NG9-1-1 ESInet and Core Services
using the Fairfax County AT&T Contract

A summary update for the RAC on the NOVA NG9-1-1 ESInet

August 2017

240 million times a year, U.S. residents call the most important and recognized number in America....9-1-1

Business Objectives Overview

- Obtain the capability to support PSAP/Regional transition to a NG9-1-1 standards-based ESInet with Next Generation Core Services (NGCS) as a replacement of the legacy Verizon 9-1-1 call routing network.

- Provide the network and IP connectivity to support full multimedia emergency services as the standards are solidified in the future.

- Support interoperability with other public service ESInets or broadband networks
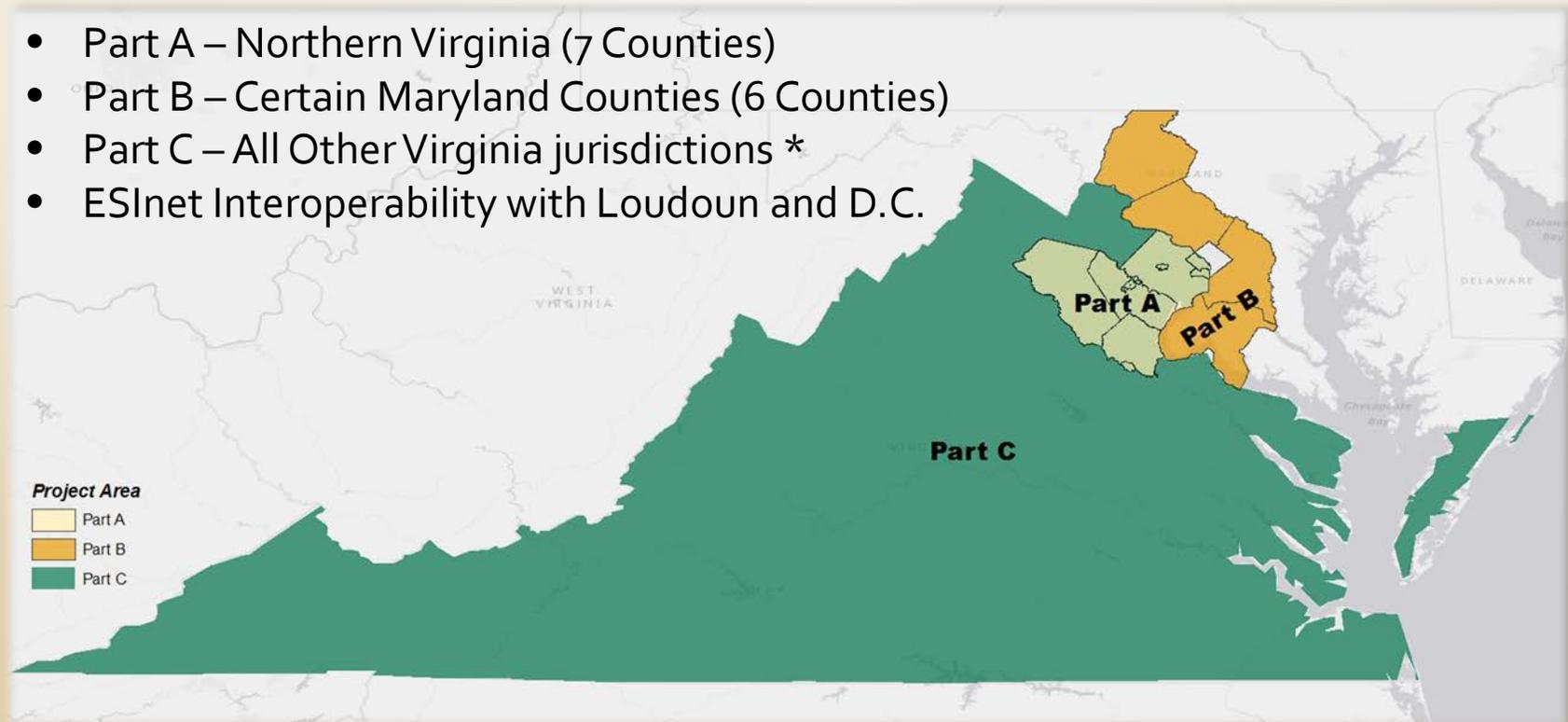
Status of the Procurement Effort

- Fully competitive RFP process was followed with multiple offerors participating (the known major players in the NG9-1-1 ESInet industry submitted bids).

- Contract award made August 8th, 2017 to AT&T as the best value solution based on technical considerations and price considerations. Five year initial contract with option to extend out to ten years.

- Contract requirements addressed the need for NG9-1-1 ESInet and the corresponding Next Generation Core Services (NGCS) functional elements.

  - Legacy Network Gateway (LNG)
  - Legacy Public Safety Answering Point (PSAP) Gateway (LPG)
  - Border Control Function (BCF)
  - Emergency Services Routing Proxy (ESRP)
  - Policy Routing Function (PRF)
  - Emergency Call Routing Function (ECRF)
  - Text-to-9-1-1 TCC services

  - Location Validation Function (LVF)
  - Location Database (LDB)
  - Spatial Interface (SI) for GIS Data
  - PSAP Interfaces (ESInet side)
  - Discrepancy Reporting
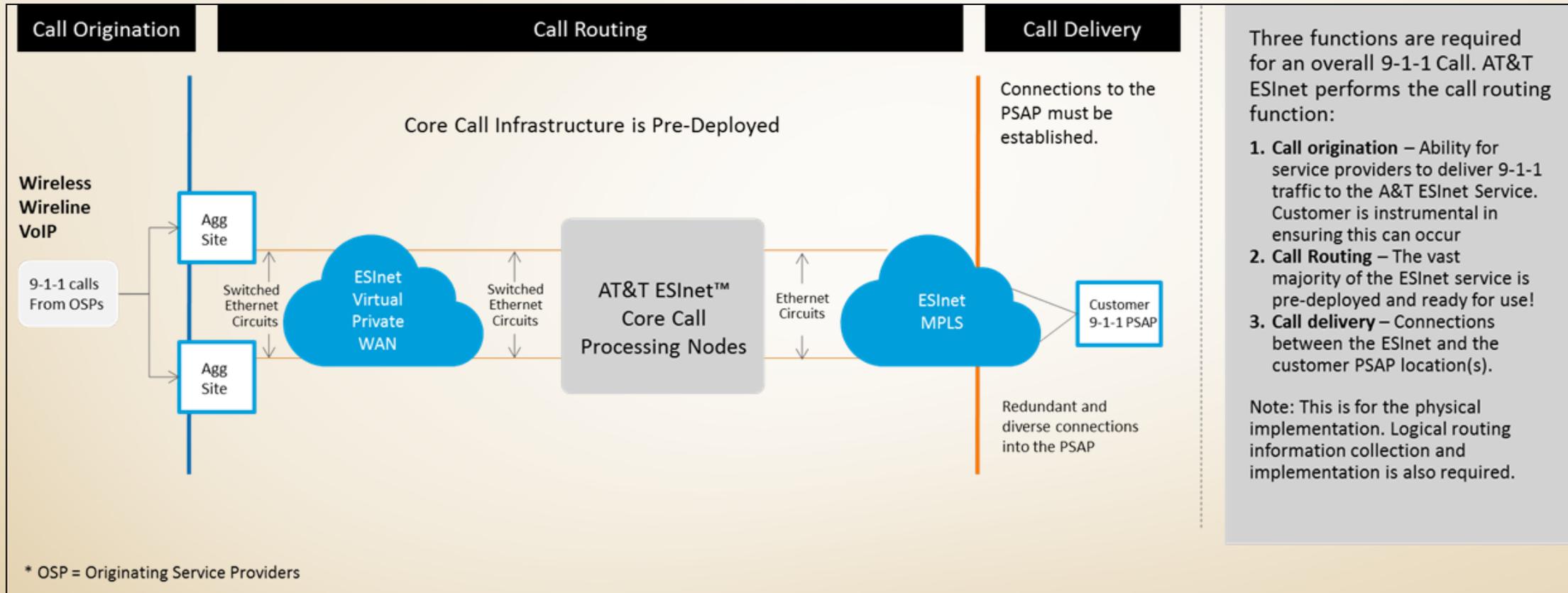 - Event Logging
  - Time Server

Status of the Procurement Effort (cont.)

- Kickoff date for Fairfax County project under discussion but likely September.

- Segmented the pricing into three parts plus ESInet interoperability: Part A, Part B, and Part C. Part A and B with complete one-time costs (includes Special Construction for local access diversity) and Monthly Recurring Costs (MRC), Part C has MRC and partial one-time costs estimated (setup fee per PSAP). The Local access diversity costs not yet estimated per PSAP (an estimated range is available*)).

- Fixed pricing established for ten years for the ESInet and NGCS. Supplementary pricing obtained for i3 ECaTS components and other GIS support services and software.

- Part A – Northern Virginia (7 Counties)
- Part B – Certain Maryland Counties (6 Counties)
- Part C – All Other Virginia jurisdictions *
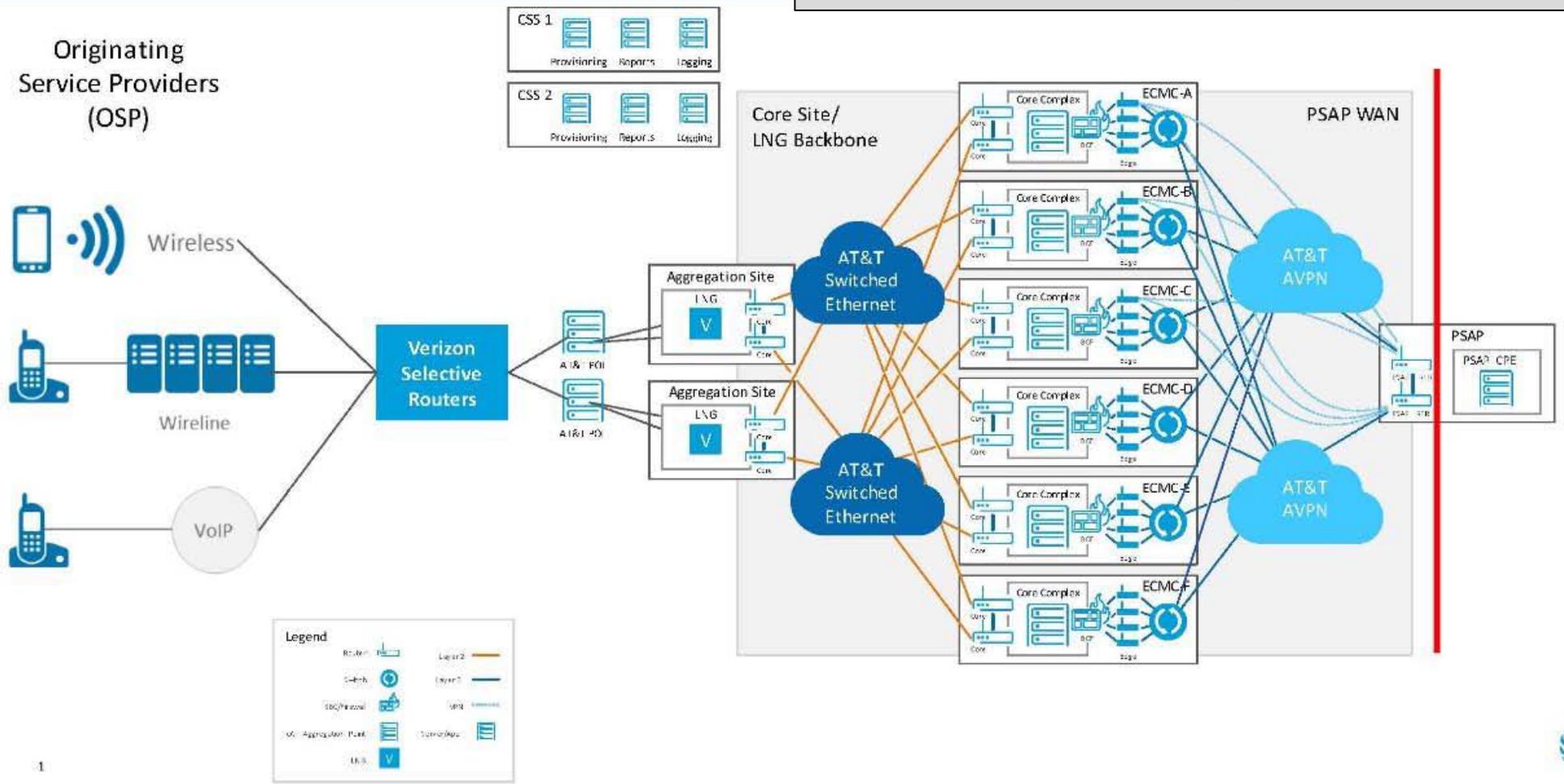- ESInet Interoperability with Loudoun and D.C.

Project Area
- Part A
- Part B
- Part C

Overview of the NOVA NG9-1-1 ESInet

Call Origination

Call Routing

Call Delivery

Core Call Infrastructure is Pre-Deployed

Wireless
Wireline
VoIP

9-1-1 calls
From OSPs

Agg Site

Agg Site

Switched Ethernet Circuits

ESInet Virtual Private WAN

Switched Ethernet Circuits

AT&T ESInet™ Core Call Processing Nodes

Ethernet Circuits

ESInet MPLS

Customer 9-1-1 PSAP

Connections to the PSAP must be established.

Redundant and diverse connections into the PSAP

Three functions are required for an overall 9-1-1 Call. AT&T ESInet performs the call routing function:

1. **Call origination** – Ability for service providers to deliver 9-1-1 traffic to the A&T ESInet Service. Customer is instrumental in ensuring this can occur
2. **Call Routing** – The vast majority of the ESInet service is pre-deployed and ready for use!
3. **Call delivery** – Connections between the ESInet and the customer PSAP location(s).

Note: This is for the physical implementation. Logical routing information collection and implementation is also required.

* OSP = Originating Service Providers

AT&T ESInet™ Solution Architecture

- The AT&T ESInet™ provides a deployment architecture based on a foundation of six strategically located data centers, also known as Core Sites, with NGCS functions.
- The Core Sites combined with regional Aggregation Sites, for example LNG Locations, and AT&T's robust broadband transport network create a high quality NG9-1-1 product offering.
- Any 9-1-1 call can be processed at any of the AT&T Core Sites; each Core Site contains highly available architecture with multiple levels of redundancy as well as focused operations and management for self-sufficiency.

Corollary Efforts -Spatial Interface (SI) Project Status

- The NOVA region has an ongoing regional NG9-1-1 GIS project underway (grant funded from two sources – VITA and UASI) continues with high degree of success. QC progress (see below) and PSAP polygon boundaries defined.

- Will transition work processes from current project effort to work processes with AT&T team in terms of data feeds to the AT&T ESInet.

- GIS work has required a high degree of coordination and commitment from the localities

LOCAL QC'S	MSAG/ROADS NAME QC	ALI/ROADS NAME QC	ALI/ADDRESSES POINT QC	ALI/ADDRESSES BOUNDARY QC	ALI/NO ADDRESS BOUNDARY QC
Alexandria	98.86%	99.74%	97.05%	99.99%	100.00%
Arlington	96.03%	99.73%	90.98%	99.99%	100.00%
Fairfax	99.28%	99.95%	96.91%	99.94%	99.98%
Falls Church	98.77%	100.00%	89.89%	99.90%	100.00%
Fauquier	99.91%	99.93%	99.94%	99.98%	100.00%
Loudoun	99.29%	99.97%	97.77%	95.53%	28.33%
Manassas	100.00%	100.00%	97.93%	99.99%	100.00%
Manassas Park	99.51%	N/A	N/A	N/A	N/A
Prince William	99.24%	98.48%	76.67%	99.99%	99.93%
Stafford	99.24%	99.71%	97.38%	100.00%	99.58%
Charles	99.13%	98.61%	86.39%	97.99%	96.68%
Frederick	99.18%	98.15%	89.32%	99.99%	99.91%
Montgomery	99.09%	99.81%	91.79%	100.00%	99.98%
Prince Georges	99.57%	99.91%	80.36%	99.89%	99.95%
Washington DC	97.47%	96.06%	94.15%	100.00%	100.00%
MWAA	100.00%	N/A	N/A	N/A	N/A
GROUP TOTAL	**99.17%**	**98.61%**	**90.64%**	**99.45%**	**99.83%**

NG9-1-1 Directors Subcommittee

- NG 9-1-1 Subcommittee, for COG jurisdictions, organizing to address topics such as:
  - Transition planning – near term project activities to prepare to work with chosen vendor and fill in descriptive network details of the ESInet infrastructure for a specific PSAP, and then the next, etc.
  - Policies to maintain interoperability (during the transition and once ESInet transition is complete).
  - Backup PSAP/Failover planning – with new ESInet capabilities what new arrangements might be appropriate?
  - NG Procedures to address: Cybersecurity procedures are being followed, when and how do one notify another PSAP you wish to invoke failover of calls to another PSAP, storage and retention of new media types, etc.
  - Training – call processing for staff in 9-1-1 center with new media types, potential use of staff in different modes for reviewing incoming media in a more cross discipline approach for real time information analysis).
  - Governance – coordinating the ongoing NG9-1-1 GIS data across the region.
- Committee is in <u>early</u> stages of organizing, a work in progress, only one meeting thus far.

Next Steps (some, not all)

- Finalize Project Plan and timeline. Conduct Kickoff Meeting.

- Each jurisdiction (Part A and Part B) will need to administratively arrange how they will use the contract with the guidance of their Purchasing Department.

- Each jurisdiction will need to use the pricing in their budgeting process.

- Each jurisdiction will likely need an interface update with their CPE (switch from CAMA trunk interface to IP MPLS network feeds from the ESInet). Jurisdiction responsibility.

- Will provide some information and planning sessions across the Part A and Part B jurisdictions to schedule the individual transitions from legacy and onto the NCR NG9-1-1 ESInet. DC has indicated a commitment to now transition onto this contract vehicle instead of interconnecting from their West Safety Services solution.

- Working with VITA to coordinate any planned use of this contract vehicle in support of Virginia PSAPs (for Part C PSAPs, as appropriate, and approved by Board guidance).

Questions & Answers

Project Contacts

Steve McMurrer, ENP

Regional Project Leader

Steve.McMurrer@fairfaxcounty.gov

Office: 571-350-1779

Mobile: 703-625-7227

Dave Sehnert, ENP

NG911 SME

DaveSehnert@mcp911.com

Office: 720-370-6863

Cell: 303-476-0719

Jamie Pun

For Contract Documents->   Fairfax County Dept. Procurement and Material Management

jamiepun@fairfaxcounty.gov

Office: 703-324-3653