



**North Carolina 911 Board
Technology Committee Meeting
Wednesday, April 19, 2023
10:00 am-12:00 pm**

Meeting Conducted by Use of Simultaneous Communication

<u>Topic</u>	<u>Presenter</u>
1. Welcome	Bo Ferguson
2. Introduction of Jonathan Nixon	Bo Ferguson
3. Roll Call	David Newberry
4. Ethics Awareness/Conflict of Interest Statement	Bo Ferguson
5. Opening Remarks	Bo Ferguson/Pokey Harris
6. Approval of February 9, 2023, Minutes (Vote Required)	Bo Ferguson /Newberry
7. Cybersecurity Ad Hoc	Pokey Harris/Tom Rogers
8. Legal Brief	Amanda Reeder
9. ESInet/GIS Implementation Update	Tom Rogers
a. Implementation Update	
b. GIS project Update	
c. Data Analytics Update	
d. NMAC update	Greg Dotson
10. AT&T/Intrado Update	Josh Briggs
11. SIP Admin Phone Service (Vote Required)	Harris/Rogers/DIT/AT&T
12. Other	Open
13. Closing Remarks	Bo Ferguson/Pokey Harris
14. Adjourn	Bo Ferguson



Welcome (Bo Ferguson)

Introduction of Jonathan Nixon (Bo Ferguson)

Roll Call (David Newberry)

Ethics Awareness/Conflict of Interest Statement (Bo Ferguson)

In accordance with G.S. 138A-15, it is the duty of every committee member to avoid both conflicts of interest and potential conflicts of interest. Does any member have any known conflict of interest or potential conflict of interest with respect to any matters coming before the committee today? If so, please identify the actual or potential conflict and refrain from any undue participation in the particular matter involved.

Opening Remarks (Bo Ferguson/Pokey Harris)

Approval of Minutes (Bo Ferguson/David Newberry)

Cybersecurity Ad Hoc (Ad Hoc Team)

Legal Brief (Amanda Reeder)

ESINet Update (Tom Rogers)

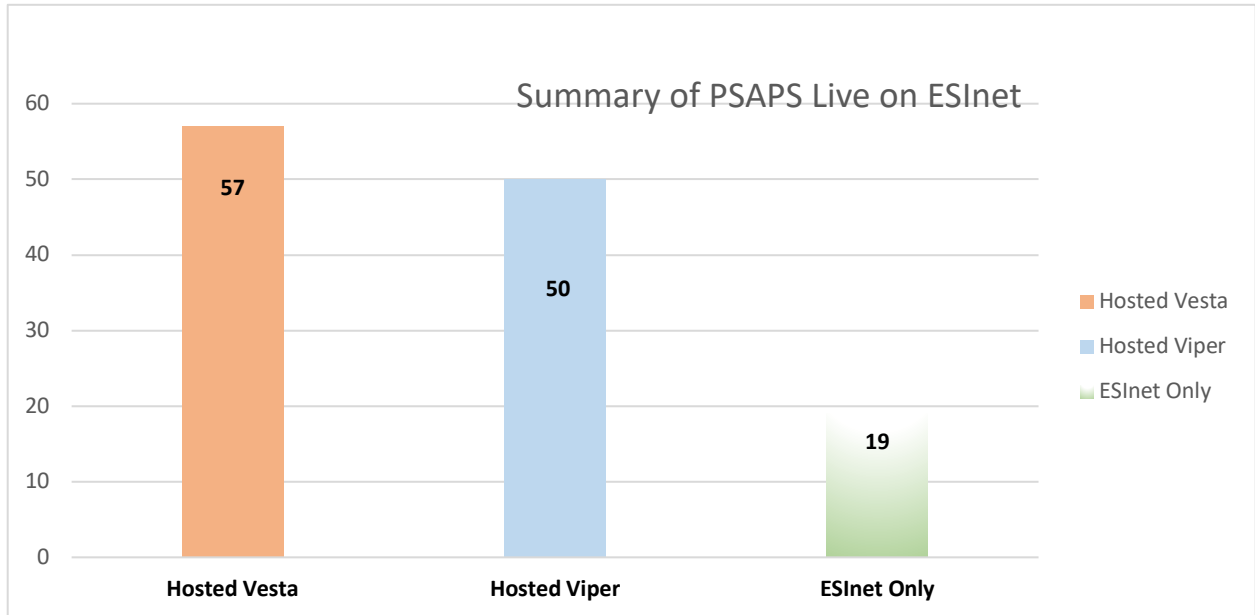
Due to vendor issues, the date for project completion is extended into Q2/Q3, 2023. We remain at 126 PSAPs migrated to ESInet.

The remaining (1) PSAP: Anson – no cutover date. A 100% migration attainment will be achieved with Anson County. Anson County remains at risk due to the selective router not being able to accept SS7 connection from ESInet.

Next Up Migrations: Anson County – Not currently scheduled



Current Status of PSAP deployments by service type



Additional project notes:

- Cybersecurity Remediation
 - Ad hoc committee has partnered with CISA to hold regional Cybersecurity exercises in the spring of 2023.
 - Date/Locations
 - May 16 – Eastern Region - Jacksonville
 - May 18 – North Central Region - Durham
 - June 6 – South Central Region - Pittsboro
 - July 11 – Western Region - Boone



GIS Update (Tom Rogers)

[NC Next Generation 911 GIS Services Webpage](#)

- NC CGIA and GeoComm are continually working with jurisdictions. Focusing on data upload frequency and accuracy
- NCGIA to pilot new enhanced version of DataHub
- RFAI PSAPs: 17 i3 PSAPs: 109
- Statistics
 - Total Population served by NG 911: 10,566,375 (99%).
 - Total land mass covered by NG911: 48,619.57 sq. mi. (99%).

In support of the governance policy, the link below will be used to monitor compliance for making timely updates to the data set. NCCGIA published the link in April 2022.

[NC NextGen911 Days Since Last Upload Dashboard \(arcgis.com\)](#)

- PSAP & GIS Managers continue receiving automated notification emails to alert them of map status.
- Critical errors recently added to weekly email.

Data Analytics Update (Tom Rogers)

- RapidDeploy has deployed the correction to Viper abandoned call counts.
- ECaTS is no longer available to PSAPs nor NMAC as of March 31, 2023.

NMAC (Greg Dotson)

- Staffing update
- Ticket Report

AT&T/Intrado Issue Update (Josh Briggs)



SIP Admin Phone Service (Harris/Rogers/DIT/AT&T)

- Proven Proof of Concept and Implementation Overview

Other (Open)

Closing Remarks (Bo Ferguson/Pokey Harris)

Adjourn (Bo Ferguson)

Next Meeting: June 8



**North Carolina 911 Board
Technology Committee Meeting
MINUTES**

**February 9, 2023
10:00 AM - 12:00 PM**

Meeting Conducted by Use of Simultaneous Communication

Attendance

	Phone/Teams	In-Person	Absent
Members			
Rachel Bello	P		
Randy Cress			NP
Bo Ferguson	P		
Red Grasso	P left at 10:58		
Greg Hauser	P left at 11:06		
Lee Kerlin			NP
Glenn Knox			NP
Jeff Ledford	P		
John Moore	P		
Kyle Randleman	P		
Earl Struble	P		
Staff			
Stephanie Conner	P		
Greg Dotson	P		
Kristen Falco	P		
Tina Gardner	P		
Pokey Harris	P		
David Newberry	P		
Amanda Reeder	P		
Tom Rogers	P		
Marsha Tapler	P		
Sarah Templeton	P		
Angie Turbeville	P		
Tyree Grant	P		
Guests			
Michael Catagnus - Edgecombe County			
Doug Workman – Cary PD			
Steven Ingram – Cary PD			
Josh Benfield – Caswell County			
Lynn Slycord – Kings Mountain PD			

Chad Deese – Robeson County			
Crystal Batton – Robeson County			
Van Williams – Apex Systems			
Justin Combs – Alexander County			

- 1. Chair’s Welcome & Goals for Today’s Meeting** – Meeting was called to order at 10:01 AM by Chairman Bo Ferguson. He welcomed Committee members, staff, and guests. He said he appreciated the opportunity to serve as Chair of the Technology Committee and was grateful for the technical expertise on the Committee. He welcomed Jeff Ledford and Kyle Randleman to the committee.
- 2. Roll Call** – David Newberry called the roll. All attendees were present by phone or Teams only.
- 3. Ethics Awareness/Conflict of Interest Statement** – Chairman Ferguson read the Ethics Awareness/Conflict of Interest Statement. No Committee members recused.
- 4. Executive Director Opening Remarks** – Pokey Harris thanked Chairman Ferguson for accepting the role as Committee Chair. She noted that one PSAP remains for migration and Next Gen 911 in North Carolina continues to progress. She stated the SIP admin proof of concept will be delivered to the Technology Committee at its April meeting. She also noted that discussion is underway to determine the feasibility of utilizing FirstNet for diversity in areas where other carrier options have been less successful. She noted that cybersecurity efforts are underway and requested input from PSAPs.
- 5. November 2022 Meeting Minutes Approval** – Motion to approve minutes made by Red Grasso and seconded by Rachel Bello. Roll call vote was conducted by David Newberry and the motion carried unanimously.

Minutes Vote

Rachel Bello	Y
Randy Cress	NP
Bo Ferguson	Y
Red Grasso	Y
Greg Hauser	NP for vote
Lee Kerlin	NP
Glenn Knox	NP
Jeff Ledford	Y
John Moore	Y
Kyle Randleman	Y

- 6. Cybersecurity Ad Hoc** – Ms. Harris gave the update. She stated in the FY 2023 budget money was allocated for cybersecurity initiatives. She noted that a multi-factor authentication survey was sent to the PSAPs for cost recovery. She also noted training was another focus area. She stated a cybersecurity tabletop exercise will be held in each region in partnership with NC Emergency Management and CISA. She said CISA will handle the planning and will deliver an after-action report (AAR). The 911 Board will reimburse lodging, travel, and meals for participants. She said information will be sent out after the February regional PSAP meetings, but a hold the date has already been sent. Ms. Harris said other states have done a statewide cybersecurity tabletop, but North Carolina is the first to include PSAPs. She also noted three (3) PSAPs will share their experiences from a cybersecurity incident.
- 7. ESInet Update** – Mr. Rogers provided the ESInet update. He advised Anson County is the only remaining PSAP to migrate and no migration date is available. The originating service provider (OSP) is the cause of the delay. Mr. Rogers stated a Viper host merge project is underway to consolidate three (3) hosts into two (2) hosts. The first PSAP to be migrated to the new platform will be Cabarrus who is coming from ESInet-only to hosted. Ms. Harris said this has always been the plan for equipment replacement. A schedule to onboard the remaining PSAPs to the new platform will be created. Rutherford County migrated to hosted Vesta and ten (10) PSAPs are in the queue to move from ESInet-only to a hosted solution. Eight (8) PSAPs will use Vesta and two (2) will use Viper. Mr. Rogers said the NC Emergency Management 24-Hour Watch is scheduled to migrate to the ESInet in April.
- 8. GIS Update** – Mr. Rogers provided a GIS update. He stated staff has been working closely with PSAPs to get uploads completed on a consistent basis. He stated PSAPs receive an email if the data is more than 30 days old and a website dashboard is live for PSAPs to see their current status.
- 9. Data Analytics Update** – Mr. Rogers provided the data analytics update. He noted that weekly meetings are held with AT&T and RapidDeploy. A custom report was requested by one PSAP and the call counts for abandoned calls for Viper sites issue is being addressed by the RapidDeploy team. The projected resolution is end of first quarter 2023. He said the RapidDeploy Academy remains available to all PSAPs as an online training option.
- 10. SIP Admin Pilot** – Mr. Rogers stated Carteret County migrated to SIP admin February 6th and Durham is scheduled to migrate on February 16th, both as part of the SIP admin pilot. He said currently the demarcation point for legacy admin lines is at the PSAP and with the SIP offering the demarcation will be at the

Viper or Vest host. He said the FCC has put out notice that copper services need to be phased out. Ms. Harris said the 911 Board allows up to \$75 per position per month (excluding long distance charges, which are allowed separately) to be claimed for approved seats. She said the purpose is to allow a telecommunicator to call back a 911 caller if contact is lost. She stated for the SIP admin phone service the Board will be billed directly for approved seats. Ms. Harris clarified that admin calls would not traverse the 911 call path. She said 42 PSAPs have signed up as interested and reiterated that the project would be presented to the Technology Committee in April 2023 for approval.

11. NMAC Update – Greg Dotson provided the NMAC update. He stated three (3) additional NMAC positions will be added in July and three (3) current contractors will move to State employee status.

12. Other – John Moore asked if there have been cost savings with implementation of the ESInet. Ms. Harris stated there have been some costs savings, but carriers have developed different billing philosophies to recapture costs. It is expected that when all selective routers are decommissioned the largest cost savings will be seen.

13. Adjourned – Mr. Ferguson adjourned the meeting at 11:25 AM.

DRAFT

Post Incident Review – SoNC NC-Viper1

Intrado – Life & Safety

Date: 3/23/2023

Helpdesk Ticket #: CS3081128

Opened: 3/23/2023

Location: SoNC NC-Viper1

Channel: AT&T

Impact of Impairment: i3 calls destined for specific i3 PSAPS on the VIPER 1 Host presented to all i3 PSAPs

Event Start: 3/23/2023 16:54:58

Event End: 3/23/2023 18:36:08

*All times are in eastern.

Event Summary:

03/23/23

- 16:51 – A configuration change and PMG sync was performed to adjust line pool priorities for the Lumberton PSAP.
- 16:54 – i3 calls begin presenting to RG default, ringing in on the intercom of all i3 PSAP's positions.
- 17:20 – Intrado L3 Support is engaged.
- 17:47 – Process to restore site specific routing configuration in the PMG begins.
- 18:29 – PMG sync with corrected route information is initiated.
- 18:36 – Configuration restored, and i3 calls being presenting to the proper PSAPs as designed.

Call Impact :

- A total of 291 i3 calls were routed to the default ring group during the event causing each position on that Viper 1 Host to ring. Calls presented to every position's intercom until the site-specific routing configuration was restored at 18:36.

Root Cause Summary:

- Pre-configuration work performed in the Viper PMG on 03/15/23 to prepare Madison County for their upcoming i3 migration inadvertently introduced default values to the call route tables in a separate section of the PMG.
- On 03/23/23 when changes were made in Telephony/Consoles section of the PMG for the unrelated Lumberton line pool priority change, the subsequent PMG sync caused the routing changes to be pushed out.

Corrective Actions:

- Intrado will work with AT&T to develop a more robust and expanded checklist for all personnel to follow prior to saving and or performing any configuration syncs in the PMG.
- VIPER 7.0 contains an extra layer of protection in the PMG which warns users with a "pop-up message" before they are able to proceed with implementing configuration change such the change which was made on 03/15/23.

NC NG911 ADMIN PHONE SERVICE

Enabling the full benefit of an IP based network for 911

SIP Operation and
Benefits Review

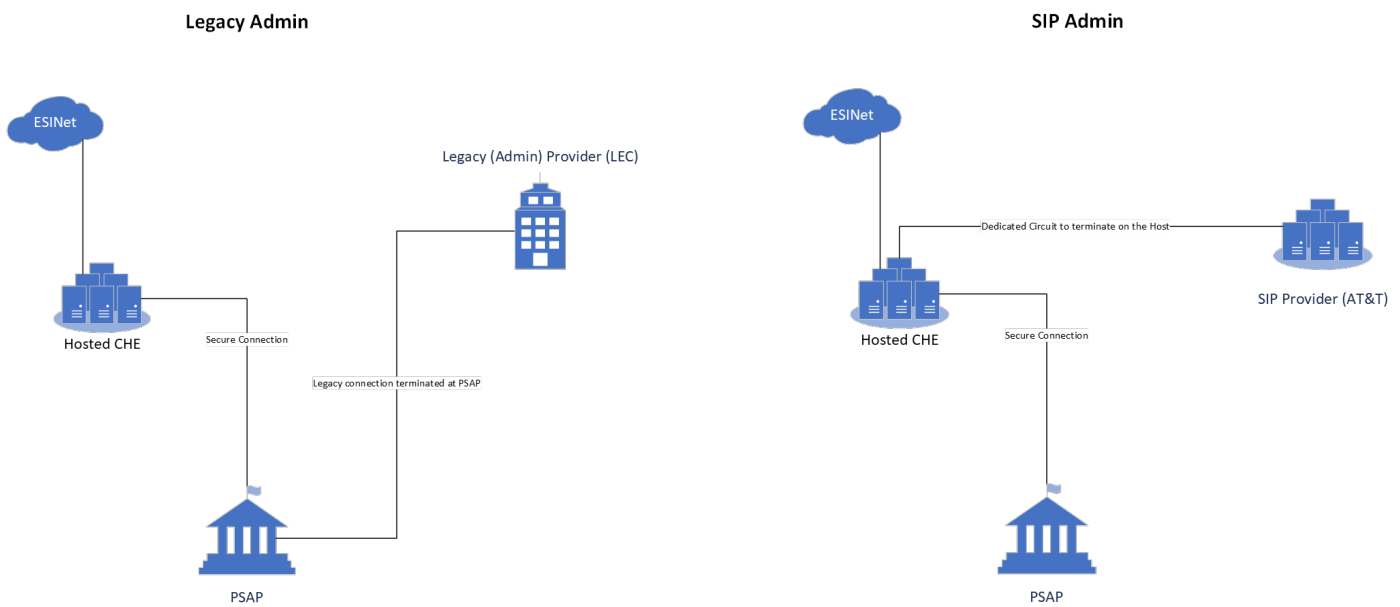
SIP Admin: Highlights

- This is an optional service, wherein PSAPs can choose to have administrative calls delivered via the secure network from the hosted environment to Primary and Backup PSAPs.
- The Board will provide this service for all console positions on the hosted telephony solution, regardless of Board-approval status, as a Next Generation 911 service paid pursuant to G.S. 143B-1407(e).
- Requires number porting to AT&T regardless of local LEC for number retention. This allows PSAPs to retain their published PSAP ten-digit numbers if desired.
- 911 Board is the “customer”- admin phone services covered by NC 911 Board.
- PSAP to PSAP 10-digit dialing across the State is on-net and calls follow user groups as Branch Office Extensions (BOE).
- SIP service billed to NC 911 Board - Offers substantial cost offsets vs. multiple gateways and individual POTS lines managed by the individual PSAP.

Legacy Admin line design

Individual PSAPs use a varied combination of PSTN access circuits for local PSTN ingress and egress. Circuit types include POTS, Centrex, dedicated PRI, and PSAP owned PBX extensions. Each PSAP has its own call handling CPE with circuits to their local and long-distance phone services. Listed below are several common attributes.

- POTS, Centrex, T1/PRI access lines are the predominant way provisioning local PSTN access.
- Local last mile access failures result in the loss of abandoned callback capability.
- Requires gateways for connection to the local phone equipment and therefore extra hardware to manage and maintain.
- Hosted Call Handling for the ESInet, currently offered by the Board to PSAPs, and admin line voice networks are separate with separate service continuity schemas.
- Advanced features are specific to each carrier and therefore inconsistent Statewide.
- Use of varied contracts results in varied costs across the State for comparable services.
- Telephone numbers are specific to individual lines, therefore limiting efficiency via aggregation.



Current Board governance pays for one legacy administrative line (“admin line”) per answering position in a primary and backup PSAP. The features of caller identification (call ID), three-way calling, call forwarding, multi-line hunt and the cost of long-distance charges necessary for re-establishing contact with a 911 caller are required on each line. **Funding for each administrative line cannot exceed \$75.00** (exclusive of long-distance charges) unless prior approval is received from the 911 Board. The express purpose of admin phone service is to allow each console operator to make a return call using the ANI information from a 911 calling party in case of a dropped and/or abandoned call.

NG Hosted NG911 SIP Admin design

The NG911 interface to traditional analog FXO administrative lines is achieved through the configuration of Administrative Interface Modules (AIMs) for the call to be converted to an IP-based call, akin to how 911 calls that traverse the ESInet. AIMs are also configured within VIPER gateway shelves and can be configured for single or redundant administrative line termination. VIPER and Power 9-1-1 systems are based on the use of the non-proprietary SIP for the delivery of voice services to the call taker workstation. The Power 9-1-1 Intelligent Workstation handles Voice over IP (VoIP) calls delivered under current NENA i3 standards. The VESTA 9-1-1 Core VoIP call control software uses IETF-compliant SIP Protocol and is built and controlled as part of the hosted solution. Onsite gateways are designed to maintain call connectivity in the event of a hardware or software failure for both platforms.

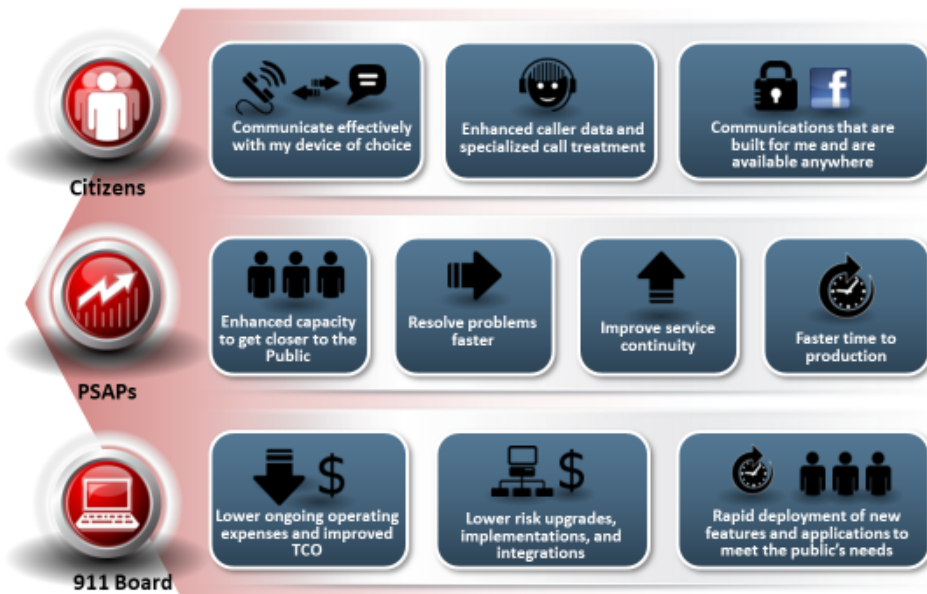
Advantages of SIP Admin service: Key Findings

Converting to SIP-based admin calling allows a much greater level of commonality of operations taking further advantage of the NG911 Hosted Call Solutions. SIP admin simplifies the management and support of the admin phone function by removing the reliance on Local Exchange Carriers for dial tone management and administration. SIP admin will be centrally located at the same NG911 network facilities using the secure AVPN Connection between the Hosted Call Handling equipment and the PSAP for network call delivery and call origination. This will allow SIP admin call transfers and routing to any NG911 PSAP. In addition, the extensive features of the service are customer defined and implemented. The SIP Admin function will be managed by NC DIT, thereby allowing feature changes at any time.

Please note the following advantages:

- SIP-based admin improves the State’s ability to build service continuity plans that complement the policy-based routing rules of the ESInet, such as the ability to close a PSAP due to weather, pandemic outbreak, social unrest, or other reasons and still handle 911 and admin calls at alternate locations.
- SIP admin service as an aggregate replacement for analog admin lines will reduce monthly recurring cost for Primary Rate Interface (PRI) trunks and other traditional types of PSTN access circuits 40-50% while providing higher throughput, efficiency, and additional layers of redundancy for increased continuity of operations.
- The aggregation of SIP trunk admin in the NG911 environment yields further service improvements due to centralized trunking, routing applications based on programmable variables, as well as economies of scale due to call traffic consolidation.
- The complementary functions of session management and SBC improve Statewide communications security, and software driven call routing applications create operational efficiency and enhanced reliability.

Enabling SIP for enhanced 911 capabilities



- Migration from legacy analog services will enable customization of emergency services. This can be accomplished by enabling assigned numbering capability for call delivery using numbering schemas to identify caller location, calls from specialized medical support, and other applications that would benefit from the utilization of the intelligence in the NG911 infrastructure.
- Use of NC DIT as the designated management client for the service will allow changes to PSAP Admin profiles to be performed in real time. A service request ticket to NC DIT will allow the following tasks to be performed:
 - Add or delete numbers
 - Change directory number calling profiles and features
 - Modify alternate routing specifications on an individual number basis
 - Configure access permissions on a user/console position basis
 - Add or delete total call capacity
 - Provide real time call record detail analysis
 - Manage bandwidth requirements for admin calls
 - Manage real-time control mechanisms for TDOS attack mitigation

AT&T SIP features

Station to Station	Calls within the SoNC Hosted Call Handling environment never leave the AT&T network like a regular analog call does. PSAP-to-PSAP calls between sites can be completed by either dialing the 10-digit public number for the called party, or by utilizing a private dialing plan (abbreviated dialing/star codes).
State of NC Number Portability and Termination on IP Flexible Reach	AT&T provided Flexible Reach telephone number portability enables PSAPs to port or migrate Telephone Numbers (TNs) from multiple Local Service Providers (LSPs) to IP Flexible Reach. LSPs can be Local Exchange Companies (LECs) such as Lumen, Frontier, and Windstream as well as Independent Telco's, Competitive LECs (CLECs) and VoIP providers.
Simultaneous Ringing	Enables users to have multiple phones ring simultaneously when any calls are received on their IP Flexible Reach phone number (up to 10 telephone numbers). The first phone to be answered is connected to the caller.
User to User Information	Ability to pass information about the calling party user in the SIP REFER request from the Redirecting Party to the Target Party. This feature is only available between SIP clients.
Incoming / Outgoing Concurrent Calls	The number of incoming and outgoing concurrent calls can be modified in real time, not to exceed the maximum number of Concurrent Call Paths (CCPS) supplied through Board funds, as managed by DIT.
Unreachable Destination	This feature is applied when an incoming call cannot be routed successfully because the PSAP is at capacity or is unreachable for other reasons. Calls can be routed to a local public or private number, such as a county number or the Director's office, or to another PSAP utilizing SIP within the SoNC.
Unreachable Timer	When an incoming call cannot be routed within a certain number of seconds, the Unreachable Destination Feature is activated. The default timer is set to 12 seconds, and may only be edited by AT&T.

SoNC ESInet as Enterprise Entity for SIP Admin Phone Service Call Routing

Trunk Call Routing Features

Trunk Call Routing provides the ability to aggregate multiple PSAPs (each equating to an IP Flexible Reach IP Trunk, not individual assigned numbers) and allow these trunk groups to work together to support load balancing, redundancy, and overflow routing capabilities for inbound calling. With Trunk Call Routing, an Enterprise is created to handle the routing for each of the PSAP sites (Group) and the new and/or migrated TNs for each PSAP are then available at the Enterprise level for routing treatment. A Group Trunk Group is created for each PSAP, defining a routing path to that site.

A Group Trunk Group is a routing path to terminate a call. A Trunk Call Routing (TCR) design can have multiple GTGs associated (paths) and a routing algorithm determining how the calls will be distributed to the GTGs. In addition, the NC

DIT will specify which of the PSAP TNs should belong to each TCR. Incoming Calls to the *Enterprise* go through a routing algorithm that determines the path to take to complete the call. Hence calls managed with a TCR coupled with “unreachable” designations would be able to follow the PSAPs GTG if the PSAP site must be abandoned.

Pilot PSAPs

The following PSAPs have successfully participated in the 911 Board SIP Pilot project. Each has migrated both inbound and outbound admin services to SIP in the hosted call handling environment.

PSAP Name	Date Joined the Pilot
Carteret County 911	February 6, 2023
Durham Emergency Services	February 16, 2023
Perquimans County 911	September 21, 2022
Richmond County 911	October 20, 2022
Union County 911	August 16, 2022

Lessons Learned

The reason for a Proof of Concept is to test the theory of a technology. For the SIP Admin Phone Service, the Board approved a pilot of five (5) PSAPs. The pilot started with an idea of a 1-for-1 replacement of analog lines with SIP CCPs, providing one CCP per console. Through the pilot, it was proven this method is an overabundance of resources and not an efficient method to determine concurrent call path counts. This was indicated when DIT completed an initial traffic report showing very low utilization of CCPs. The pilot provided 200 CCPs (which includes all redundancies that are a part of the admin service) to the five participating PSAPs; however, in the eight-month pilot, the highest utilization of admin CCPs as a group at the same time was seven.

In addition to this overarching lesson, other lessons have been learned about minor programming issues. There have been button programming changes needed to accommodate the difference in technology, and one of the PSAPs had to re-record individual greetings because of how SIP affected Automatic Call Distributor (ACD). Each PSAP onboarding has been relatively uneventful and taken a short amount of time.

During the first phase of the SIP pilot, the Board recognized that the NMAC is legislatively established as a monitoring and assistance center, and cannot manage admin services for the PSAPs. Therefore, DIT has agreed to manage all administration of the service and operation. The NMAC will continue to take the initial call from the PSAP reporting any issue, then guide the PSAP to DIT personnel for any problem resolution, feature enhancement, or change in routing rules affecting the SIP admin phone service.

Proposed Functional and Cost Elements

As with the ESInet, SIP Admin will NOT require an upfront investment by the 911 Board. The service will initiate with ongoing monthly charges for ethernet access capacity and SBC access port capacity. At each AT&T Hosted site data center, a 100MB AVPN circuit has been installed for call delivery to the PSAP environment. Admin calls utilizing the SIP admin service will be delivered to the dedicated layer 2/3 routing mechanism on the Hosted Call Handling infrastructure in the Raleigh and Columbia AT&T data centers. The hosted call handling infrastructure will route the admin calls to the respective PSAP based on the telephone number dialed by the calling party. For the purpose of establishing an account address, the Raleigh data center will serve as the address of record for all SIP admin numbers put into service. Each data center will be provisioned with a SIP access port for the State residing on a shared session border controller. The SBC port bandwidth can be easily increased via a simple service order. The start-up SBC configuration will utilize two 20MB ports capable of handling well over 200 simultaneous calls. The SBC also performs all security and session management functions.

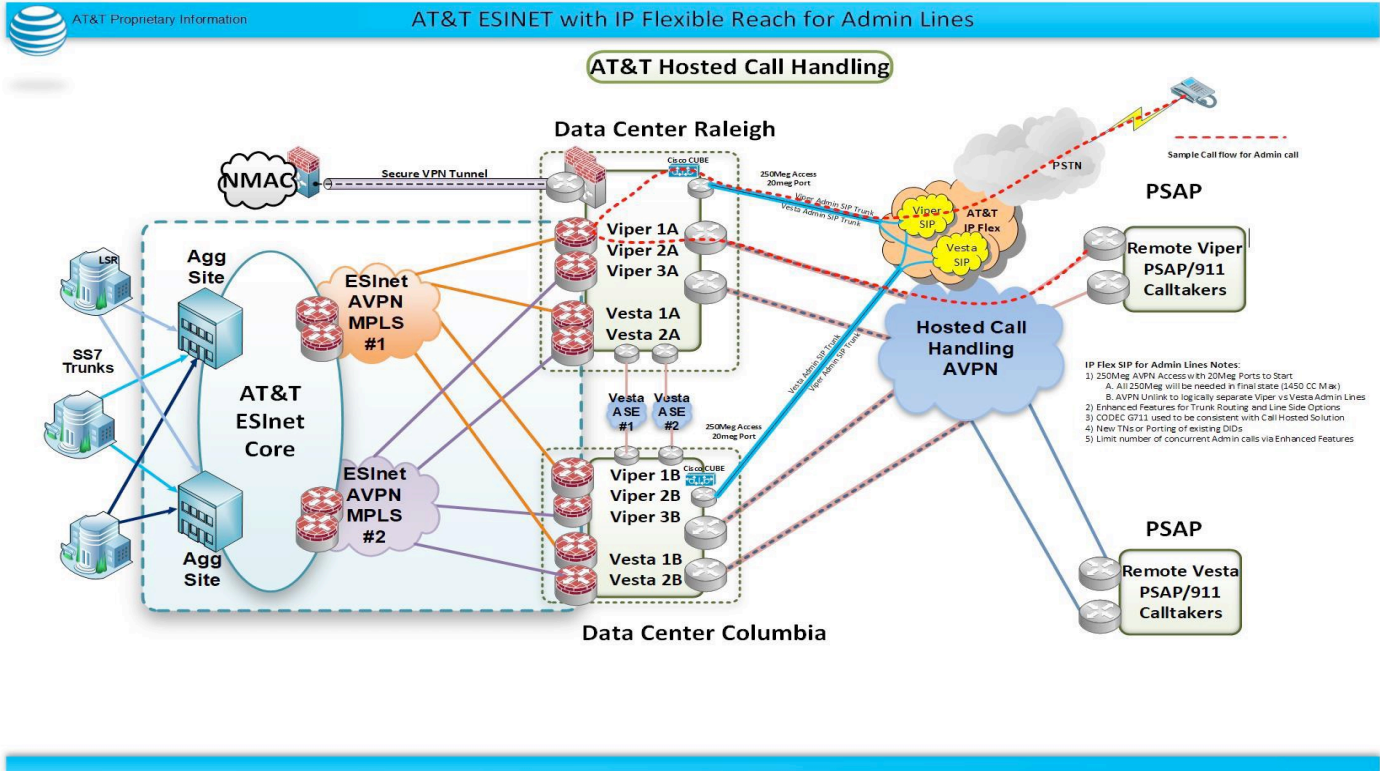
Each PSAP can port existing numbers or new numbers can be assigned to exchanges in the PSAP's operating area at no additional cost to the Board. AT&T will provide the new numbers and they will be available immediately upon service turn-up. The porting of existing numbers generally has a 45-day interval and will require a coordinated cut-over date. NCDIT/AT&T will serve as the point of contact for all SIP Admin migrations and service modifications.

The number of CCPs allocated for each PSAP are grouped into a single resource. DIT has already completed some initial traffic reporting on the five (5) pilot PSAPs, and DIT is continuing to work with Board staff to complete traffic studies on PSAPs who have already signed up to utilize SIP admin. When the utilization studies are compiled, we will determine a very liberal percentage of utilization **at 23%** and then add an additional **15%** totaling **47%**. This will ensure capacity is adequately sufficient for catastrophic events at a local level or in wide areas affecting multiple PSAPs. This capacity will serve all PSAPs in the SIP Admin project. As additional PSAPs adopt the use of SIP Admin, capacity will be increased in real time. The Board and DIT will continue to monitor the usage of the admin service to adjust the utilization rate to be an efficient use of resources while ensuring that PSAPs have ample resources to meet their needs. The Board will likely need to adapt this offering as it learns further lessons during the implementation.

The 911 Board will assume payment for SIP Admin by paying DIT, who is managing the accounts established with AT&T. SIP admin phone utilization will be based upon capacity needed to support PSAP operations and will be sufficient to provide admin call services for all PSAPs as needed. All on net long distance is free, and each CCP will have 300 minutes of off-net long distance, which will be aggregated and shared among the participating PSAPs. As such, it is anticipated there will be no additional long distance billing necessary. This rate does not include any international calls, but those are not expected; any associated costs would be minimal (cents per minute).

In approving this new service, the NC 911 Board calculates the use of SIP admin phone services will result in a sizeable overall reduction in cost compared to current reimbursement costs now being incurred by the NC PSAP community. The first-year costs will be **\$56.91** per Concurrent Call Path. A gradual decrease is expected in years 2 and 3. This cost per CCP will be driven by utilization, as increased utilization will result in reduced cost per CCP.

Design Drawing



Current Policy: For the one administrative line per answering position in a primary PSAP, the features of caller identification (call ID), three-way calling, call forwarding, multi-line hunt and the cost of long-distance charges necessary for reestablishing contact with a 911 caller. **Funding for each administrative line will not exceed \$75.00** (exclusive of long-distance charges) unless prior approval is received from 911 Board.

If a PSAP chooses to utilize the SIP admin service, any legacy admin lines at the PSAP will no longer be eligible for ETSF.

With the utilization of SIP admin, costs will be covered directly by the Board, so the PSAP does not receive an invoice. In addition, the cost for SIP admin CCPs will be lower than currently allowed under Board policy and is expected to continue to become even more inexpensive as the use among PSAPs becomes more widespread. This is possible through economies of scale and a capacity model versus the old 1:1 methodology.

PSAP Responsibilities to Utilize SIP

- Notify your Regional Coordinator of your interest/intent to utilize SIP Admin phone service.
- Upon request from DIT, provide official authorization for DIT to act on its behalf with the LEC (LOA) (if not AT&T dial tone today).
- Provide AT&T/DIT with clear direction on what numbers need ported such as:
 - Main published numbers either privately or publicly.
 - NOTE: If a primary public number has multiple numbers in a hunt group, not all numbers will be ported.
- Provide routing rules, such as number of rings before defaulting to fast busy or where to forward numbers in alternate routing.

Summary

The use of SIP admin phone services provides a significant increase of the viability of logic-based continuity planning for the PSAP community. By having admin calls travel the same secure AVPN(s) from host to PSAP path as 911 calls, much of the NG911 contingency and backup planning for PSAPs would apply to both types of calls. This means admin calls can route across the State and follow the PSAP's personnel wherever they appear on the network. The design also removes the need for onsite gateways, which results in lower NG911 recurring costs. The SIP phone service offers flexibility to PSAPs and scalability for utilization. All in all, the SIP admin solution offers significant benefit to the NC PSAP community and continues the Board's mission to fully upgrade its Next Generation 911 Network.

To date 56 PSAPs have agreed to join the 5 PSAPs from the pilot and adopt SIP Admin services as soon as approved!

If approved, implementation will begin immediately. Initial conversions are expected to last into Q1 2024 with approximately 2 PSAPs being onboarded each week.

Glossary of Acronyms:

AIM – Administrative Interface Modules

ANI – Automatic Numbering Identification

AVPN – AT&T Virtual Private Network

BOE – Branch Office Extensions

CCP – Concurrent Call Path

LEC – Local Exchange Carrier

FXO – Foreign Exchange Office

IETF – Internet Engineering Task Force

LOA – Letter of Authorization; Letter of Agreement

PBX – Private Branch Exchange

POTS lines - Plain Old Telephone Service lines

PRI – Primary Rate Interface

PSAP – Public Safety Answering Point

PSTN – Public Switched Telephone Network

SBC – Session Border Control

SIP – Session Initiated Protocol

SoNC – State of North Carolina

TDOS – Telephony Denial of Service

TN – Telephone Numbers

SIP Admin Service for Hosted PSAPs

SIP Admin Service Facts and Benefits

- Admin calls will terminate on the hosted call handling equipment (Raleigh/Columbia)
 - This solution is not available to ESInet-only PSAPs
- Optional service offered to PSAPs
- Redundancy – SIP to Raleigh & Columbia, delivered over AVPNs utilized for 911 traffic
- Enhanced call routing rules/options
- Hosted admin phone service “follows” users like 911
- No need for local gateways unless PSAP chooses to keep a POTS/Ringdown
- Keep published 10-digit admin number if desired
- Call Capacity based model utilizes Concurrent Call Paths (CCP)
- Board pays the bill directly to DIT – no interaction from PSAP required
- Managed by NC DIT
- Provided by AT&T
- **Project concept proven on 5 pilot PSAPs**

SIP Admin

