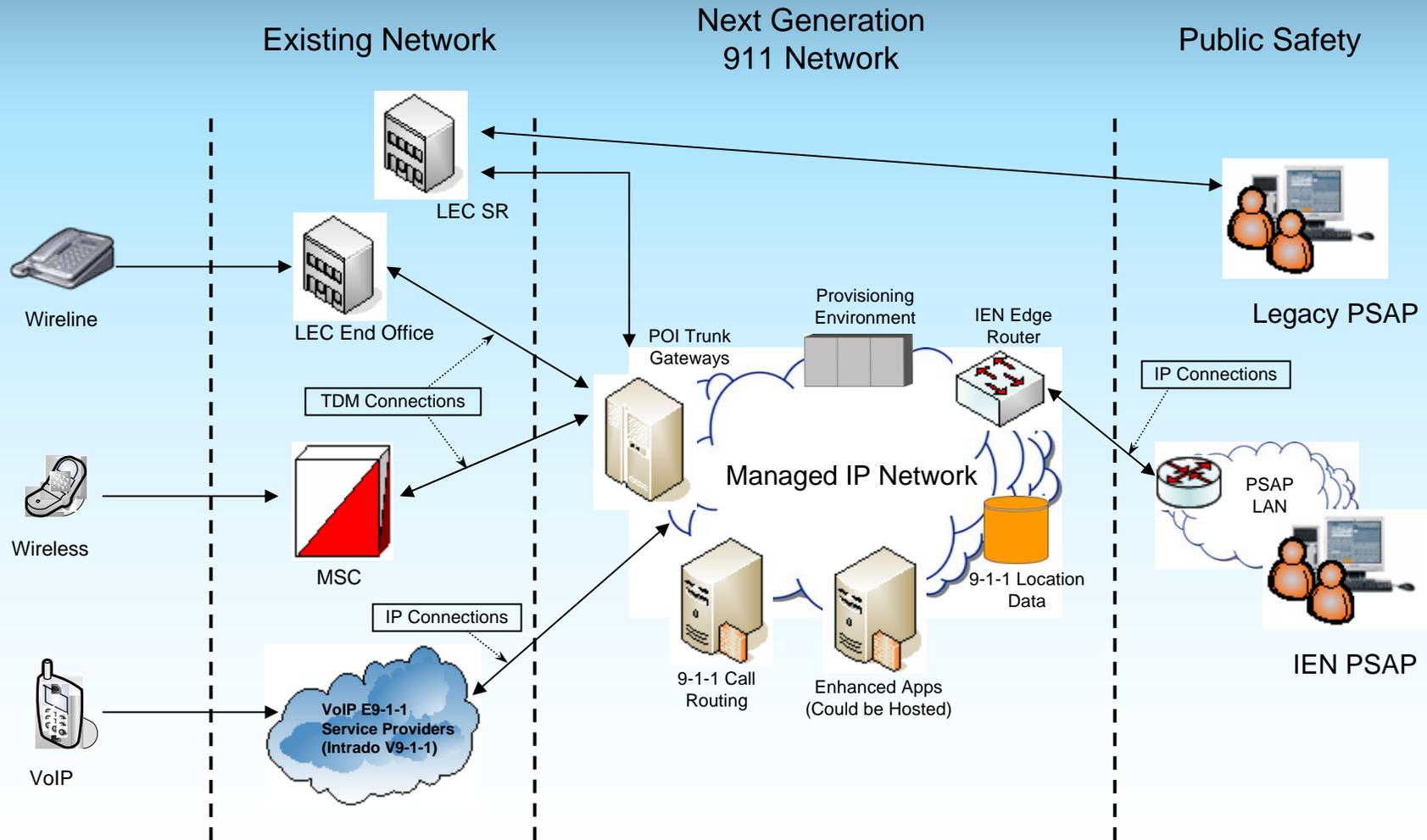
Intrado's NG 9-1-1 Solution

- **Built on nearly 40 years experience with legacy 9-1-1 network**
- **Public Safety Grade**
 - Capable of delivering current and future emergency services
 - Variety of authorized and distributed users
 - Without compromising integrity and security
- **Standards-Based**
 - Non-Proprietary
 - Vendor / Technology neutral
- **Reliable, robust and secure platform(s)**
 - Expand and adjust with specific needs
- **Today and Tomorrow's Emerging Technologies**
 - Public Safety's requirements
 - Public's expectations

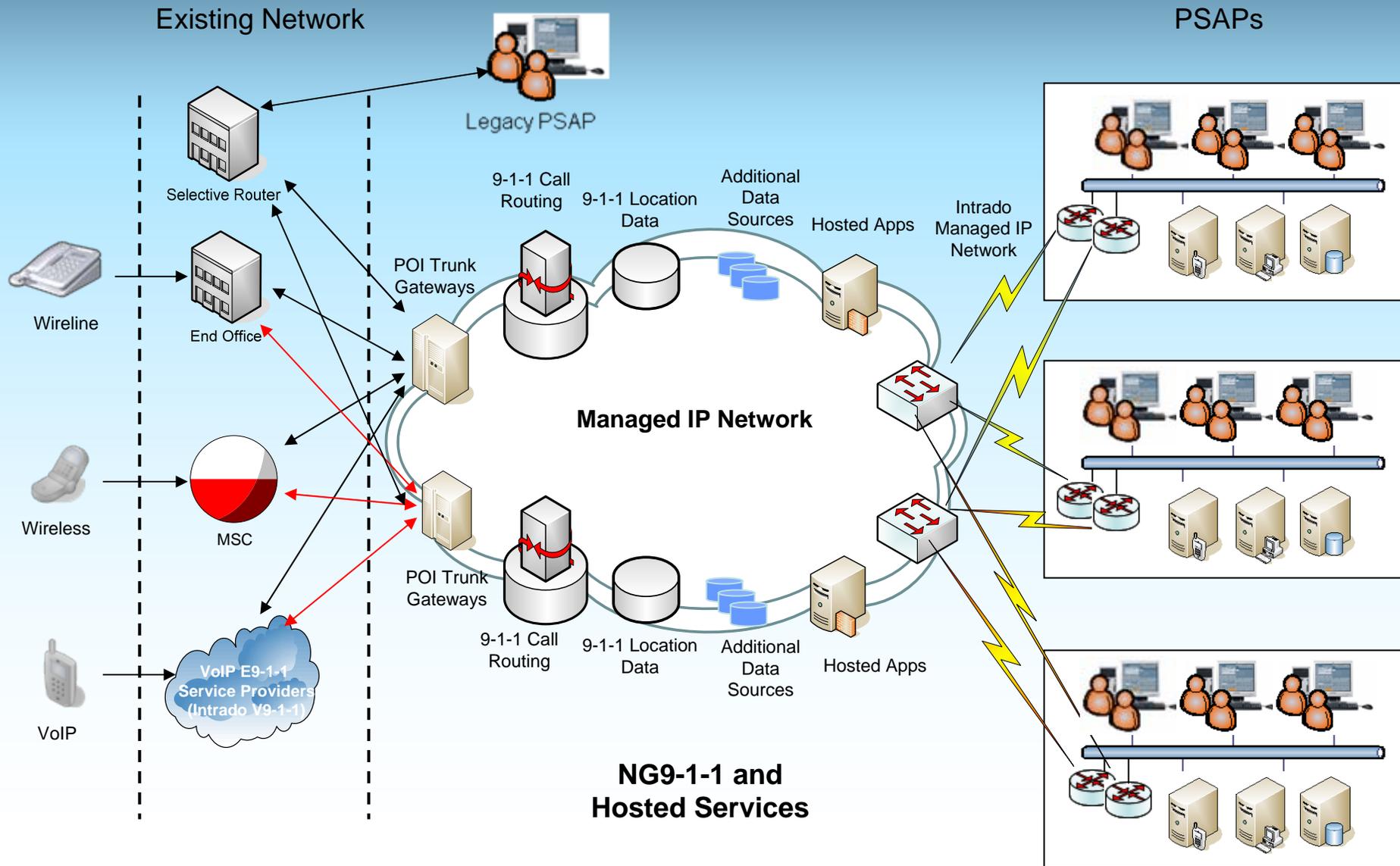
Intrado A9-1-1



Intelligent Emergency Network (IEN) Legacy Interoperability



Transitioning to NG9-1-1



Intelligent Emergency Network® Deployments

- Multiple regional deployments

- AZ AL CO FL NC OH IA VA
WA MN PA TX



- All call types supported



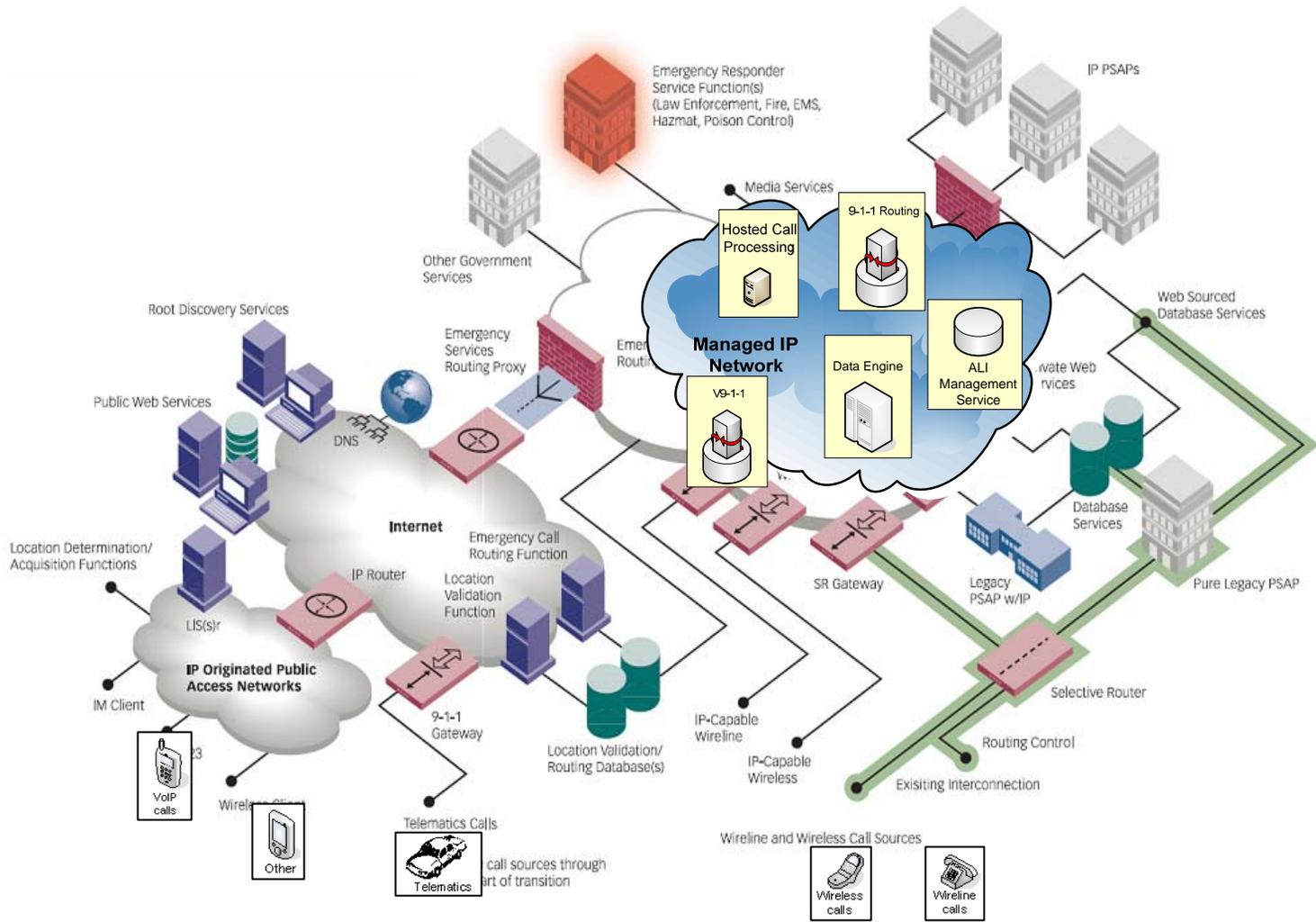
STANDARDS

- **Request for Assistance Interface (RFAI)**
Deliver 9-1-1 Calls from A9-1-1 to PSAP CPE, replaces CAMA trunks.
Standards work has been started at ATIS ESIF, draft document is available
- **Emergency Services Messaging Interface (ESMI)**
Delivery data services to a PSAP and other agencies, replaces legacy ALI interface with a multipurpose services interface. ANSI standard established
- **Emergency Information Service Interface (EISI)**
Enables service providers to connect to an Emergency Services Network and present their service in a controlled manner to PSAPs and other agencies. In this model, ALI is a service. ANSI standard established
- **Selective Router Ingress SIP (SRISIP)**
Accept IP traffic from Telecommunication Service Providers.
Standards work has been started at ATIS ESIF

A9-1-1 currently offers these interfaces

A9-1-1 is the basis for establishing these standards and will evolve as industry standards are finalized

NENA NG9-1-1 and Intrado's Intelligent Emergency Network®



Intrado A9-1-1 and NENA i3

- **All core i3 functions supported within A9-1-1**

- ESINet
 - Emergency Services IP Network
 - ESRF
 - Emergency Services Routing Function
 - ESRP
 - Emergency Services Routing Proxy
 - BCF
 - Border Control Functions
 - LVF
 - Location Validation Function
 - LIS
 - Location Information Server
 - **Managed service model**
- } **Intrado Managed MPLS Network**
- } **Intrado A9-1-1 Routing Services**
- } **Intrado A9-1-1 ALI Services**

Regulatory, Why it's Played a Role

- E9-1-1 is Regulated Today – ANI/ALI/SR
- Service Standards for Access/911 Service Providers
 - Distinction between the Two!
- Qualified Access to E9-1-1 Network
- Interconnection Next Gen to SRs
 - Nondiscriminatory Access
 - Point of Interface
- Support between Legacy & Next Gen 9-1-1
 - Call Transfer with ALI
 - Default Routing

Reliable Wireline E911 Interconnection

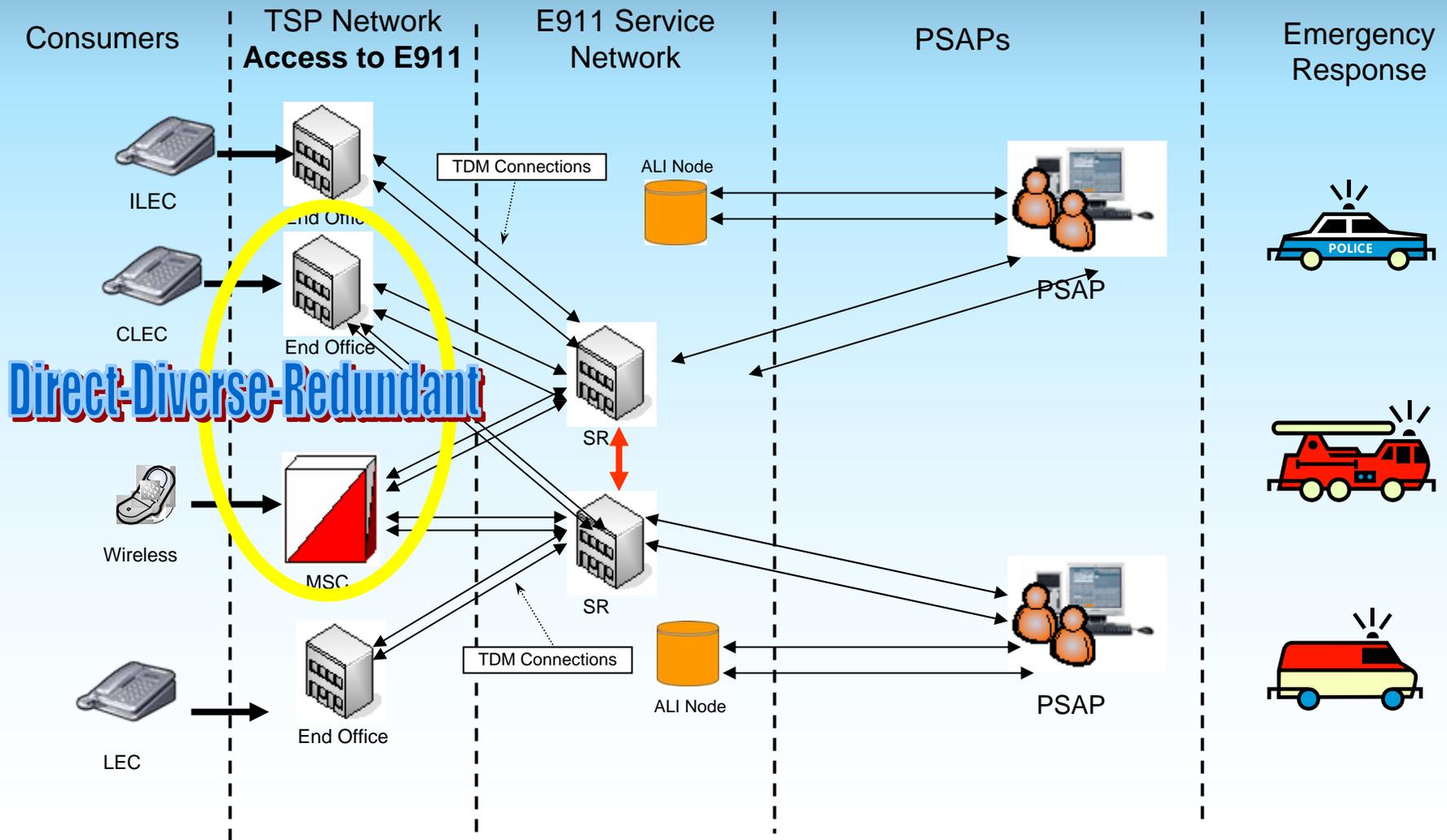


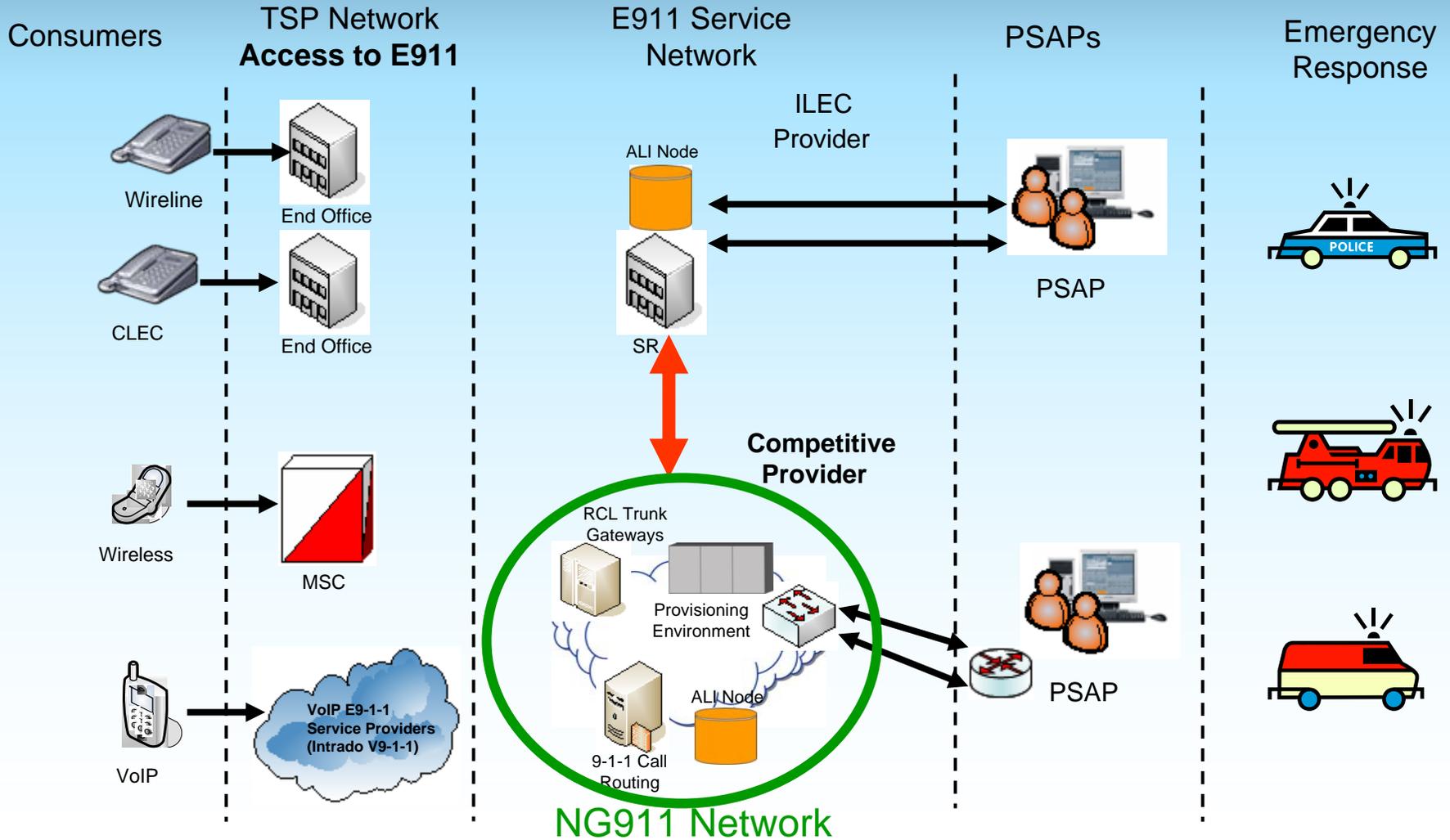
Diagram 2

E9-1-1 is Local Exchange Service

Why is This Important?

- Federal Communications Act – 251 applies
- Competition Exists in E9-1-1 & NG9-1-1
- Interconnection to ILEC E9-1-1 Service Network
- Distinction for Access & Service Network
- Implementation Equal to Current Implementation Standards
 - i.e. All Access Providers
- Point of Interconnection for E9-1-1 & NG9-1-1 Services

E911 System – Competitive Provider



Interoperability & Reliability

- **PSAP Interoperability**

- Inter-Selective Router Call Routing
 - Inter-SR Routing to Adjacent PSAPs – Regardless of LATA
- ALI Interoperability on Call Transfers
 - ALI Display on PSAP-to-PSAP Call Transfer
 - Regardless of LATA

- **Network Reliability**

- Dedicated, Direct Routing of 911 Calls
- Trunk Forecasting – 911 Access Availability
- Authorization for Direct Access to PSAP

Telematics Today . . .

Who are the Players?

- ATX Group
 - Part of Cross Country Automotive
 - BMW
 - Lexus
 - Mercedes-Benz
 - Rolls-Royce
 - Toyota
 - Others
- Ford Motor Company
 - SYNC powered by Microsoft
 - Ford
 - Lincoln
 - Mercury
- Hughes Telematics
 - Chrysler
 - Other Original Equipment Manufacturers (OEMs)
- OnStar
 - Chevrolet
 - Buick
 - Pontiac
 - GMC Trucks
 - Saturn
 - Hummer
 - Saab
 - Cadillac

Two Flavors of “delivery”

- DirectRoute™ for Telematics
- “Bluetooth” via SYNC

DirectRoute

- Working with Telematics Customers to leverage and access associated Peering coverage in place today
- SIP Invite; which includes Latitude, Longitude – Call Center Call Back Number and Incident ID (customer specific)
- Deliver associated 9-1-1 call to the appropriate Selective Router utilizing assigned ESQK (pANI)
- Delivers associated data (X,Y, Incident ID, CBN) to PSAP
- Using VoIP 911 infrastructure to support service today

Sample ALI Display

720-211-2345 pANI (routing number)
VOIP (TLMA) Class of Service ESN: 787

ATX | CCAS Call Center

Incident ID: #123456789

Community Name

lat=+029.647501 lon=-095.448910

Call Back = (800) xxx-xxxx

ATX Call Back Number

NENA Company ID

Your PSAP

TRDO

Academy Police

Regional Fire

Local EMS

Ford SYNC Platform

- “Bluetooth” via SYNC
- Vehicle becomes “paired” with cellphone
- Call to 9-1-1 initiated by vehicle
- “small” delay before dialed
- Call delivered as WHPH2 call to PSAP
- Lat / Lon & Wireless Call Back
- Does not require Third Party Vendor

Summary

- Next Generation 9-1-1 evolving
- Requirements, Expectations dynamic
- States are moving forward
- Active engagement and involvement
- Help to frame OUR legacy

Questions, Thank You!

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