

# Roadmap for Implementing NG911 GIS Data Model, Part 1 | 2.26.2020

**URISA**  
Fostering Excellence in GIS

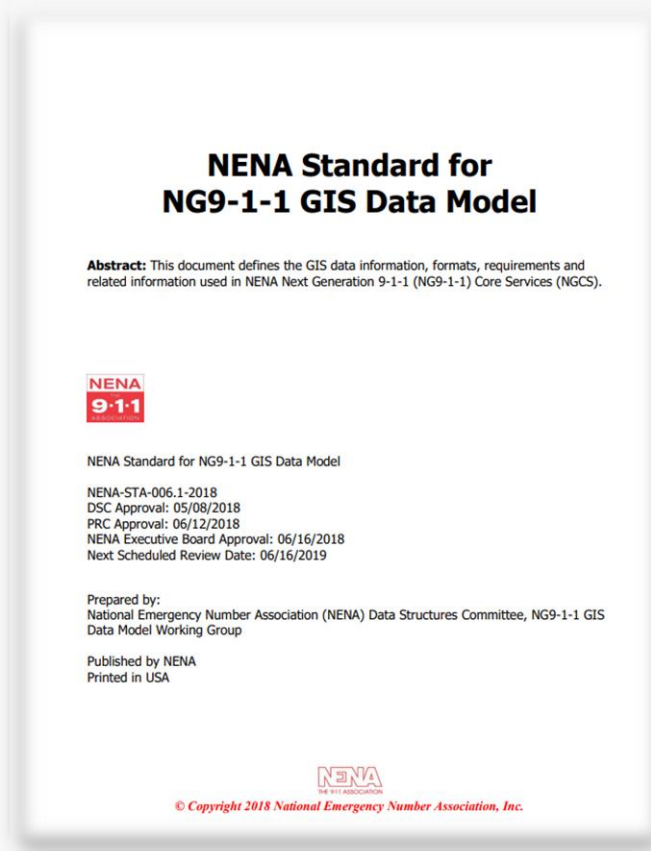
[www.URISA.org](http://www.URISA.org)

# Background

---

# Background – What is the Data Model?

---



<https://www.nena.org/page/NG911GISDataModel>

# Background – Why is it needed?

- Presence Information Data Format-Location Object (PIDF –LO)
  - Civic Location Data Exchange Format (CLDXF)
- Consistency
- Interoperability
- Backwards compatibility

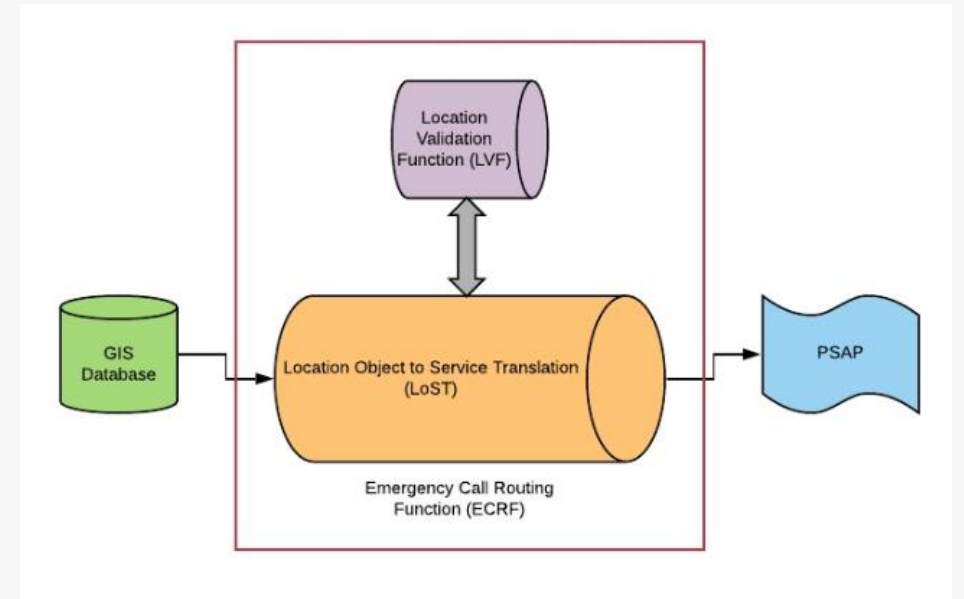
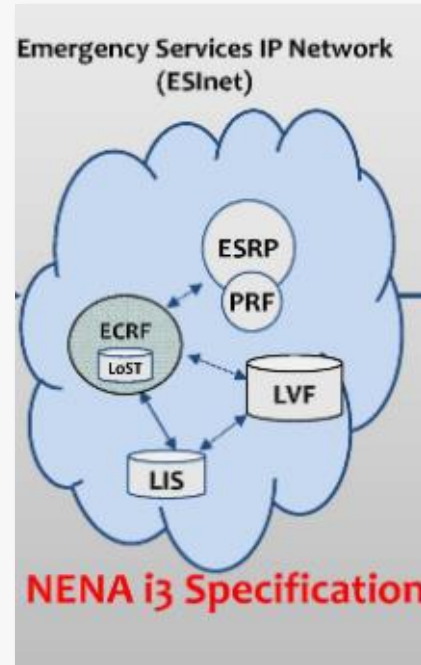


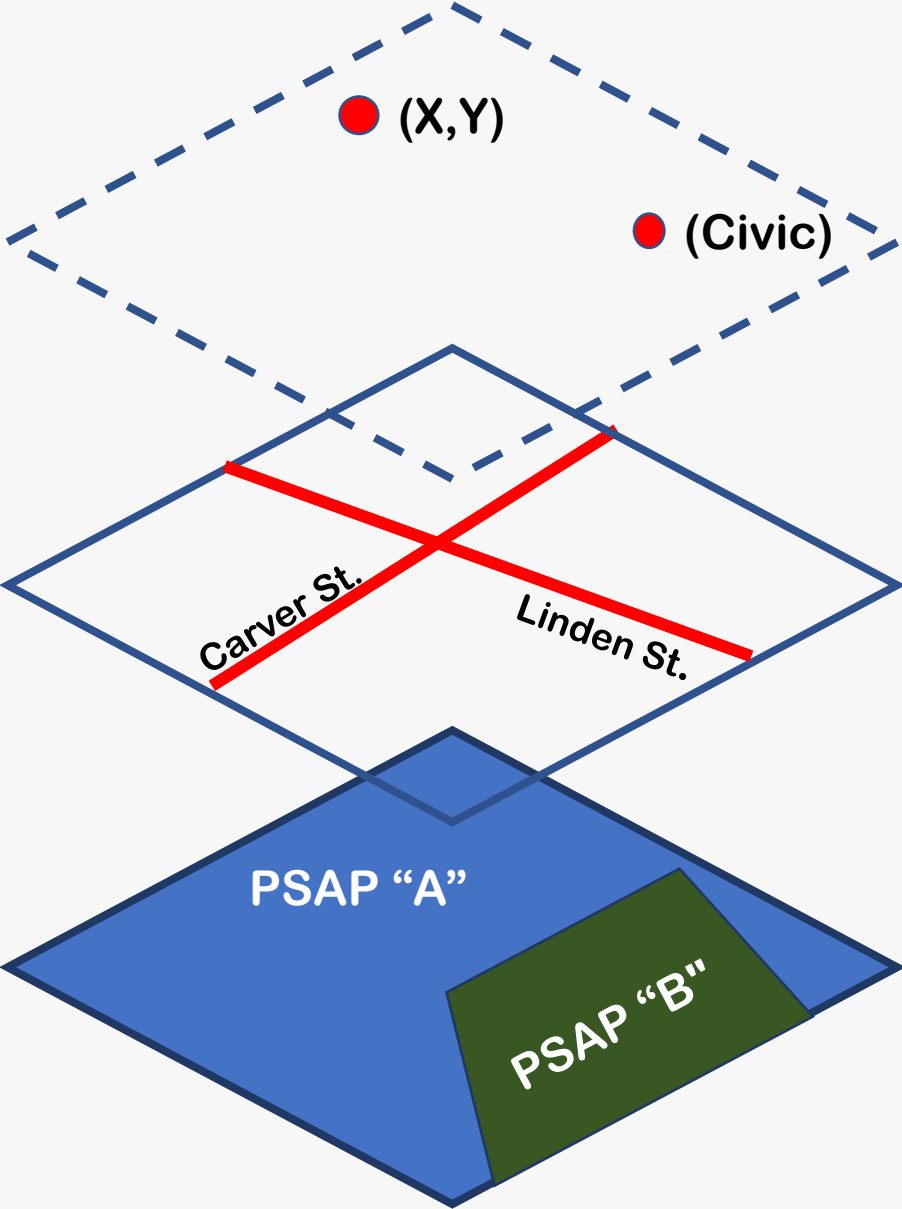
Image source: Steve O'Conor, APCO 2012

# ECRF: Emergency Call Routing Function

- Provides information about responder agencies and routes the initial 9-1-1 call to correct PSAP

# LVF: LOCATION VALIDATION FUNCTION

- Validates civic locations



# The Basics - Metadata

---

- Identification
- Contact
- Quality
- Spatial Reference
- Lineage
- Legal
- Temporal
- Metadata Reference
- Metadata Standard (FCGC)

# The Basics - NGUID

---

- NENA Globally Unique IDs (NGUID)

- Local ID + Agency Identifier

- Example:

Local Road ID = RCL120853

+

Agency Identifier = county.wa.us

= RCL120853@county.wa.us

# The Basics – Spatial Reference

---

- Maintenance = Local
- ECRF/LVF purposes = WGS84

# The Basics – Horizontal Accuracy

---

- NSDI Standard = 1:5000
  - +/- 13.89 feet at 95% confidence



# GIS Data Model - Layers

---

- Required
  - Road Centerlines
  - Site/Structure Address Points
  - Provisioning Boundary
  - Emergency Service Boundary (PSAP, EMS, Fire, Law)
  
- Strongly Recommended
  
- Recommending

# GIS Data Model – Attribute Conditions

---

- Mandatory
  - MUST Populate
- Conditional
  - Does it exist?
    - Yes = MUST Populate
    - No = Leave Blank
- Optional
  - Up to You

## Examples:

NGUID

ESN Left

Service Number

# Provisioning Boundary

---

# Provisioning Boundary

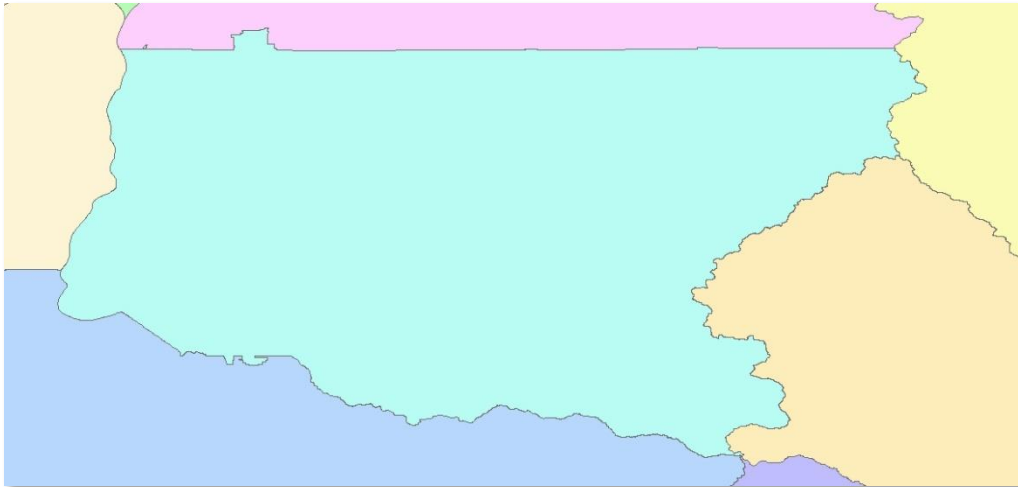
---

*Area of GIS data provisioning responsibility, with no unintentional gaps or overlaps*

- Stakeholders MUST Agree
- Used by ECRF
- Excludes Features Outside Boundary

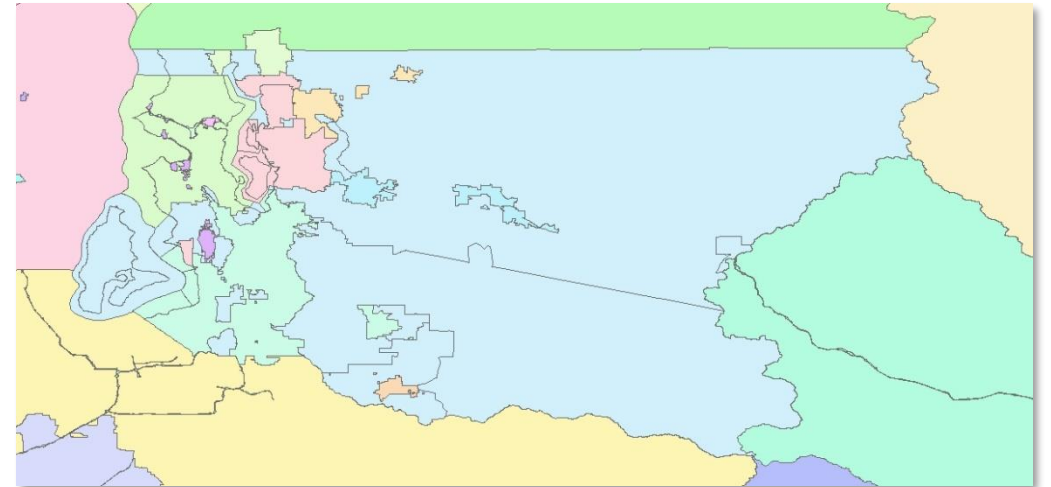
# Provisioning Boundary

Provisioning



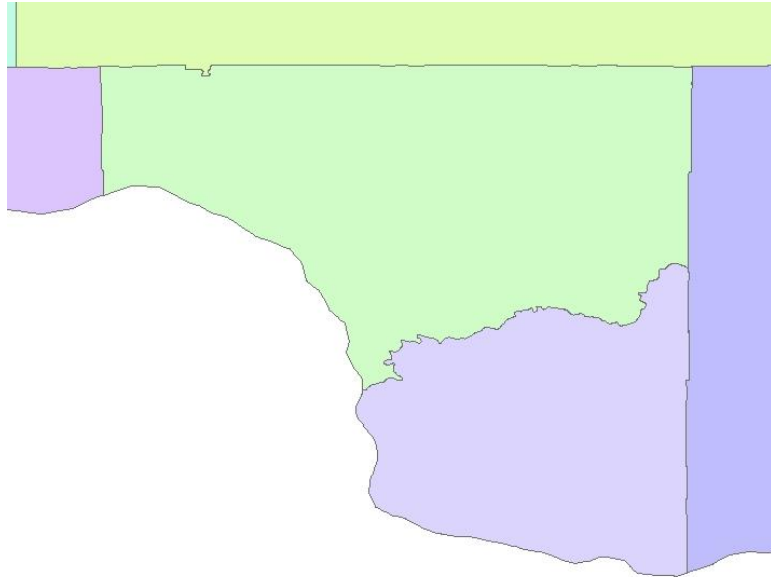
VS

PSAP



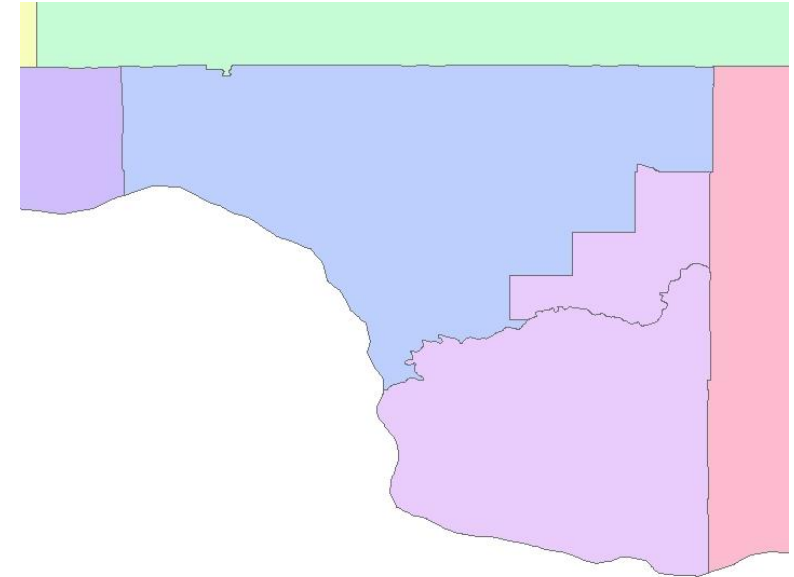
# Provisioning Boundary

Provisioning



VS

PSAP



# Provisioning Boundary

---

<b>Descriptive Name</b>	<b>Field Name</b>	<b>M/C/O</b>	<b>Type</b>	<b>Field Width</b>
Discrepancy Agency ID	DiscrpAgID	M	P	75
Date Updated	DateUpdate	M	D	-
Effective Date	Effective	O	D	-
Expiration Date	Expire	O	D	-
Provisioning Boundary NENA Globally Unique ID	PB_NGUID	M	P	254

# Provisioning Boundary

---

- Discrepancy Agency ID (M)
  - Ex: vermont911.vt.us.gov
- Date Updated (M)
  - Ex. 2017-12-21T17:58.03.1-05:00
- Effective Date (O)
- Expiration Date (O)
- Provisioning Boundary NENA Globally Unique ID (M)
  - Ex: PB455@911Authority\_domain.state.us



# Emergency Service Boundaries

---

PSAP Boundary, Law, Fire, EMS

# Emergency Service Boundaries

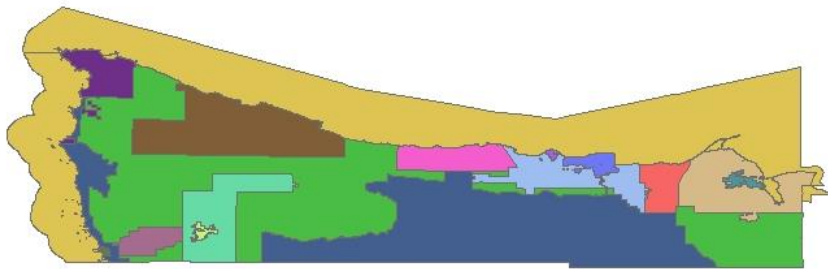
---

*Defines the geographic area for the primary providers of response services*

- Stakeholders Must Agree
- Determines who is responsible for providing service to a location
- Direct an Emergency Incident Data Document
- Used by ECRF

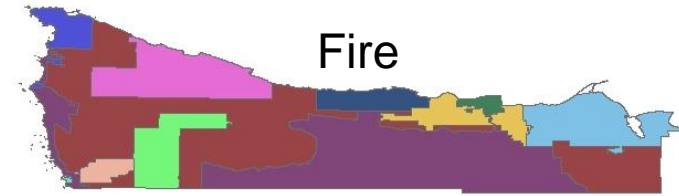
# Emergency Service Boundary (ESB)

ESN/ESZ

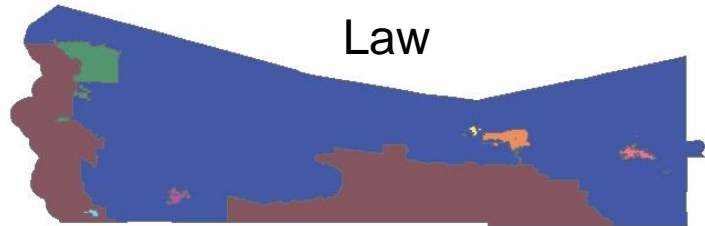


VS

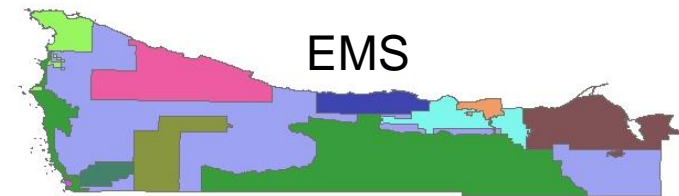
ESB



Fire



Law



EMS

# Emergency Service Boundaries

<b>Descriptive Name</b>	<b>Field Name</b>	<b>M/C/O</b>	<b>Type</b>	<b>Field Width</b>
Discrepancy Agency ID	DiscrpAgID	M	P	75
Date Updated	DateUpdate	M	D	-
Effective Date	Effective	O	D	-
Expiration Date	Expire	O	D	-
Emergency Service Boundary NENA Globally Unique ID	ES_NGUID	M	P	254
State	State	M	P	2
Agency ID	Agency_ID	M	P	100
Service URI	ServiceURI	M	U	254
Service URN	ServiceURN	M	P	50
Service Number	ServiceNum	O	P	15
Agency vCard URI	AVcard_URI	M	U	254
Display Name	DsplayName	M	P	60

# Emergency Service Boundary

---

- Agency ID
  - Ex: psap.harriscounty.tx.us
- Emergency Service Boundary NENA Globally Unique ID
  - Ex: PSAP7@911Authority\_domain.state.us
  - Ex:FireFD1@911Authority\_domain.state.us
- Service Number
  - Ex: 911; 18002221212
- Agency vCard URI
  - Ex. <https://vcard.houstontx.gov/fire>
- Display Name
  - Ex: New York Police Department

# Service URN – Uniform Resource Name

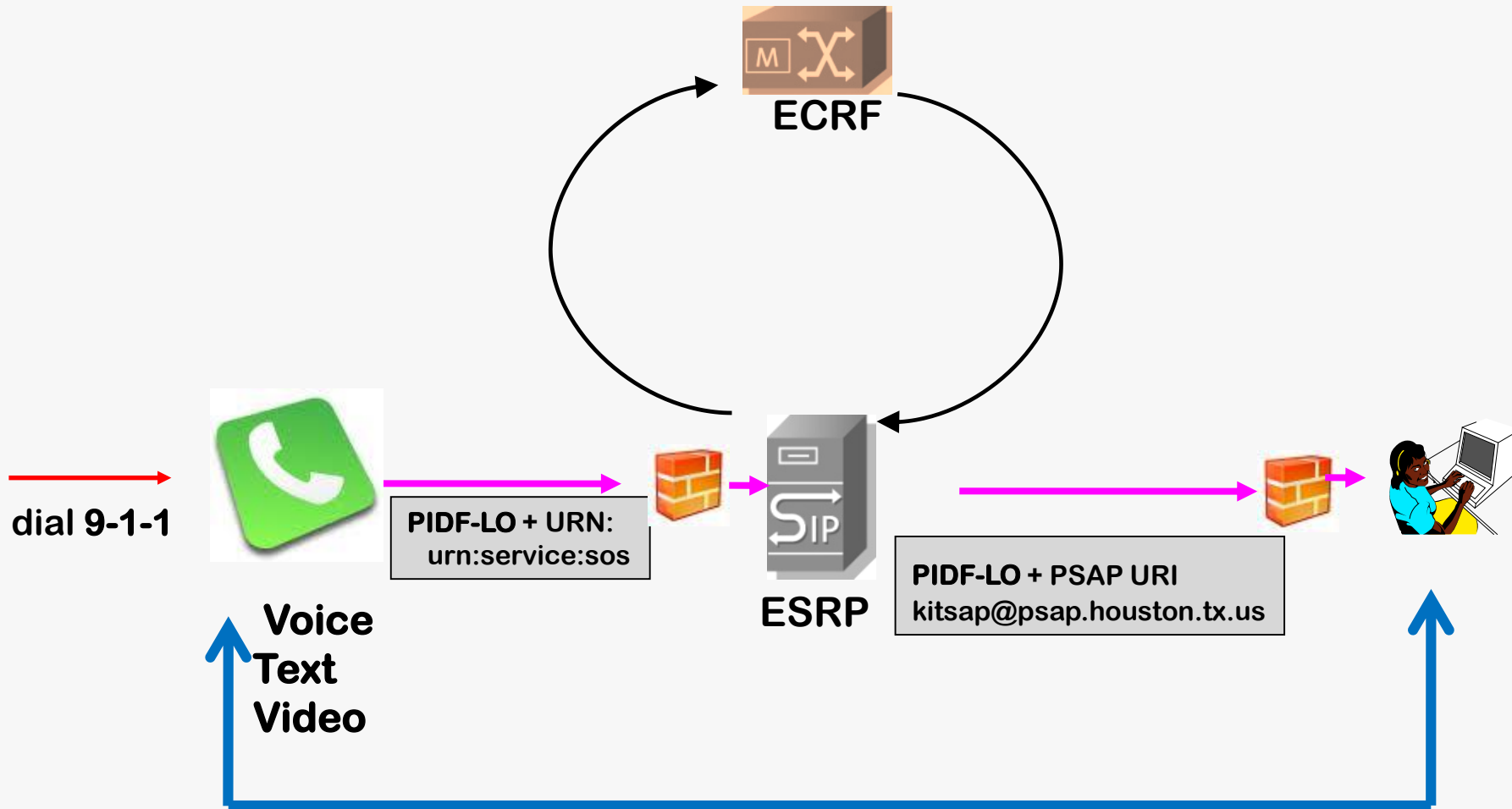
---

- Identifies a particular category of resources within an Emergency Services Information Network (ESInet)
  - Ex: urn:nena:service:sos.psap

# Service URI – Uniform Resource Identifier

---

- Provides network address for a given resource
  - Ex: sips:sos.psap@eoc.Houston.tx.us



# Where to Start

---

- Talk to your neighbors
- Ensure there are no gaps or overlaps: internal or external
- NENA Information Document for GIS Data Stewardship for Next Generation 9-1-1 (NG9-1-1)  
<https://www.nena.org/page/GISDataStewardship>



# Safety & Security Technologies

Melissa Liebert

GIS Analyst

[melissa.liebert@comtechtel.com](mailto:melissa.liebert@comtechtel.com)

[www.comtech911.com](http://www.comtech911.com)





**Fostering Excellence in GIS**

# Upcoming URISA Programs

---

## GIS/Valuation Technologies Conference

March 23-26, 2020 in Louisville, Kentucky

## GIS Leadership Academy

June 8-12, 2020 in Minneapolis, Minnesota

August 17-21, 2020 in Portland, Oregon

November 9-13, 2020 in St. Petersburg, Florida

## GIS-Pro 2020: URISA's 58<sup>th</sup> Annual Conference

September 27-October 1, 2020 in Baltimore, Maryland

[www.urisa.org](http://www.urisa.org)

