August 23, 2018
ACCA Annual Convention
AAEM and AAND Breakout Session
GIS in Alabama's NG9-1-1
Orange Beach, AL

Agenda

❖ Introduction

❖ NG9-1-1 call routing with GIS

❖ GIS in Alabama

Introduction

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Deputy Director,

Alabama 9-1-1 Board

Knowns-

- PSAPs have GIS data sets.
- NG911 will need GIS data.

A few truths

❖ Methods of contacting 9-1-1 continue to expand and evolve.

❖ Existing (Legacy) 9-1-1 systems are always in a state of change, modification or upgrade to keep pace with new demands of callers.

❖ This is especially true of the databases used to maintain a level of accuracy for determining the location of a caller.

　– MSAG, ALI, CAD mapping, and so on…

❖ Legacy 9-1-1 systems, though performing adequately, are becoming obsolete and limited in meeting the technology available and in use.

❖ NG9-1-1 is comprised of an integrated network of systems, components and functional capabilities that deliver 9-1-1 services regardless of technology, location and device.
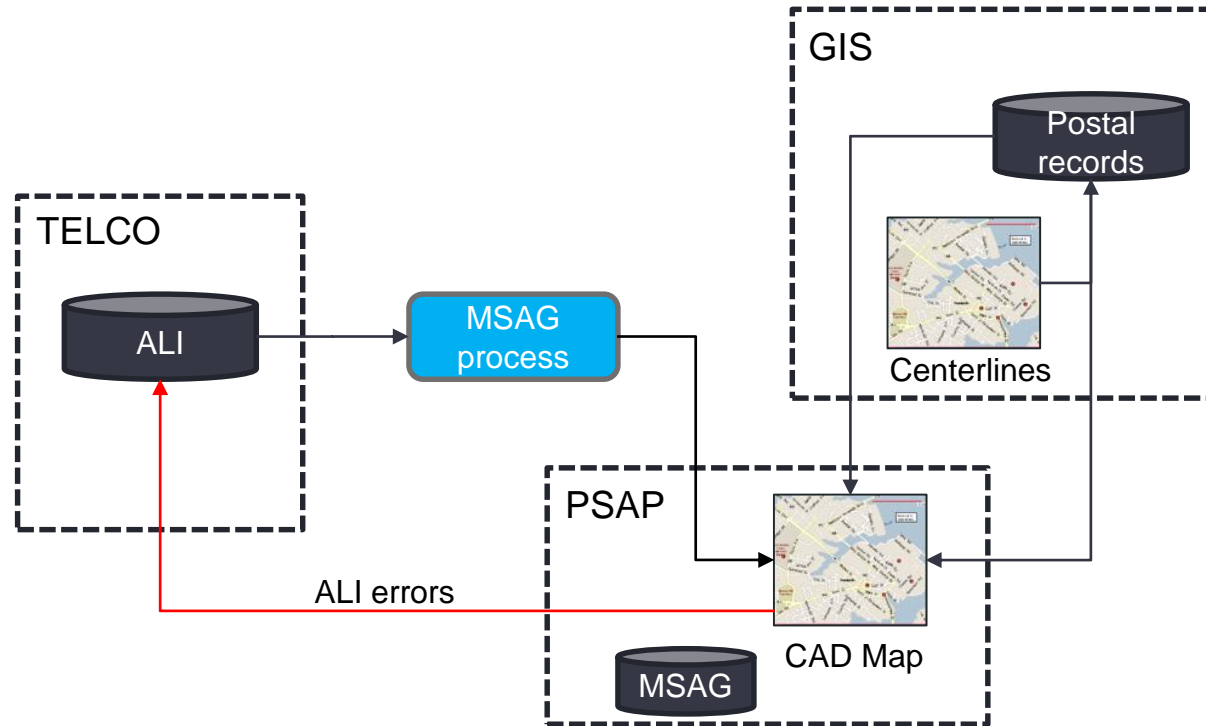
What's the big change for us?…
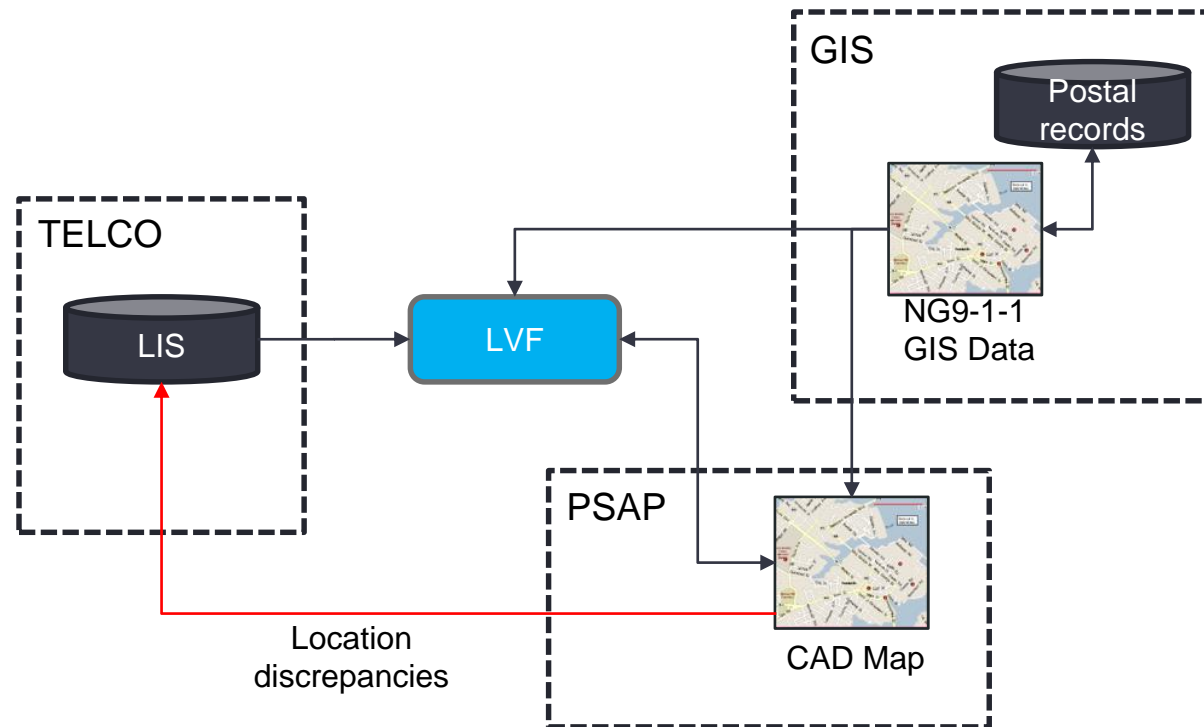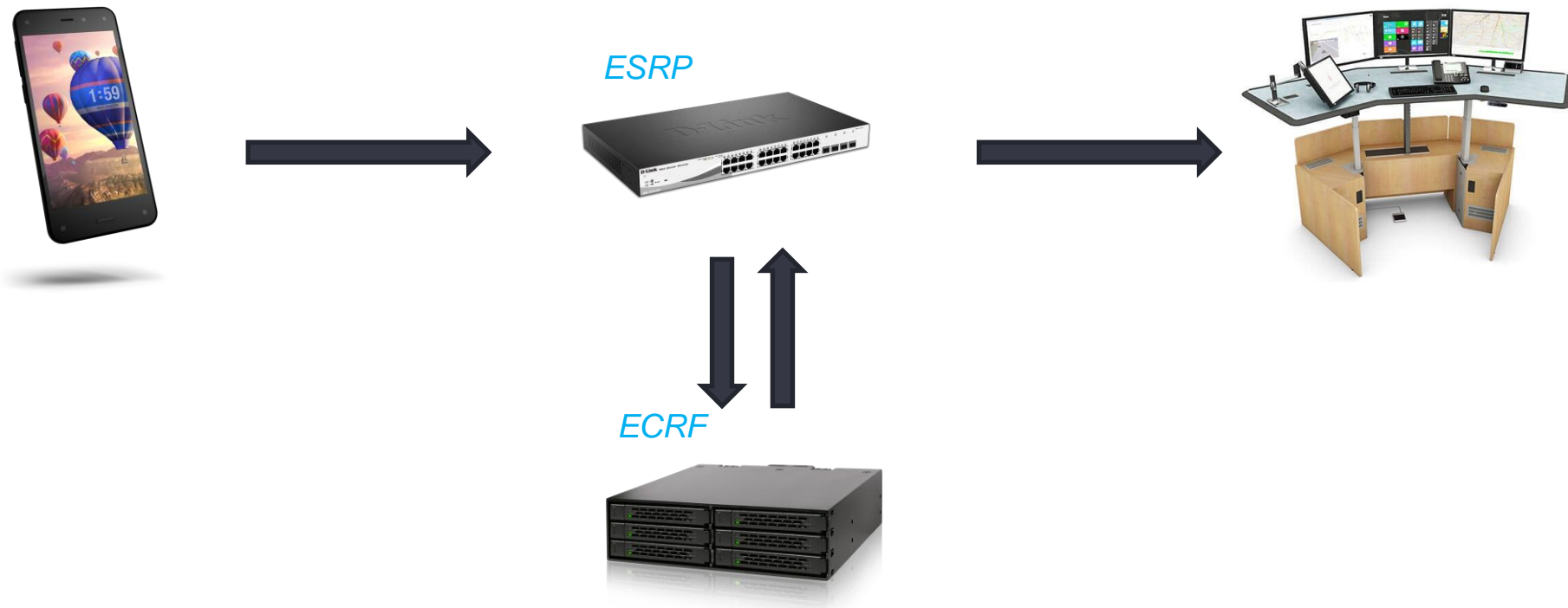
LOCATION

LOCATION

LOCATION

Today's database management

NG9-1-1 database management

NG9-1-1 geospatial call routing

ESRP

ECRF

Geodetic call routing

Subscriber calling 9-1-1

34.209420, -77.945628
urn:nena:service:sos.psap

PSAP A

PSAP B

Send call to PSAP B

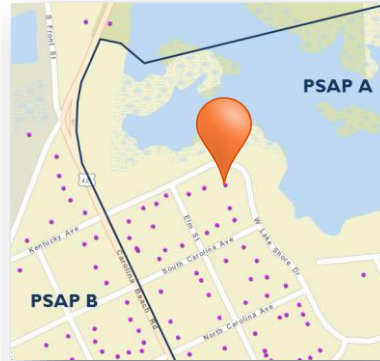SIP: voice, data,
location

Civic call routing

Subscriber calling 9-1-1


150 W Lake Shore Dr
urn:nena:service:sos.psap

PSAP A

PSAP B

Send all to PSAP A

SIP: voice, data,
location

Summary of the changes

Legacy 911 databases	NG911 databases (replacements)
ALI	LIS / LDB
MSAG and SRDB	LVF / ECRF

Street name	Direction	Designator	House Low	House High	ESN
TEST	LANE		1	20	1400
15 1/2	STREET	Southeast	400	499	1400
3 1/2 STREET	ALLEY	Southwest	1	99	1400
50TH	PLACE	Southeast	600	699	1400
58TH	PLACE	Northeast	1	199	1400
58TH	PLACE	Southeast	1	99	1400
59TH	PLACE	Northeast	1	199	1400
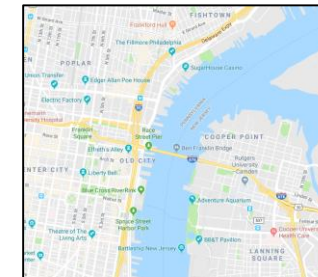
GIS replaces the MSAG update process.

Put it all together from a GIS perspective

ESRP

ECRF

LVF

Caller

Telco

PSAP

GIS Analyst

SIP
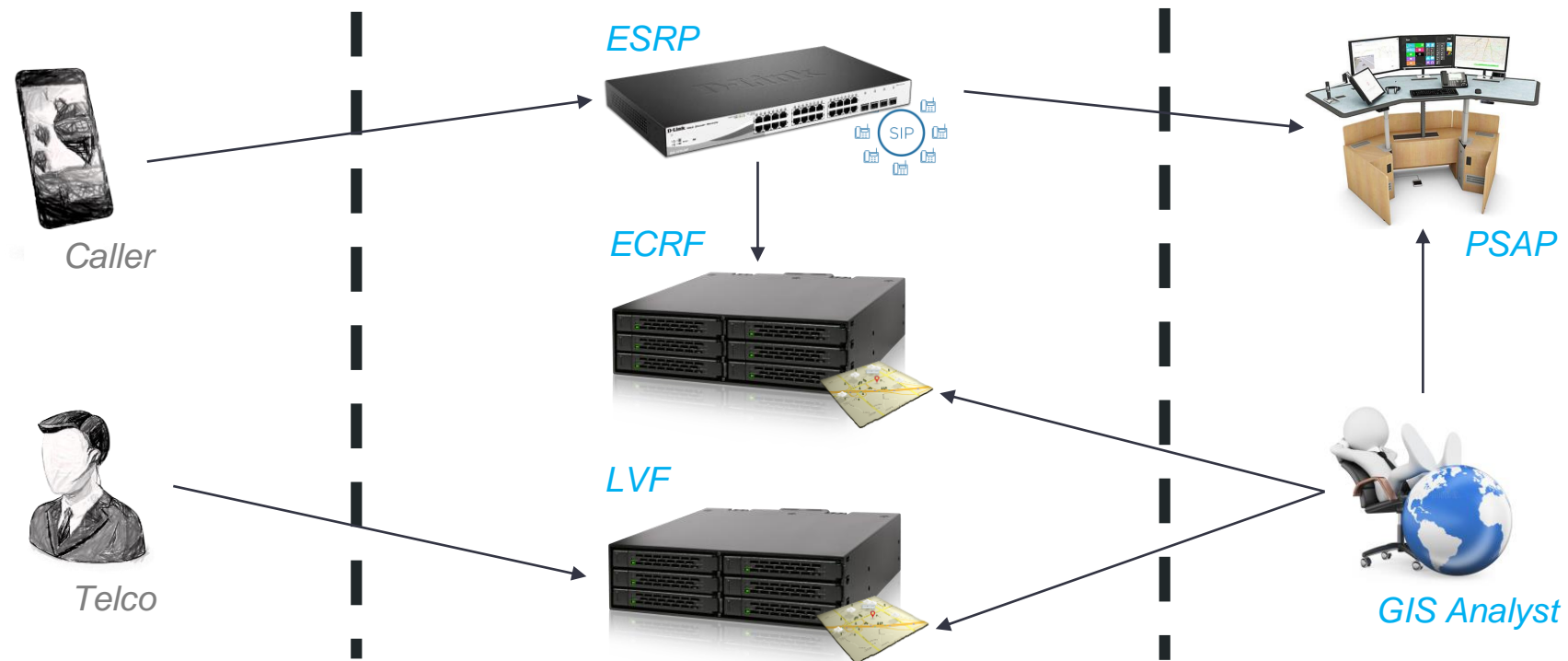
Developing IP call routing with GIS

❖ Goal is to establish common GIS platform and management/maintenance capability for NG9-1-1 GIS activities and PSAPs across the State of Alabama

❖ The Board recognizes many GIS mapping applications already established throughout the state

❖ No intention of changing these existing programs, but to utilize them in new ways

  – Separate GIS datasets come together to support NG9-1-1 at a state level

❖ Local government geospatial programs will remain the authoritative source for accurate GIS data to be used for NG911

❖ Agencies utilizing their own "in house" standards encouraged to modify/update standards if necessary to meet or exceed the NENA Standard to support NG9-1-1 systems, databases, call routing, location validation, call handling, and other related process.

Developing IP call routing with GIS

❖ Databases used today to route calls and present location will be used to normalize all records into the NG9-1-1 standard

❖ Databases will be synchronized to utilize GIS as the primary change management tool to manage the ALI, and MSAG update process.

❖ This is typically completed by –

– Standardizing Database format and structure

– Match ALI to GIS

– Match MSAG to GIS

– Resulting in a new GIS focused system that can be used by the NG Core services, and the PSAP(s) to manage the data

Developing IP call routing with GIS

❖ The Board must employ a strategy that integrates the existing GIS systems and spatial information into a common seamless system to allow call routing, location determination, and dispatch

❖ Need to provide a mechanism for statewide 9-1-1 database normalization and 9-1-1 GIS synchronization, in addition to supplying database management services for integrating the entire database platform for NG9-1-1 call delivery to the PSAP

❖ The Board has made this GIS database project a large component in the upcoming Federal 9-1-1 Grant Program application to be submitted for the State of Alabama

What we need from you

❖ We are requesting the PSAP boundary shapefiles that are used in your district so we can begin the initial compilation of what does and does not exist within Alabama

❖ We are able to accept any other GIS data you may have that will eventually be needed for call routing (centerlines, emergency service zones, site/structure address points, etc.)
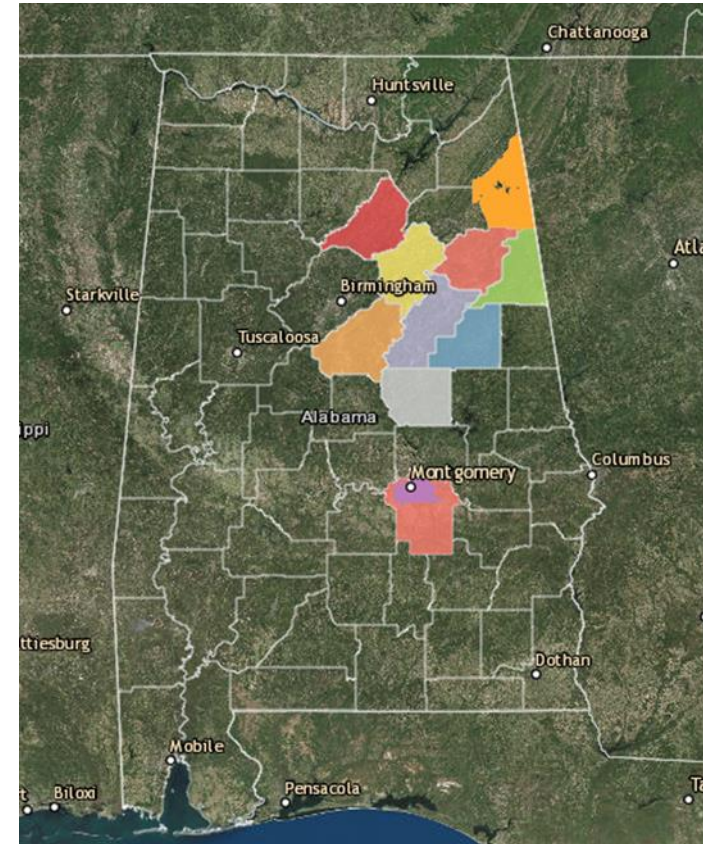
QUESTIONS?

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