

## AGREEMENT

23-0568-RFP

This Agreement (the “agreement” or “contract”) is entered into on the date last executed below (“Effective Date”), by and between Pinellas County, a subdivision of the State of Florida whose primary address is 315 Court Street, Clearwater, Florida 33756 (“COUNTY”) and Intrado Life & Safety, Inc. whose primary address is 1601 Dry Creek Drive Longmont, CO 80503 (hereinafter “CONTRACTOR”) (jointly, the “Parties”).

### ***NOW THEREFORE, the Parties agree as follows:***

#### **A. Documents Comprising Agreement**

1. This Agreement, including the Exhibits listed below, constitutes the entire agreement and understanding of the Parties with respect to the transactions and services contemplated hereby and supersedes all prior agreements, arrangements, and understandings relating to the subject matter of the Agreement. The documents listed below are hereby incorporated into and made a part of this Agreement:
  - a. This Agreement
  - b. Subject to the modifications identified in Section A.3 below, Pinellas County Standard Terms & Conditions, located on Pinellas County Purchasing's website, effective 06/14/2023, posted at <https://pinellas.gov/county-standard-terms-conditions/> (the “Online Terms”)
  - c. Exhibit E - Solicitation Section 5, titled Insurance Requirements
  - d. Exhibit F – Intrado Statement of Work
  - e. Exhibit C - RFP Scope of Work
  - f. Exhibit D - Compensation
  - g. Appendix A Pinellas Project Plans
  - h. Appendix B RACI Matrix
  - i. Appendix C GIS Roles and Expectations
  - j. Appendix D Intrado Pre-Migration Test Plan\_i3
  - k. Appendix E Intrado Shared Event Plan\_i3 Conversion
2. In the case of a conflict, the terms of this document govern, followed by the terms of the attached Exhibits, which control in the order listed above.
3. The following terms modify or supersede the Online Terms, as applicable:

Online Terms Section	Modified or Additional Language
6. Force Majeure	References in this section to “delays” will be deemed to refer to “delays or defaults”.
7.B. Liability	Add the following language: Neither party will be liable for any, exemplary, special, punitive, or loss of goodwill, data, or profits, or cost of cover. The total liability of Contractor for any reason will be limited to the amount of the contract This limit on liability applies whether the claim arises out of breach of warranty, contract, tort, or strict liability, and even if the damages are possible or foreseeable.
9. INTELLECTUAL PROPERTY and 13.E. Right to Ownership	Replace with the following: CONTRACTOR retains full and exclusive ownership of and all rights in, to and under its trademarks, service marks, tradenames and logos, and any design, data, specification, know-how, software, device, technique, algorithm, method, discovery, or invention, whether or not reduced to practice, and any development, enhancement, improvement or derivative works thereto, except for materials provided by the County to Contractor.
12.C. Refunds	This clause is deleted
17.C.1 Approval and Replacement of Personnel	Replace with the following language: The COUNTY, on a reasonable basis, will have the right to require the removal and replacement of any of the CONTRACTOR Personnel performing Services on-site, at any time during the term of the Agreement. The COUNTY will notify CONTRACTOR in writing in the event the COUNTY requests such action, including the legal basis for such request. Except for serious violations of CONTRACTOR’S or COUNTY’S written personnel handbook, CONTRACTOR will conduct remedial review and training of such Personnel prior to replacement; if the COUNTY identifies a subsequent concern and notifies CONTRACTOR in writing, CONTRACTOR will accomplish any such removal within 48 hours after receipt of such second notice from the COUNTY and

	<p>will promptly replace such person with another person, with sufficient knowledge and expertise to perform the Services assigned to such individual in accordance with this Agreement. In situations where individual CONTRACTOR Personnel are prohibited by applicable law from providing Services, removal and replacement of such CONTRACTOR Personnel will be immediate and not subject to such 48 hour replacement timeframe.</p>
<p>n/a</p>	<p>Add the following language: All manufacturer, producer or seller warranties offered to any other purchaser are expressly available and applicable to County. Except as expressly stated in the Agreement, Contractor disclaims all express or implied warranties, including warranties of merchantability, fitness for a particular purpose, noninfringement, data accuracy, condition of data, or loss of data, network connectivity, interoperability, or that software, equipment, services, or related systems will be uninterrupted or error-free.</p>

**B. Term**

1. Duration of the Agreement will be for a period of five years from issuance of Notice to Proceed, with Monthly Recurring Charges (MRC) fixed, firm for the first five years.

**C. TERM EXTENSION(S) OF CONTRACT**

1. The Agreement may be extended subject to written notice of agreement from the County and Contractor, for one (1) additional five (5) year period beyond the primary contract period (“extension period”).
2. Price Adjustments
  - a. In the event new census data shows an increase in the population total, the Contractor may increase the MRC NGCS/ESInet/MIS fee to reflect this new population count. All increases must be in accordance with the CONTRACTOR’S standard formula or ratio.  
  
 It is the Contractor’s responsibility to notify the County of the pricing adjustment under this provision. For any adjustment to commence on the first day of any exercised extension period, the Contractor’s notice for adjustment and proof of population

increase should be submitted at time of the extension request from the County, utilizing the available population totals at the time of request. If no adjustment notice is received from the Contractor, the County will assume the Contractor has agreed that the extension term may be exercised without pricing adjustment. Any adjustment notice received after the commencement of a new extension period may not be considered.

- b. Notwithstanding the above, the Contractor may submit one (1) MRC price adjustment (increase or decrease) for the extension period in an amount of 5% or less.

It is the Contractor's responsibility to notify the County of the pricing adjustment under this provision. For any adjustment to commence on the first day of any exercised extension period, the Contractor's notice for adjustment should be submitted at time of the extension request from the County, utilizing the available population totals at the time of request. If no adjustment notice is received from the Contractor, the County will assume the Contractor has agreed that the extension term may be exercised without pricing adjustment. Any adjustment notice received after the commencement of a new extension period may not be considered.

#### **D. Pricing & Expenditures Cap**

1. Payment and pricing terms for the initial and renewal terms are subject to the fee schedule in Exhibit D. Notwithstanding the above, County expenditures under the Agreement will not exceed \$1,027,980.00 annually, for a total five year amount of \$5,139,900.00, for the Contract term without a written amendment to this Agreement. Recurring fees will commence upon issuance of Notice to Proceed.
2. Security Requirements/Background Checks
  1. All contractor employees are required to submit for a background check. The background check process shall be completed at least ten (10) days prior to the start of the project. The contractor shall be responsible for all costs associated with the background checks. A valid driver license and Social Security card are required for completing the background check and obtaining security clearance.
  2. Step One – The contractor shall obtain a Level One Criminal History records check through the Florida Department of Law Enforcement (FDLE) for each assigned employee.
  3. Step Two – The contractor shall submit the FDLE Records Check along with a copy of the driver license, Social Security card and completed Sheriff's Office Security Clearance Application, for each employee, to the Facility Manager. The Pinellas County Sheriff's

- Office shall have and exercise full and complete control over granting, denying, withholding, withdrawing, or terminating security clearances for contractor employees.
4. Step Three – the Facility Manager will communicate the results of the Sheriff’s Office review to the contractor.
  5. A list of all assigned personnel, showing the employee’s full name, address, telephone number, date and place of birth, and driver license number shall be submitted to the Facility Manager. This list is to be kept up to date by the contractor and the list must be submitted in writing to the Facility Manager every time there is a change to assigned personnel.
  6. The contractor shall provide an updated FDLE Level One Criminal History Records Check for all personnel on an annual basis. The annual updates are to be sent to the Facility Manager for review by the Sheriff Office. Background check updates shall remain on file at the contractor’s location for three (3) years from the date of the last invoice.
  7. The Pinellas County Sheriff's Office shall have and exercise full and complete control over granting, denying, withholding, withdrawing, or terminating security clearances for Contractor employees. If a submitted employee is denied for any reason, there is no opportunity to re-apply.
  8. Additional Requirements for areas with confidential law enforcement documents and data: The Contractor shall submit for fingerprinting all personnel working in any area deemed confidential. The Contractor will schedule through the Facility Operations Support team a time for the employees to be fingerprinted by the Sheriff’s Office. All personnel that have successfully completed fingerprinting are required to complete an online Security and Awareness training.

**E. Entire Agreement**

1. This Agreement constitutes the entire agreement between the Parties.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their undersigned officials, who are duly authorized to bind the Parties to the Agreement.

For Contractor: Intrado Life & Safety, Inc.

Signature: *Hope Collins*

Print Name and Title: Hope Collins, Chief Customer Officer

Date: 01/09/2024

For County: Board of County Commissioners

Signature:

Print Name and Title:

Date:

APPROVED AS TO FORM

By: Keiah Townsend  
Office of the County Attorney

RFP #23-0568-RFP

Title: 9-1-1 Core Services

## **Exhibit C - Scope of Work**

### Overview:

Provided Services: 9-1-1 Communications Centers with Next Generation Core Services (NGCS) and Emergency Services IP Network (ESInet) services including a robust Management Information System (MIS) and optional Disaster Recovery (DR) solution. These services should be dynamically scalable, redundant, diverse, robust, resilient, and provide the most advanced features for 9-1-1 incident call routing. Complete solution is delivered by a single contracted NG911 system/service vendor.

### Background:

2021 Census Population Count - 956,615

Current Call Handling Equipment (CHE) Overview and Location

Pinellas County's 911 system currently relies on two independent geo-diverse Motorola Vesta 7.9 911 CHE solutions to process 911 calls for all PSAP agencies throughout the County.

Public Safety Complex (PSC) / St. Petersburg PD Vesta 1

Vesta 1 supports the County Public Safety Campus (PSC) primary Public Safety Answering Point (PSAP) with Host A, located at the PSC PSAP facility supporting fifty-eight (58) positions and Host B located at the St. Petersburg Police Department (SPPD) facility. The system also supports three (3) remote secondary PSAPs located at the Largo Police Department eight (8) positions, the Pinellas Park Police Department five (5) positions and the Tarpon Springs Police Department two (2) positions. It should be noted that the Sunstar PSAP is co-located at the PSC with thirteen (13) positions and the Pinellas County Sheriff's Office (PCSO) is also co-located at the PSC with nine (9) positions. It is also notable that the PSC serves as backup to the SPPD with fourteen (14) positions earmarked as backup in the event of an evacuation from the SPPD PSAP.

Facility - Host Address

PSC - Vesta Host A 10750 Ulmerton Road, Largo, FL 33778

SPPD - Vesta Host B 1301 1st Avenue North, St. Petersburg, FL 33705

St. Petersburg Police Department (SPPD) / PSC Vesta 2

Vesta 2 supports secondary PSAPs located at the St Petersburg Police Department host A supporting fifty-five (55) positions and the Clearwater Police Department secondary PSAP fifteen (15) positions. The Host B portion of the system resides at the PSC facility. Both the PSC and SPPD facilities are storm rated as Category 5 facilities. The SPPD facility and system also serves as backup for the County PSC PSAP with twenty-six (PSC 16, EMS 6, PCSO 4 = 26) positions earmarked as backup in the event of an evacuation from the PSC facility.

Facility - Host Address

SPPD - Host A 1301 1st Avenue North, St. Petersburg, FL 33705

PSC - Host B 10750 Ulmerton Road, Largo, FL 33778

### Administrative Requirements

Must provide a single point of contact for each relationship area to include sales, project management, technical, and administrative matters.

Must be registered as a local exchange company or competitive local exchange company in the state of Florida.

Must have the capability of processing monthly invoicing.

Must be responsible for all costs associated with interconnection to other Florida NGCS service providers.

Compliance must include and identify for a period of five (5) years, any additional costs related to full i3 compliance. This shall apply to the current published i3 Standard (NENA-STA-010.3a-2021) and any successor versions. Compliance with future versions is required within six months from the date of NENA Board approval and publication.

Must identify any and all transitional legacy related 911 costs that will remain and an estimated time frame of when these costs will no longer be payable by the County or the Contractor.

Must have the resources to stage and have readily available one (1) or more support personnel on-site at either geo-diverse VESTA site during any event, natural or man-made, deemed a disaster that affects 911 service.

Service Level Agreement (SLA) performance must maintain five-nine's availability for all Core Services. If the Contractor fails to maintain five-nine's availability for NGCS and transport to an approved PSAP designated destination, regardless of other involved service providers, the credit to the County is as follows:

- Downtime between 26 seconds up to five minutes: 25% penalty
- Downtime greater than five (5) Minutes: 50% penalty

Downtime and penalty amounts will be measured on a monthly basis. Penalties will be calculated as a percentage of Required Component monthly fees, and in no event exceed 50% of such fees. County will notify Contractor if it wishes to receive a credit for any applicable penalty, within 30 days after such occurrence. Any applicable penalties will be credited to the County within sixty (60) days of such request.



RFP #23-0568-RFP

Title: 9-1-1 Core Services

### Technical Requirements

Contractor's solution must be able to route 911 calls in accordance with the i3 Standard via transitional legacy tabular data or by geo-spatial data when available.

Contractor's solution must include a "no single point of failure" design architecture.

Contractor's solution must agree that all system traffic and data is kept within the United States.

Contractor's solution must maintain at least two (2) diverse end to end carrier ESInet connection from each of the redundant NGCS core's to each geo-diverse VESTA Host A/B equipment locations. The Proposer should include optional costs to maintain additional diverse network connectivity via LTE, Satellite, etc. to each Vesta Host A/B equipment locations.

Contractor is responsible for all aspects of the ESInet regardless of carrier affiliation including term agreements and maintenance.

Contractor is responsible for ingress management and maintaining connection agreements with all Originating Service Providers (OSP's).

Contractor is responsible for network-to-network integration and connection to all counties contiguous to the County, regardless of their 911 service provider.

Contractor must test with all neighboring NGCS providers that are actively providing NGCS services to other counties and provide all test results prior to the County's NGCS go live date.

Contractor's solution must be able to transfer 911 calls (voice and ANI at a minimum) to counties that remain on legacy local exchange carrier tandem systems for an unknown length of time at no additional cost to the County.

Contractor's solution must be able to transfer wireless 911 calls to counties that are utilizing stand-alone legacy selective routers/wireless gateways.

Contractor's solution must connect and be compatible with the existing version and release of the County's Motorola VESTA 911 CHE. If required, the proposer must provide a legacy gateway as necessary for connectivity.

The Contractor must assume responsibility for database management, processing Service Order Input (SOI) records for the wireline carriers and establishing a Location Information Server (LIS) for location validation and for dereferencing queries.

Contractor's solution must ultimately have the ability to provide 911 call location data in the SIP header (by reference or value) upon receipt of a 911 call and prior to delivery to the Emergency Service Routing Proxy (ESRP) in the i3 format.

The HELD interface must support the delivery of additional data as defined in IETF RFC 7852.

The Location Database (LDB) must allow for the creation of additional data blocks for wireless subscribers, keyed off the wireless subscriber's cell phone number. This additional data must be included in the HELD response providing the LDB retrieves the wireless callback number from the E2 query.

The Web interface must support allowing service providers or other authorized users to add additional data to each record as defined in IETF RFC 7852. At a minimum, an authorized user must be able to add, edit or delete additional data blocks for a record. Supported additional data blocks must include:

- Data Provider information
- Service information
- Device information
- Owner / Subscriber information
- Comments
- Comments

Contractor's solution must state if text to 911 inbound/outbound is a component of their NGCS offering. If so, it should NOT be included in the design; however, an optional cost should be noted in the pricing section of the response.

Contractor's solution must be compliant with Real Time Text (RTT) to the PSAP when the service becomes universally available.

Contractor must provide as an option, a Disaster Recovery (DR) backup solution that supports re-routing of PSAP 911 call traffic to a separate backup system, device, or service in the event that the Motorola VESTA 911 CHE is out of service.

Contractor must provide as an option, an alternative 911 call routing solution in the event there is a loss of service via the 911 call routing network.

Contractor's solution must include a method to record all calls taken by the optional DR system, device, or service while activated.

Contractor's solution must include a Management Information System (MIS) solution to track and view performance statistics from the 911 routing, network, and CHE perspective.

- The solution must have a means to display real time network activity and awareness.
- The solution must have the ability to display historical call location information from a spatial viewpoint for up to one year.
- The solution must provide authorized user access to real-time network observation, portal management tools, and training.
- The solution must have the ability to be automated and be able to email to recipients outside of the 911 network.
- The Solution needs to provide a secure pathway to extract spatial historical call location information out of the 911 network to the county's network for additional analysis or processing.

Contractor's solution must have security measures in place meeting or exceeding NENA i3 and NENA NG-SEC standards. A process must be in place to monitor the security of the service 24 hours per day. It must

be able to identify any security vulnerabilities in real time as well as stay up to date on any fixes related to the NGCS system and supporting ESInet including patch management, code upgrades, etc.

Contractor's solution must comply with the Certificate Policy issued by the Next Generation 911 Interoperability Oversight Commission (NIOC), and all entities must have credentials traceable to the PSAP Credentialing Agency.

Contractor's solution must meet or exceed current industry security standards and measures to protect the system from Data Denial of Service (DDoS) or Telephony Denial of Service (TDoS) attacks and describe the solution in their response. Solution must state if text to 911 inbound/outbound is a component of their NGCS offering. If so, it should NOT be included in the design; however, an optional cost should be noted in the pricing section of the response.

Contractor's solution must be compliant with Real Time Text (RTT) to the PSAP when the service becomes universally available.

Contractor must provide as an option, a Disaster Recovery (DR) backup solution that supports re-routing of PSAP 911 call traffic to a separate backup system, device, or service in the event that the Motorola VESTA 911 CHE is out of service.

Contractor must provide as an option, an alternative 911 call routing solution in the event there is a loss of service via the 911 call routing network.

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Contractor's solution must include a Management Information System (MIS) solution to track and view performance statistics from the 911 routing, network, and CHE perspective.

The solution must have a means to display real time network activity and awareness.

The solution must have the ability to display historical call location information from a spatial viewpoint for up to one year.

The solution must provide authorized user access to real-time network observation, portal management tools, and training.

Contractor will provide the County training on and access to the following user guides:

1. Intrado Customer Management Portal User Guide
2. Intrado Enterprise Geospatial Database Management System (EGDMS) User Guide
3. Intrado A9-1-1 Standard Reports User Guide

The solution must have the ability to be automated and be able to email to recipients outside of the 911 network.

The Solution needs to provide a secure pathway to extract spatial historical call location information out of the 911 network to the county's network for additional analysis or processing.

Contractor's solution must have security measures in place meeting or exceeding NENA i3 and NENA NG-SEC standards. A process must be in place to monitor the security of the service 24 hours per day. It must be able to identify any security vulnerabilities in real time as well as stay up to date on any fixes related to the NGCS system and supporting ESInet including patch management, code upgrades, etc.

Contractor's solution must comply with the Certificate Policy issued by the Next Generation 911 Interoperability Oversight Commission (NIOC), and all entities must have credentials traceable to the PSAP Credentialing Agency.

Contractor's solution must meet or exceed current industry security standards and measures to protect the system from Data Denial of Service (DDoS) or Telephony Denial of Service (TDoS) attacks and describe the solution in their response.

Contractor's solution must include the database management of legacy wireline records within the County to include ANI management, add/change/delete management with originating service providers, static record delivery, and ALI discrepancy management.

#### Project Implementation Requirements

Contractor must take the lead and work closely with vendors that are currently providing products or services that are components of the County 911 system to ensure no capability or feature is lost after the transition to NGCS. It is the Proposer's responsibility to identify any incompatibilities, red flags or roadblocks. The Proposer must manage this process and include the associated tasks and results as part of the project management process.

Contractor must provide a "Certificate of Systems Readiness (COSR)" that validates all components that are part of the County 911 call taking and dispatch system are compatible and tested as part of the pre-cutover "Acceptance Test Plan (ATP)".

Contractor must agree to work with any new vendor over the course of the contract period to ensure related systems or services are fully vetted and are consistent with the COSR implementation process.

Contractor must agree to work with other NGCS providers in the event their service is no longer required after the contract period has expired.

Contractor must coordinate a pre-cutover functional performance and reliability test of all network components. A County approved pre-cutover ATP must be established by the proposer and a record of test results must be documented and provided in a report format before the service can be cutover.

Contractor must monitor the reliability of components for a period of 45 days post-cutover. This includes, but is not limited to, the system components, network components, and legacy network components in order to ensure the 911 call routing service is functioning properly as designed. If any service or major component fails during the monitoring period, the 45-day period will reset, unless the issue causing a component failure was not the fault of the provider, its subcontractors/partners, and/or the overall service team.

Contractor must develop a punch list for minor issues with course of action and resolution prior to final acceptance (all failure criteria will be established during contract negotiations). A final system reliability report outlining system monitoring and successful results must be provided in order to gain final acceptance of the service.

Contractor must provide an inventory of on-premises ancillary equipment and the methodology used to interface with existing 911 systems. It is the responsibility of the provider to plan for the replacement, re-termination, and testing of all ancillary equipment connections prior to system cutover.

Contractor must include as part of the final 911 system acceptance, an electronic set of as-built service drawings in pdf and Visio format.

Contractor must address all necessary training for authorized County and/or PSAP personnel including general system users, administrators, or technical support.

- Must include basic technical and administrative training for contracted CHE technicians who will be providing front line support for service-related issues.

### Standards

Submissions for this RFP should be a standards-based solution that follows national organizational laws, rules, and policies for technical requirements.

National Emergency Number Association (NENA) Standards - All equipment and services for the proposed solution should comply with the National Emergency Number Association (NENA) standards that are considered final as of the release of this RFP. It is understood that some of these standards may be under revision at any time during the RFP process, in which case the last published final standard will be used as reference. Proposer agrees to comply with the latest version of the NENA standards that specify any of the Core Services or ESInet within six (6) months of their issuance at no additional cost to the County.

- NENA-STA-010.3a-2021 (formerly NENA 08-003), Detailed Functional and Interface Specification for the NENA i3 Solution
- NENA 08-002, NENA Functional and Interface Standards for Next Generation 91-1 Version 1.0 (i3)
- NENA 08-751, NENA i3 Technical Requirements Document
- NENA 04-001, Recommended Generic Standards for E911 PSAP Equipment
- NENA 75-001, Security for Next Generation 911 Standard (NG-SEC)
- NENA – INF 15.1-2016, NENA NG911 Security Information Document
- NENA 04-503, Network/System Access Security
- NENA 75-502, Next Generation Security Audit Checklist
- NENA – INF-016.2-2018 (formerly 08-506), Emergency Services IP Network Design for NG911

- NENA 08-752, Location Information to Support IP-Based Emergency Services Requirements
- NENA 71-502, an Overview of Policy Rules for Call Routing and Handling in NG911
- NENA-STA-003, NENA Standard for NG911 Policy Routing Rules - Applicable Internet Engineering Task Force Standards (IETF), such as IP protocols, IP routing protocols, SIP, RTP, LoST, and PIDF-LO3
- NENA-STA-006.1.1-2020, NENA Standard for NG911 GIS Data Model
- NENA STA-015.10-2018 (Originally 02-010), NENA Standard Data Formats for E9 1 1 Data Exchange & GIS Mapping
- NENA-STA-012.2-2017 NENA Standard for NG911 Additional Data

Where applicable, all equipment proposed to support or operate the system should comply with applicable industry standards, including the following:

- Underwriters Laboratories (UL) or other Nationally Recognized Testing Laboratory (NRTL)
- International Organization of Standards (ISO)
- Open System Interconnection (OSI)
- Institute of Electrical and Electronics Engineers (IEEE)
- American National Standards Institute (ANSI)
- Electronic Industries Alliance (EIA)

Telecommunications Industry Association (TIA)—including ANSI/EIA/TIA-568, Commercial Building Telecommunications Wiring Standards

**Exhibit D – Compensation**

<b>Pricing Totals - Population - 956,615</b>						
<u>Item No.</u>	<u>Required Component</u>	<u>Unit of Measure</u>	<u>Price per Month</u>	<u>X 12 Months</u>	<u>X 60 Months</u>	<u>Total</u>
1	Monthly recurring (MRC) NGCS/ESInet/MIS	per Population	\$ 70,125.00	\$ 841,500.00	\$ 4,207,500.00	\$ 4,207,500.00
2	Non-recurring (NRC) NGCS Implementation	Lump Sum				\$ 0.00
				<b>Total 5 Year NRC and MRC:</b>		<b>\$ 4,207,500.00</b>
	<b><u>Optional Component</u></b>					
3	MRC Disaster Recovery	per Population	\$ 14,440.00	\$ 173,280.00	\$ 866,400.00	\$ 866,400.00
4	MRC LTE Diverse Network	per Population	\$ 550.00	\$ 6,600.00	\$ 33,000.00	\$ 33,000.00
5	MRC Satellite Network	per Population	\$ 550.00	\$ 6,600.00	\$ 33,000.00	\$ 33,000.00
6				<b>Total 5 Year Optional MRC:</b>		<b>\$ 932,400.00</b>
<b>Total Project:</b>						<b>\$ 5,139,900.00</b>

## 5. INSURANCE REQUIREMENTS

### 5.1. INSURANCE (General)

The Vendor must provide a certificate of insurance and endorsement in accordance with the insurance requirements listed below, prior to recommendation for award. The Vendor shall obtain and maintain, and require any subcontractor to obtain and maintain, at all times during its performance of the Agreement in Phase 1 insurance of the types and in the amounts set forth. For projects with a Completed Operations exposure, Vendor shall maintain coverage and provide evidence of insurance for 2 years beyond final acceptance. All insurance policies shall be from responsible companies duly authorized to do business in the State of Florida and have an AM Best rating of VIII or better.

### 5.2. INSURANCE (Requirements)

- A. Submittals should include, the Vendor's current Certificate(s) of Insurance. If Vendor does not currently meet insurance requirements, Vendor shall also include verification from their broker or agent that any required insurance not provided at that time of submittal will be in place prior to the award of contract. Upon selection of Vendor for award, the selected Vendor shall email certificate that is compliant with the insurance requirements. If the certificate received is compliant, no further action may be necessary. The Certificate(s) of Insurance shall be signed by authorized representatives of the insurance companies shown on the Certificate(s).
- B. **The Certificate holder section shall indicate Pinellas County, a Subdivision of the State of Florida, 400 S Fort Harrison Ave, Clearwater, FL 33756. Pinellas County shall be named as an Additional Insured for General Liability. A Waiver of Subrogation for Workers Compensation shall be provided if Workers Compensation coverage is a requirement.**
- C. Approval by the County of any Certificate(s) of Insurance does not constitute verification by the County that the insurance requirements have been satisfied or that the insurance policy shown on the Certificate(s) of Insurance is in compliance with the requirements of the Agreement. County reserves the right to require a certified copy of the entire insurance policy, including endorsement(s), at any time during the Bid and/or contract period.
- D. If any insurance provided pursuant to the Agreement expires or cancels prior to the completion of the Work, you will be notified by CTrax, the authorized vendor of Pinellas County. Upon notification, renewal Certificate(s) of Insurance and endorsement(s) shall be furnished to Pinellas County Risk Management at [InsuranceCerts@pinellascounty.org](mailto:InsuranceCerts@pinellascounty.org) and to CTrax c/o JDi Data at [PinellasSupport@ididata.com](mailto:PinellasSupport@ididata.com) by the Vendor or their agent prior to the expiration date.
  1. Vendor shall also notify County within twenty-four (24) hours after receipt, of any notices of expiration, cancellation, nonrenewal or adverse material change in coverage received by said Vendor from its insurer Notice shall be given by email to Pinellas County Risk Management at [InsuranceCerts@pinellascounty.org](mailto:InsuranceCerts@pinellascounty.org). Nothing contained herein shall absolve Vendor of this requirement to provide notice.



2. Should the Vendor, at any time, not maintain the insurance coverages required herein, the County may terminate the Agreement,.
- E. If subcontracting is allowed under this Bid, the Primary Vendor shall obtain and maintain, at all times during its performance of the Agreement, insurance of the types and in the amounts set forth; and require any subcontractors to obtain and maintain, at all times during its performance of the Agreement, insurance limits as it may apply to the portion of the Work performed by the subcontractor; but in no event will the insurance limits be less than \$500,000 for Workers' Compensation/Employers' Liability, and \$1,000,000 for General Liability and Auto Liability if required below.
1. All subcontracts between the Vendor and its Subcontractors shall be in writing and are subject to the County's prior written approval. Further, all subcontracts shall
    - a. Require each Subcontractor to be bound to the Vendor to the same extent the Vendor is bound to the County by the terms of the Contract Documents, as those terms may apply to the portion of the Work to be performed by the Subcontractor;
    - b. Provide for the assignment of the subcontracts from the Vendor to the County at the election of Owner upon termination of the Contract;
    - c. Provide that County will be an additional indemnified party of the subcontract;
    - d. Provide that the County will be an additional insured on all insurance policies required to be provided by the Subcontractor except workers compensation and professional liability;
    - e. Provide a waiver of subrogation in favor of the County and other insurance terms and/or conditions
    - f. Assign all warranties directly to the County; and
    - g. Identify the County as an intended third-party beneficiary of the subcontract. The Vendor shall make available to each proposed Subcontractor, prior to the execution of the subcontract, copies of the Contract Documents to which the Subcontractor will be bound by this Section C and identify to the Subcontractor any terms and conditions of the proposed subcontract which may be at variance with the Contract Documents.
- F. Each insurance policy and/or certificate shall include the following terms and/or conditions:
1. The Named Insured on the Certificate of Insurance and insurance policy must match the entity's name that responded to the solicitation and/or is signing the agreement with the County.
  2. Companies issuing the insurance policy, or policies, shall have no recourse against County for payment of premiums or assessments for any deductibles which all are at the sole responsibility and risk of Vendor.

3. The term "County" or "Pinellas County" shall include all Authorities, Boards, Bureaus, Commissions, Divisions, Departments and Constitutional offices of County and individual members, employees thereof in their official capacities, and/or while acting on behalf of Pinellas County.
4. All policies shall be written on a primary, non-contributory basis.

The minimum insurance requirements and limits for this Agreement, which shall remain in effect throughout its duration and for two (2) years beyond final acceptance for projects with a Completed Operations exposure, are as follows:

### 5.3. WORKERS' COMPENSATION INSURANCE

Worker's Compensation Insurance is required if required pursuant to Florida law. If, pursuant to Florida law, Worker's Compensation Insurance is required, employer's liability, also known as Worker's Compensation Part B, is also required in the amounts set forth herein.

#### A. Limits

1. Employers' Liability Limits Florida Statutory
  - a. Per Employee \$ 500,000
  - b. Per Employee Disease \$ 500,000
  - c. Policy Limit Disease \$ 500,000

If Vendor is not required by Florida law, to carry Workers Compensation Insurance in order to perform the requirements of this Agreement, County Waiver Form for workers compensation must be executed, submitted, and accepted by Risk Management. The County Waiver Form is found at <https://pinellas.gov/services/submit-a-workers-compensation-waiver-request/>. Failure to obtain required Worker's Compensation Insurance without submitting and receiving a waiver from Risk Management constitutes a material breach of this Agreement.

### 5.4. COMMERCIAL GENERAL LIABILITY INSURANCE

Includes, but not limited to, Independent Vendor, Contractual Liability Premises/Operations, Products/Completed Operations, and Personal Injury. No explosion, collapse, or underground damage exclusions allowed.

#### A. Limits

1. Combined Single Limit Per Occurrence \$ 1,000,000
2. Products/Completed Operations Aggregate \$ 2,000,000
3. Personal Injury and Advertising Injury \$ 1,000,000
4. General Aggregate \$ 2,000,000

## 5.5. PROFESSIONAL LIABILITY ( TECHNOLOGY ERRORS AND OMISSIONS) INSURANCE

Minimum limits as follows. If “claims made” coverage is provided, “tail coverage” extending three (3) years beyond completion and acceptance of the project with proof of “tail coverage” to be submitted with the invoice for final payment. In lieu of “tail coverage”, Proposer may submit annually to the County, for a three (3) year period, a current certificate of insurance providing “claims made” insurance with prior acts coverage in force with a retroactive date no later than commencement date of this contract.

### A. Limits

1. Each Occurrence or Claim \$ 5,000,000
2. General Aggregate \$ 5,000,000

- B. For acceptance of Professional Liability coverage included within another policy required herein, a statement notifying the certificate holder must be included on the certificate of insurance and the total amount of said coverage per occurrence must be greater than or equal to the amount of Professional Liability and other coverage combined.

## 5.6. PROPERTY INSURANCE

Vendor will be responsible for all damage to its own property, equipment and/or materials.



**Exhibit F – Intrado Statement of Work**

Intrado Life & Safety, Inc. Statement of Work

Solicitation #23-0568-RFP

**Prepared for Pinellas County, FL**



**June 29, 2023**



# CONTENTS

- 1. Intention..... 3
- 2. Overview of Intrado i3 Services ..... 3
  - 2.1. i3 Services Standard Features and Functions ..... 3
- 3. Project Management Approach..... 10
- 4. Project Scope ..... 12
  - 4.1 Intrado Pinellas County Focused Resources ..... 12
- 5. Milestones..... 14
  - 5.1. Definition Phase ..... 14
  - 5.2. Architecture Phase..... 14
  - 5.3. Integration Phase ..... 16
  - 5.4. Deployment Phase ..... 16
  - 5.5. Maintenance Phase..... 17
- 6. Training ..... 17
  - 6.1. Location Database Training..... 17
  - 6.2. Spatial Interface Training ..... 17
  - 6.3. Standard Reports Training ..... 17
  - 6.4. Customer Management Portal Training..... 17
  - 6.5. Trouble Ticket System Training ..... 17
- 7. Schedule..... 18
- 8. Change Management Plan ..... 18
- 9. Responsibility Assignment Matrix/ RACI..... 19
- 10. Communication Plan..... 19
  - 10.1. Communication Plan for Individual PSAPs ..... 19
- 11. Quality Management Plan ..... 19
- 12. Risk Management Plan ..... 19
- 13. Documentation ..... 19



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13.1.	Initial Documentation .....	19
13.2.	Project Status Documents.....	20
13.3	Data Collection Forms.....	20
13.4.	Testing Templates.....	20
13.5.	User Guides.....	21
	Appendices.....	22
	Appendix A: Pinellas Project Plans.....	22
	Appendix B: RACI Matrix.....	22
	Appendix C: GIS Roles and Expectations.....	22
	Appendix D: Intrado Pre-Migration Test Plan_i3.....	22
	Appendix E: Intrado Shared Event Plan_i3 Conversion .....	22



## 1. Intention

This Statement of Work (SOW) is intended to define the work/services that Intrado will provide to the County. It will include a description and/or appendix for each task, deliverable, and/or goods or products comprising the services Intrado will provide, as well as a proposed completion schedule for each task or deliverable.

## 2. Overview of Intrado i3 Services

Below is a description of the services being provided.

The following components are included in the i3 solution:

1. All elements and features included in the IPSR solution
2. ESInet with Certificate Management for authenticated data bids from the Public Safety Answering Point (PSAP)
3. Functional Routing Elements for Call Delivery
  1. Emergency Services Routing Proxy (“ESRP”)
  2. Emergency Call Routing Function (“ECRF”)
  3. Location Information Server (“LIS”) Interface
  4. Additional Data Repository (“ADR”) Interface
  5. Spatial Interface (“SI”)
  6. Location Validation Function (“LVF”)

### 2.1. i3 Services Standard Features and Functions

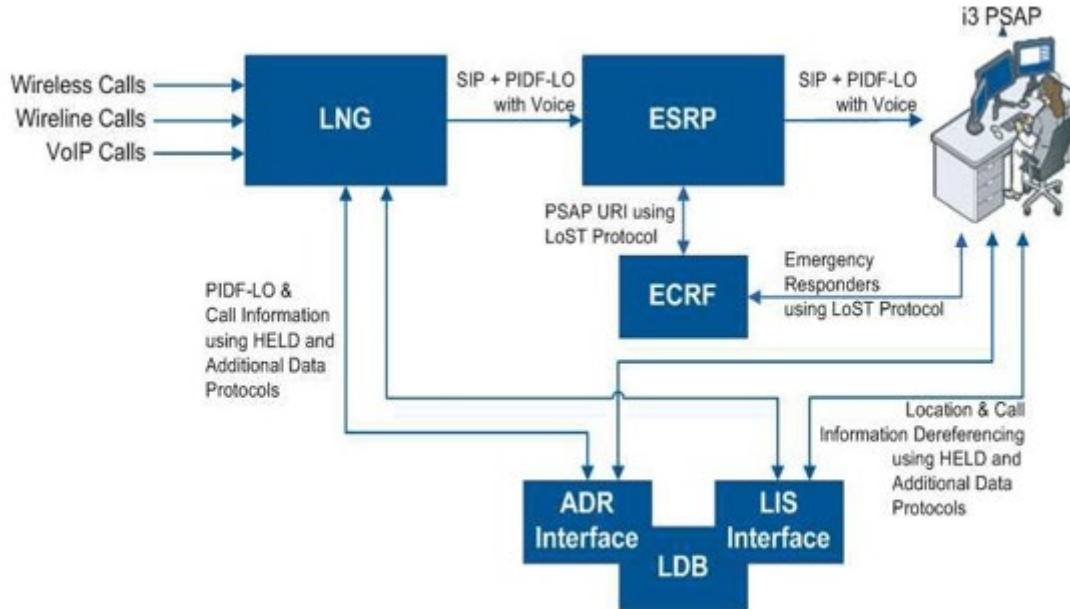
i3 Services provide Customers with SIP-based call routing compliant with i3 functionality as referenced in NENA Detailed Functional and Interface Standards (i3 Reference Architecture). Intrado will continue to evaluate both recent and future changes to the specification and update pertinent core services when deemed necessary and acceptable. Note that not all functionality described within the specification has had market demand and as such not all described functionality is included in i3 Services.

i3 Services include the following:

1. An ESInet to deliver 9-1-1 voice SIP/PIDF-LO to the PSAP as well as supplemental data as defined in the i3 Reference Architecture.
2. Routing calls and enhanced data utilizing i3 functional elements and open standard protocols, as defined in the i3 Reference Architecture. These functions include the call routing components (BCF, LNG, LIS Interface, ADR Interface, ESRP, PRF, and ECRF) as well as the GIS data provisioning components (SI, LVF).



Note that the LIS Interface and ADR Interface, as well as their associated Location Database (LDB), are not a part of the end-state i3 architecture. These functions are designed to be provided by the OSP. Until OSPs are providing their own LISs and ADRs, this is an interim functional interface included with i3 Services.



i3 Services deliver emergency calls in an i3 format to the PSAP. The i3 format includes PIDF-LO. The i3 SIP INVITE delivered to the PSAP (terminating ESRP) includes (as available) both geodetic and civic location elements and additional data, conveyed by value and/or reference from the LIS and ADR [formerly referred to as the Call Information Database (“CIDB”)] responses.

For PSAPs that are i3 enabled, i3 Services supports the following interfaces as documented in NENA Detailed Functional and Interface Specification for the NENA i3 Solution-Stage 3.

1. ESRP-Terminating ESRP Interface
2. ECRF-Legacy Location to Service Translation (“LoST”) Interface
3. LIS-HTTP-Enabled Location Delivery (“HELD”) Interface
4. Additional Data Interface (“ADR”)
5. LVF-LoST Interface

Intrado will provide CPE interface specifications for i3 connections upon request.

### 2.1.1 Emergency Call Routing Function





A core i3 component of i3 Services is the ECRF which enables i3 GIS-based routing, emergency responder determination, and the return of URIs for location specific ADRs. The ECRF provides the capability to determine the correct URI (location) for the requested Uniform Resource Name (“URN”) based on either civic or geodetic location elements within the PIDF-LO. The Intrado ECRF supports <findService>, <listServices> and <listServicesByLocation> LoST queries.

Customer’s GIS data is uploaded to the ECRF through the SI. Updates to the data set for any reason are supported through the SI as well. Validated GIS updates are normalized and applied to the ECRF production instances in a manner that preserves availability and coordinates with other ESInet scheduled updates and activities.

Each ECRF element maintains two copies of each map layer, an active one that processes the LoST queries and an inactive one. New updates are applied to the inactive directory. Once processing is complete for all ECRF instances, the ECRF system will notify the SI that the load was successful and make the inactive map layer active. If for some reason the load was unsuccessful, the ECRF system will pass that result along to the SI, which will send out alarm notifications. If this occurs, the previously active map layer will remain active.

For expediency during call processing, the geodetic location is utilized by the ESRP for routing determination, allowing the ECRF to use a point-in-polygon lookup. Routing and other services can also be determined based on civic address when geodetic locations are unavailable.

Polygon sets for each service URN (name) a Customer would like to support must be included via the SI for validation and implementation in the ECRF. The PSAP may query the ECRF for additional service URNs associated with the location. The PSAP may also query the ECRF for the URI associated with an ADR specific to the civic location provided in the LoST request. If that information is provisioned with the PSAP’s Address Point data, the ADR URI will be returned.

The ECRF supports additional service layers, such as Poison Control or Animal Control, and is capable of handling alternate service layers that when combined with the PRF, provide optional advanced call routing functions beyond what the NENA specifications require. See i3 Routing Optional Features Section 2.3.4 for advanced call routing functions available with this service.

Additionally, if the ECRF receives a request for a location outside its coverage area, it will send an iterative query to the National Forest Guide, once it is available. Absent the National Forest Guide, the ECRF has the capability of storing coverage areas for other ECRFs. When a request for a location that falls outside of its own coverage area is received, the ECRF will check to see if the location falls within another known coverage area and send a recursive query to that ECRF and per RFC 5222, pass that response along to the requesting system.

Certain functions of the ECRF, such as those associated with gap/overlap detection and event notifications are handled on independent servers, so these functions never interfere with the critical call-time activities of the ECRF.



### 3.1.2 Spatial Interface (SI)

The SI serves as the single resource for GIS data updates for provisioning of the ECRF. This allows for consistency between the various i3 transitional elements and i3 core services that utilize the data. Specifically, the SI supports:

1. Secure GIS file transfer
2. Automated schema change detection and error notification
3. Automated email notifications for file upload and processing status

GIS updates are provisioned through the SI, which performs GIS validations, including those to ensure routing integrity. The quality assurance/quality control processes conducted during the validation steps prevent any unwanted boundary gaps or overlaps from being provisioned in the ECRF. The SI can also be configured to check for duplicate features, as these will adversely impact the ECRFs ability to return a valid response for a given location. A change control system is used to monitor and manage data discrepancies and to track data change requirements.

#### 2.1.3. Location Information Service (LIS) and Additional Data Repository (ADR) Interfaces

The LIS provides the location of end points, including location by reference and location by value (geodetic or civic). Intrado provides a LIS interface that draws its location information from an LDB.

Whereas the carriers (OSPs) are responsible for building and maintaining the LIS, there have been limited deployments of this i3 functional element to date. With that in mind, Intrado has built a transitional LIS solution that leverages an interface into the ALI database that supports HELD queries in conformance with RFC 5985. The ALI database serves as the LDB during carrier transition to NENA i3 compliance. Intrado will maintain the HELD interface to its ALI platform to simultaneously support legacy PSAPs and i3 PSAPs.

The HELD interface into the Intrado LDB (aka Regional LIS or Public Sector LIS) is leveraged by the LNG to retrieve PIDF-LO, either by value or reference, to be delivered to the PSAP within the SIP messaging. The HELD interface is also presented to the PSAP CPE to provide dereferencing services and/or provide location updates for wireless calls. Note that not all ALI fields map to PIDF-LO, for example Class of Service and Customer Name. For these fields, the LNG supports Additional Data protocol (draft-ietf-ecrit-additional-data-28) to retrieve these data fields via the ADR. The ADR information, when combined with PIDF-LO will provide data equating to legacy ALI equivalency. The ability to utilize this information is dependent on the capabilities of the CPE.

Intrado uses an LNG to provide the mechanism to obtain the caller's location at the time of the call by using the LIF to query the caller's appropriate LIS database, be it via the LIS interface into the LDB or a carrier LIS once available.

#### 2.1.4. Emergency Services Routing Protocol (ESRP)

The ESRP replaces the ECR system for i3 Services. The ESRP, a NG9-1-1 functional element, is a SIP proxy server that selects the next routing hop within the ESInet based on location and policy. There is at least



one ESRP within the ESN. There may be several intermediate ESRPs in the call path. PSAPs with SIP CPE will typically have a terminating ESRP on premise.

The ESRP provides i3 compliant routing functionality with i3 compliant interfaces and features. The ESRP processes ingress calls using Session Initiation Protocol (“SIP”) signaling with location embedded in the PIDF-LO from i3 compliant carrier networks, from legacy carriers or selective routers via the LNG, or from an upstream i3 ESRP and routes calls to the appropriate terminating ESRP (PSAP) according to the caller’s location and the PSAP-configured routing policy.

When the ESRP receives an ingress call, it evaluates the SIP INVITE geolocation header within the PIDF-LO. If the geolocation header contains location by reference, the ESRP queries the LIS via the HELD interface. The LIS provides the dereferencing service and responds with the routable geodetic and/or civic location value. The ESRP then queries the ECRF via the LoST protocol with the caller’s geodetic and/or civic address location to identify destination URI for the call.

Using the location-determined URI retrieved from the ECRF via the LoST protocol, the ESRP interacts with the PRF to determine call routing.

Policy route determination includes evaluation of the PSAP-configured routing policy, the caller’s location (for geospatially determined alternate routing policies), the PSAP operational state, and the ring-no-answer timer configuration.

The ESRP supports N-way bridging and call transfers using i3 SIP REFER and subscribe/notify messaging. i3 PSAPs can transfer calls to both i3 and non-i3 compliant PSAPs. Subscribe/notify messaging allows the PSAP or secondary PSAP to take control over the call bridge once the call has been transferred.

#### 2.1.5. Policy Routing Function (PRF)

The PRF is a functional component of the ESRP. It manages and controls rules and policies for routing calls to PSAPs. PSAPs define these rules and policies.

#### 2.1.6. ESN Back-up Routing

i3 Services provides PSAPs with peace of mind by supporting multiple default routing fallback options until carriers transition to i3-compliant call delivery and/or for when GIS location information is not available or incomplete. Fallback to legacy ESN or NRF routing is optionally supported at no additional charge to ensure every call is routed to the appropriate PSAP even if VoIP or wireless carriers do not deliver or pre-provision routable location values or if carrier-provisioned records are error treated. If the ESRP has to utilize the fallback ESN or NRF routing scheme, it will continue to deliver the call and location information in the i3 SIP and PIDF-LO formats. This innovative solution provides for extreme reliability for the routing of calls.

#### 2.1.7. ESN Routing with i3 Protocols

A fully i3 compliant implementation requires very high-quality GIS data for routing and location validation. While this is the preferred solution, Intrado is in a position to provide a transitional solution that will fully interface with an i3 compliant CPE provider. Intrado can leverage existing functionality in



its Services solution to route the call to an i3 compliant PSAP. The four i3 interfaces required by the PSAP for full compliance are:

1. An ESRP to Terminating ESRP interface for call setup using an i3 compliant SIP invite that includes PIDF-LO (location by value) and/or location by reference as well as Additional Data associated with the call as provided by the ADR.
  2. A HELD protocol interface to retrieve updated location information from the LIS Interface identified in the SIP messaging as the source to dereference a location that is provided by reference.
  3. An Additional Data protocol interface to retrieve additional call information.
  4. A LoST protocol interface into the ECRF for the retrieval of responder selective transfer information.
- 2.1.8. Reports

Services provide Customer with up to three user accounts per Customer PSAP for access to Service Performance Reports. These reports can be queried based on a daily, weekly, or monthly basis. Updates for reports refreshed daily are posted by 9:00 AM Mountain Time (MT), and updates to monthly data sets are posted by the sixth business day of each month immediately following the reporting month. Customer will be able to access one year of data through the reporting tool. Customer report requests older than one year are out of scope and subject to change order.

Support services for the reporting tool are provided during Intrado Normal Business Hours, defined as Monday through Friday 8:00 AM to 5:00 PM Mountain Time, excluding Intrado holidays.

The following are standard reports provided for Services:

1. Event Count Report per Hour: provides metrics for total calls in which Customer's PSAP participated by hour for a day, week, or month.
2. Event Count Report by Trunk Group: provides metrics for total calls in which Customer's PSAP participated and provides metrics for calls attempted, calls transferred out, and calls transferred in.
3. Event Count by Routing Reason and Destination: Indicates counts where Customer's PSAP participated as the Primary versus Alternate, whether the call was answered or busy, for Default versus Selective routed, and for call where the destination was "Not Available" (includes abandoned, rejected, transferred, and handed-off calls); provides metrics for total calls, initial calls, and calls transferred out/in for each category.
4. Event Count by Type: Indicates counts by call type (wireless, wireline, VoIP) where Customer's PSAP is primary, and provides metrics for total calls, initial calls, calls transferred out, and calls transferred in.
5. Event Count by Incoming Trunk: Indicates the number of calls sent to Customer's PSAP by each trunk, and provides metrics for total calls, initial calls, calls transferred out, and calls transferred in for each category.
6. Bridge Call Summary: provides metrics for calls bridged in or out by bridge type (fixed, selective, manual). Call detail is available for each bridged call.



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7. Routing Database Processing: provides a breakout of initial calls where Customer's PSAP was Primary by selectively routed versus default routed with a NRF breakout.
  1. Event Setup Time: provides statistics on the time to route and deliver calls where your PSAP is Primary, including the minimum, maximum, median, and average times.



### 2.1.9. Customer Management Portal (CMP)

The CMP is a web-based tool that allows authorized users to view Services configurations for their respective PSAP, including call transfers, routing, and other configurations. In addition, the user may research Call Detail Records for call activity based on a specific date range.

The CMP provides the following information for a specific PSAP:

1. Provisioned PSAP contact information and feature subscription information
2. PSAP's current operational state (e.g., in-service or abandoned) and a link to a 90-day history of the PSAP's operational state
3. Information about the provisioned Abandonment Route List such as name and pilot number of the PSAP that will receive calls when a PSAP is abandoned
4. A list of PSAPs that have your PSAP as the primary destination in their route list
5. Selective Transfer and Bridge list (speed dial) for TNs associated with first responders (e.g., other PSAPs) associated with the ESN of the caller's TN
6. Fixed transfer and Bridge list (speed dial) for frequently called numbers such as 'poison control'
7. Statewide PSAP directory (as applicable) which can be used by any PSAP in a state to contact any other PSAP in the same state
8. Call Detail Records ("CDRs"): view CDRs for which your PSAP was either a primary or alternate participant. Each CDR is built for each destination while processing the call. The information is divided into the following categories:
  1. Call start
  2. Answer
  3. Call disconnect

Support services for the CMP are provided during "Intrado Normal Business Hours," defined as Monday through Friday 8:00 AM to 5:00 PM Mountain Time, excluding Intrado holidays.

### 3. Project Management Approach

During the implementation of the NG9-1-1 network, Intrado's dedicated Program Manager will act as the single point of contact with the Pinellas County and its consultants (if applicable). The Intrado Program Manager will address all action items and convey the responses back to Pinellas County during the build and i3 onboarding phase of the project.

The Intrado Program Manager (PgM) will be guided by the principles established by the Project Management Institute (PMI®) in order to plan, schedule, and implement project activities, meeting industry recognized standards of quality, reporting frequency, and control. The PgM will be responsible for multiple complex projects from conception through implementation. The PgM will develop and



implement PSAP specific project plans, design schedules, identify problems and alternate courses of action to ensure projects are completed within corporate objectives exceeding customer expectations.

Upon completion of the new agreement, the PgM will engage team members throughout the Intrado organization to help ensure their commitment and understanding of the project requirements. The PgM will schedule a kickoff meeting with the Pinellas County and other required Intrado organizations. During the kickoff meeting, meeting participants will establish roles and responsibilities and reach a mutual agreement with the jurisdiction on strategic objectives, plan of approach, priorities and timelines.

Using the information gathered during the meeting, the PgM, the County, and PSAP will create an integrated master work plan that will be incorporated into the NG9-1-1 Tracker which is used to track i3 PSAP migrations and report status to both PSAPs and the County. Throughout the project, Intrado will focus on project planning and execution to help ensure a successful transition to i3 NG9-1-1.

The PgM will conduct regularly scheduled project status calls with Pinellas County and key Intrado stakeholders. Normally, these status calls are held on a weekly basis and cover the following topics:

1. Overall Project Status – Red/Yellow/Green
2. Project Timeline and Key Milestones
3. Issues log review
4. Key Deliverables status

The PgM will use the Microsoft Suite of Products to manage all projects as a standard operating procedure. Products will include:

1. Microsoft Word
2. Microsoft Excel
3. Microsoft Project
4. Microsoft Visio
5. Microsoft Outlook
6. Project Management Methodology

The characteristics of a project may be determined by many factors: strategic importance, size, scope, schedule, cost and duration, as well as many others. This methodology is scalable to accommodate all types of projects.

The Project Management Methodology utilizes a six-phase project life cycle:

1. Definition Phase
2. Architecture Phase



- 3. Integration Phase
- 4. Deployment Phase
- 5. Maintenance Phase

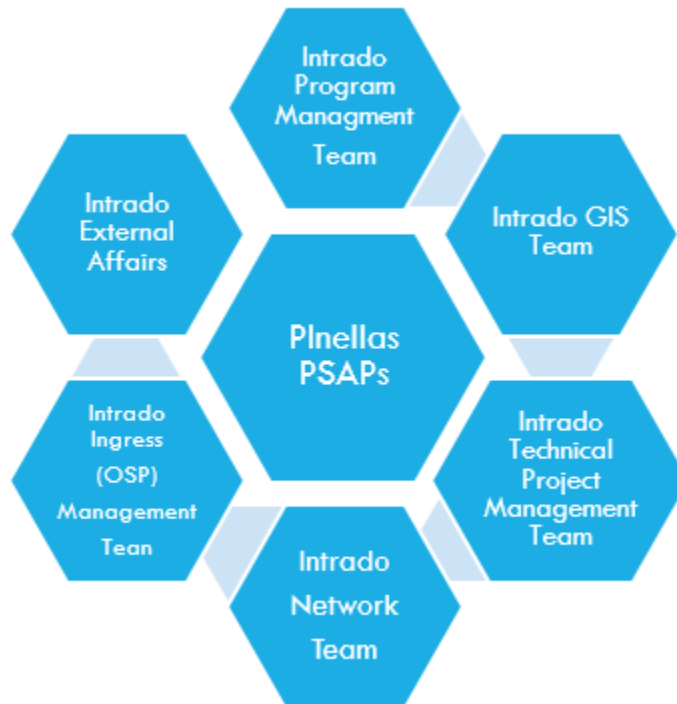
Individual tasks and milestones of each phase will be tracked in the NG9-1-1 Tracker document used by the PgM and shared with the County during weekly calls. Milestones are described in *Section 5. Milestones*.

A Pinellas County specific project plan can be found in Appendix A. This includes tasks, deliverables, and timelines for the delivery of any/all services.

4. Project Scope

The overall project scope of work will be for Intrado to successfully migrate the Pinellas PSAPs from the current Intrado A9-1-1 network to Intrado i3 A9-1-1 services that include the Emergency Services IP Network (ESInet) and i3 Next Generation Core Services (NGCS). The Intrado A9-1-1 Service provides Originating Service Providers with both Legacy (TDM) and Next Generation (IP/i3) Points of Interconnect (POI). It also provides the egress network from the Intrado A9-1-1 Core Sites to the PSAPs' CPE locations.

4.1 Intrado Pinellas County Focused Resources



Intrado has local account teams located in Florida that have overall responsibility for the account management of the majority of the counties/PSAPs within Florida. Intrado also has dedicated Public





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Safety Service Management teams and a robust External Affairs organization, all willing to advance the current state of public safety within Pinellas County.



## 5. Milestones

The following milestones will be tracked in the NG9-1-1 Tracker by the Intrado Program Manager. The milestones are listed per phase of the project.

### 5.1. Definition Phase

#### 5.1.1. Ingress Network Data Collection

Ingress Network Data Collection requires Intrado to work with the PSAPs and other sources to identify the OSPs and their contact information to complete interconnection agreements.

#### 5.1.2. PSAP Data Collection

Intrado works with the PSAPs to complete an extensive Initial Discovery Survey. This information will be used to provision the Intrado A9-1-1 application.

#### 5.1.3. PSAP Site Survey

The Site Survey is required in order for Intrado to understand the physical attributes of the PSAP. This information will be utilized to determine the site readiness of the PSAP and the exact equipment and cabling required.

#### 5.1.4. GIS Data Preparation

GIS Data Preparation entails setting PSAPs up with access to the Intrado A9-1-1 Spatial Interface (EGDMS) and submitting their data for validation. This milestone is only applicable for PSAPs who are ready to submit GIS data.

#### 5.1.5. ALI Data Preparation

ALI Data Preparation entails the configuring the Intrado LDB for the PSAP. This milestone is only applicable for PSAPs not currently utilizing Intrado ALI.

### 5.2. Architecture Phase

#### 5.2.1. PSAP Site Remediation

Review of customer PSAP site requirements with feedback on areas that need remediation before project completion.

#### 5.2.2. Ingress Network Design

Ingress Network Design includes ILEC interconnection agreements, inter-local agreements, split rater center design, and other OSP interconnection design.

#### 5.2.3. Egress Network Design

Egress Network Design includes the PSAP AVPN and LAN connection design





### 5.3. Integration Phase

#### 5.3.1. POI to Aggregation Site Network

POI to Aggregation Site Network is composed of the POI to aggregation site circuit orders as well as the trunk specific orders for those circuits.

#### 5.3.2. Legacy Selective Router Interconnection

Legacy Selective Router Interconnection involves the circuit ordering to the Legacy Selective Routers, provisioning of trunks into A9-1-1 and circuit testing.

#### 5.3.3. PSAP Equipment Installation

PSAP Equipment Installation involves ordering, configuring, shipping, and testing of PSAP equipment (routers, LPGs, PDUs).

#### 5.3.4. Egress Network Turn Up

Egress Network Turn Up consists of confirming PSAP site remediation is complete as well as ordering, configuring, and testing of the egress circuits to the PSAP.

#### 5.3.5. ECATS Configuration

Configuration and installation of Remote Data Distribution Modules (RDDM) by technicians.

#### 5.3.6. GIS Data Provisioning

Provisioning of GIS data into the ECRF and LVF. This milestone is only applicable for PSAPs who are ready to submit GIS data via the EGDMS.

#### 5.3.7. LDB Data Provisioning

Loading of ALI/MSAG data into the Intrado LDB. This milestone is only applicable for PSAPs not currently utilizing Intrado ALI.

#### 5.3.8. PSAP CPE Provisioning

This milestone tracks the creation of digital certificates for LIS/ADR/ECRF/TCC/MSRP.

### 5.4. Deployment Phase

#### 5.4.1. Event Planning

Confirmation of PSAP and CPE readiness, coordinate voice cutover with Legacy Selective Router providers, scheduling of pre-cutover, operational readiness testing and cutover testing.

#### 5.4.2. Pre-Cutover Systems Validation

Final verification of ingress network, CPE, A9-1-1/ESInet readiness. Verification of network monitoring and day 2 support team readiness.



### 5.4.3 Operational Readiness Testing

Operational Readiness Testing is completed to demonstrate the network and call processing equipment readiness to receive 9-1-1 traffic.

### 5.4.4. Cutover Testing

Cutover Testing is the final step in onboarding a PSAP onto Intrado the A9-1-1 platform. During this event, live 9-1-1 traffic is tested and moved over to Intrado A9-1-1 Service.

## 5.5. Maintenance Phase

### 5.5.1. OSP Direct Connections

Migration of the OSPs' ingress connections from the Legacy Selective Router will continue into the maintenance phase as OSPs will migrate.

## 6. Training

Training is user specific and as such has been broken down by application below as not all users will get the same access to the different applications.

### 6.1. Location Database Training

Location Database (LDB) training applies both PSAP users that maintain the MSAG records along with OSP resources which maintain their records in the LDB (formerly ALI). This training takes place during the Definition Phase of the project and is applicable to PSAPs and OSPs which are not part of the current Intrado footprint in Pinellas County. For existing Intrado PSAPs and OSPs with coverage in these areas will continue to maintain ALI/LDB through the processes they utilize today.

### 6.2. Spatial Interface Training

Spatial Interface (SI) training applies only to those users who submit their GIS data via the Spatial Interface to be uploaded to the ECRF/LVF. SI training takes place during Definition Phase of the project and is required to be completed before a PSAP moves to geospatial routing. If a PSAP deploys using tabular routing, then GIS training is not a prerequisite and will be removed from the implementation steps.

### 6.3. Standard Reports Training

Intrado will provide training to the appropriate Pinellas personnel for how to access gather, download and potentially utilize Intrado Standard A9-1-1 reports.

### 6.4. Customer Management Portal Training

Intrado will provide quarterly training for the Customer Management Portal (CMP). Users will also be provided a copy of the CMP User Guide (see Appendix F).

### 6.5. Trouble Ticket System Training



There is no formal training offered for using the Intrado trouble ticket system. Informal training is completed during participant onboarding by the Intrado PgM. The process to report a trouble ticket is addressed below.

**Intrado 9-1-1 NOC Contact**

While providing services to the PSAP there will be times where it is necessary for the PSAP, Intrado Network or Vendor partners to contact the Intrado 9-1-1 NOC to resolve technical and/or procedural issues, provide updates or to notify the Intrado 9-1-1 NOC of current activities or report cases of trouble. Below are the activities that would require the PSAP, Intrado Network or Vendor partners to contact the 9-1-1 Resolution Center and the processes that should be followed.

**Contacting the Intrado A9-1-1 NOC to Report Trouble**

1. In the case where the PSAP, Intrado Network and or Vendor partners are made aware of a trouble condition that has impacted the CPE, network elements, 9-1-1 call completion or the delivery of location information, it is requested that the 9-1-1 Resolution Center must be notified (if possible) prior to taking any action. Once notified the 9-1-1 Resolution Center will open a trouble ticket and provide the reporting agency/organization with the ticket number.
1. The reporting agency/organization must provide the 9-1-1 Resolution Center with the following information when reporting trouble.
  1. Description of trouble – The description must include
    1. The impact to services, e.g., cannot receive 9-1-1 calls, not receiving location information, cannot transfer, etc.
    1. The impact to equipment, e.g., the phone at position 5 (number 312-740-xxxx) cannot receive calls
  1. Location of trouble, e.g., the PSAP, backup Center
  2. Name of the person and agency/organization reporting the trouble, e.g., John Smith at the NMC
  3. Call back number of the person and agency/organization reporting the trouble
  4. The ticket number (if any) that was generated by the reporting agency/organization
  5. Actions that were taken (if any) to resolve the trouble prior to contacting the 9-1-1 Resolution Center
  7. Schedule

The PgM will track the schedule of onboarding PSAPs using the NG9-1-1 Tracker. Individual PSAP schedules will be created based on participation agreement, data collection, and other inputs from the PSAP.

8. Change Management Plan



Intrado understands that PSAP specific data such as CPE manufacture, version, location, and other items can change after PSAPs complete the data collection survey. In these instances, the PSAP should immediately contact the PgM. Based on the type of change, the PgM will work with the PSAP to update the appropriate document(s). These changes will be captured and signed off on by the PSAP. The PgM will modify the schedule as needed and communicate the changes in schedule for the PSAP.

#### 9. Responsibility Assignment Matrix/ RACI

The RACI matrix (Appendix B) describes each task captured in the project schedule. The RACI shows the Responsible, Accountable, Consulted, and Informed resources for each task.

#### 10. Communication Plan

The PgM will be the primary point of contact for Pinellas County and the PSAPs. They will coordinate and schedule any ad-hoc meetings outside of the regularly scheduled meetings should a need arise.

##### 10.1. Communication Plan for Individual PSAPs

The PgM will schedule a project kickoff call with all PSAP representatives once the participation agreement has been completed. After the project kickoff, the PgM will coordinate calls with PSAPs on an as-needed basis to communicate status, outstanding action items, risks, and any issues related to the PSAP specific project. Status meetings with individual PSAPs will align with Project Milestones and, therefore, be scheduled on an as-needed basis. These status meetings will utilize the meeting minutes document below to document project activities.

#### 11. Quality Management Plan

Quality management is an on-going collaborative process with both Intrado and Pinellas County evaluating each phase of the project. Applicable testing and performance measures are employed to evaluate the meeting of each of the stated goals within each phase. Throughout each of the six distinct project phases, the five iterative process groups of Initiating, Planning, Executing, Monitoring and Controlling, and Closing will be used. Each of the five processes is applied within each project phase. Many times, changes occur within the life cycle of a project and process groups must be repeated.

#### 12. Risk Management Plan

The Intrado A9-1-1 systems are highly robust and tested extensively prior to release. In any implementation and cutover, there are always risks. Intrado has checkpoints built into the event plan to ensure a smooth deployment. Intrado will utilize the risk matrix that is built into the NG9-1-1 Tracker to identify, assess, and prioritize any potential risks to minimize the probability and/or impact of unfortunate events or maximize the realization of opportunity. Intrado will share this matrix during weekly status calls with the County. The risk matrix is a living document and will be updated as risks are mitigated, or new risks are identified.

#### 13. Documentation

##### 13.1. Initial Documentation



Intrado will provide all initial documentation described below and work with Pinellas (if requested) to customize documentation requirements.

#### 13.1.1 Initial Discovery Survey

The Initial Discovery Survey is completed by the PSAP and used by Intrado to collect individual PSAP requirements and data to define routing rules of all inbound emergency calls to the PSAP in accordance with established preferences and customer needs.

#### 13.1.2. GIS Roles and Expectations Document

The purpose of this document (Appendix C) is to provide the 9-1-1 Authority with information on the following:

1. Best practices for GIS data preparation.
2. GIS data provisioning considerations.
3. Field mapping considerations between Legacy 9-1-1 and NG9-1-1 GIS data.

#### 13.2. Project Status Documents

##### 13.2.1 NG9-1-1 Tracker

The Intrado A9-1-1 Project tracker will be used by the PgM to communicate status to the Pinellas County. This template provides overall status of all PSAPs as well as an issues log, risk matrix, and individual PSAP deployment tracker.

##### 13.2.2. Meeting Minutes Template

The meeting minutes template will be used by the PgM for the meetings held with Pinellas County. Meeting minutes will track attendees, action items, issues and any risks associated to individual PSAP projects.

#### 13.3 Data Collection Forms

##### 13.3.1. Letter of Authorization

The Letter of Authorization is provided to the PSAPs for signature to authorize Intrado as the PSAPs' agent in working with OSPs to move from the Legacy Selective Routers to the new Points of Interconnect for the Intrado A9-1-1 Solution.

##### 13.3.2. PSAP Site Survey

Specific building, location, and technical information is required in order for Intrado to understand the physical attributes of the PSAP.

Management Portal (CMP) and Spatial Interface. Customer specific information is required to complete.

#### 13.4. Testing Templates

##### 13.4.1. i3 Pre-Migration Test Plan





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The Intrado A9-1-1 i3 Pre-Migration Test Plan (Appendix D) provides an overview of testing and a list and description of test cases for the implementation of the Intrado A9-1-1 services. The objective for this test plan is to demonstrate the network and call processing equipment readiness to receive 9-1-1 traffic via i3 protocols using the Intrado A9-1-1 service. The document below is an example, and the ORT will be customized per PSAP.

#### 13.4.2 i3 Conversion Shared Event Plan

The Intrado A9-1-1 i3 Conversion Shared Event Plan (Appendix E) provides an overview of testing and a list and description of test cases for the testing and cutover of live 9-1-1 traffic to Intrado A9-1-1 Solution.

### 13.5. User Guides

#### 13.5.1 CMP User Guide

The Customer Management Portal (CMP) is a web-based application (Appendix F) that provides access to one or more PSAP-level accounts deployed on Intrado's A9-1-1 Emergency Services platform

#### 13.5.2. EGDMS User Guide

The 9-1-1 Enterprise Geospatial Database Management System (9-1-1 EGDMS) is a web application (Appendix G) that serves as the front-end user interface for the NENA Spatial Interface (SI) requirement.

#### 13.5.3 Intrado A9-1-1 Standard Reports User Guide

The Intrado A9-1-1 reports are accessed through a web-based application (Appendix H) for viewing, printing, and exporting reports. The User Guide provides users with information on how to access the reports as well as general description of each report.



## Appendices

Please see the project and user documents below and attached to this document.

### Appendix A: Pinellas Project Plans



PSAP  
Implementation Proj



PSAP  
Implementation Proj

### Appendix B: RACI Matrix



Pinellas%20RACI%20Matrix.xlsx

### Appendix C: GIS Roles and Expectations



Intrado A9-1-1 GIS  
Data Roles and Expe

### Appendix D: Intrado Pre-Migration Test Plan\_i3



Pre-Migration Test  
Plan\_i3.pdf

### Appendix E: Intrado Shared Event Plan\_i3 Conversion



Shared Event  
Plan\_i3 Conversion.i

# Appendix A Pinellas Project Plans

PSAP Implementation Project Plan_Pinellas FL Direct v2																					
ID	Task Name	% Complete	Duration	Predecessors	Successors	Resource Names	Week -2	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15	Week 17	Week 19	Week 21	Week 23	Week 25	
1	Final Contract Award and Project Start	0%	0 days					◆													
2	<b>NGCS PSAP Implementation Project Plan with existing LNG</b>	0%	<b>117 days</b>					▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶
3	<b>Definition Phase</b>	0%	<b>74 days</b>					▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶
4	<b>Project Initiation</b>	0%	<b>1 day</b>					■													
5	Process and Send Intrado Service Order Request, along with all pre-sale work products	0%	1 day	6		Intrado,psap		■													
6	Service Order Request Received	0%	0 days	5	8	Intrado		◆													
7	<b>Service Order Acceptance</b>	0%	<b>3 days</b>					■													
8	Review Service Order	0%	3 days	6	9	Intrado		■													
9	Service Order Acceptance and include Intrado PSAP ID	0%	0 days	8	11	Intrado		◆													
10	<b>Customer Kick-Off Meeting</b>	0%	<b>3 days</b>					■													
11	Presentation, materials, and discussion - Project team and customer	0%	2 days	9	12	Intrado		■													
12	Conduct PSAP Customer Kick off	0%	1 day	11	19FF+2 wks,14,63	Intrado		■													
13	<b>PSAP Data Collection Form</b>	0%	<b>20 days</b>					■	■	■	■	■	■	■	■	■	■	■	■	■	■
14	Work with PSAP to complete Data Collection Form	0%	20 days	12	16SS,30,36	Intrado		■	■	■	■	■	■	■	■	■	■	■	■	■	■
15	<b>PSAP User Data Collection for Portals</b>	0%	<b>20 days</b>					■	■	■	■	■	■	■	■	■	■	■	■	■	■
16	Collect User Data for Intrado portal provisioning	0%	20 days	14SS	30,18,34	Intrado		■	■	■	■	■	■	■	■	■	■	■	■	■	■
17	<b>GIS Data Preparation</b>	0%	<b>27 days</b>						■	■	■	■	■	■	■	■	■	■	■	■	■

PSAP Implementation Project Plan\_Pinellas FL Direct v2

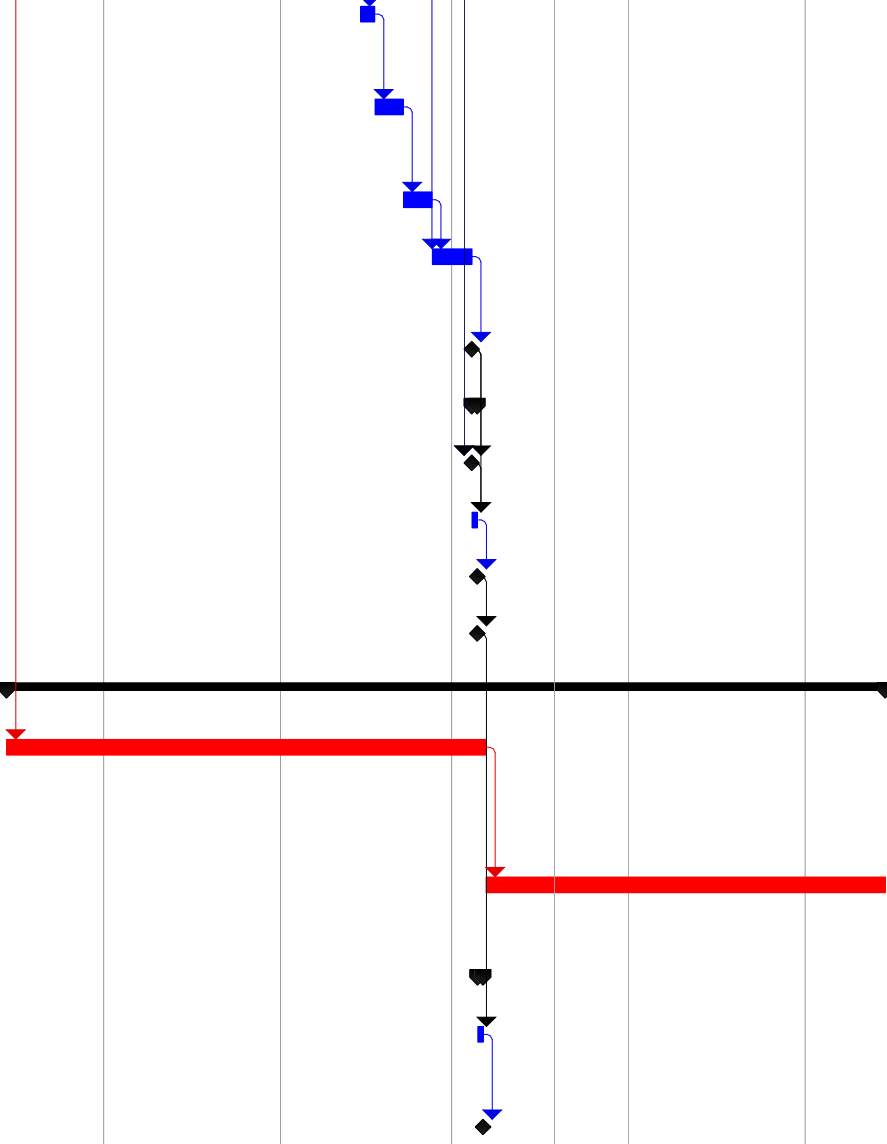
ID	Task Name	% Complete	Duration	Predecessors	Successors	Resource Names	Week -2	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15	Week 17	Week 19	Week 21	Week 23	Week 25	
18	Provision PSAP GIS Data Authority users in EGDMS and portal	0%	5 days	16	20	Intrado															
19	Training session #1	0%	1 day	12FF+2 wks	22FF+3 wks, 20FF+2 wks	Intrado															
20	Customer submits GIS Data	0%	1 day	19FF+2 wks	21	GIS Authority															
21	Initial error report provided	0%	0 days	20	23,22	Intrado															
22	Training session #2	0%	1 day	19FF+3 wks		Intrado															
23	Work to correct errors and map fields	0%	10 days	21	24FF	GIS Authority															
24	Resubmit GIS Data	0%	2 days	23FF	25	GIS Authority															
25	GIS Data Preparation Complete	0%	0 days	24	30,27,35	GIS Authority, Intrado															
26	<b>GIS Data Compare</b>	<b>0%</b>	<b>31 days</b>																		
27	Intrado GIS team completes GIS analysis for i3 routing (ALI compare)	0%	10 days	25	28	Intrado															
28	GIS authority to perform remediation as needed until accuracy is at 98% (Intrado will perform a total of 2 compares)	0%	20 days	27	29	GIS Authority															
29	GIS authority to submit final updates for load to ECRF and LVF	0%	1 day	28	30	GIS Authority															
30	Data Collection Complete	0%	0 days	25, 14, 16, 29	31																
31	Definition Phase Complete	0%	0 days	30																	
32	<b>Integration Phase</b>	<b>0%</b>	<b>21 days</b>		<b>38</b>																
33	<b>PSAP #1 Data Provisioning</b>	<b>0%</b>	<b>21 days</b>																		
34	Provision PSAP GIS Data Authority users in EGDMS (if ready for i3)	0%	1 day	16	35,37	Intrado															
35	Provision GIS Data in EGDMS (if ready for i3)	0%	5 days	34,25	37	GIS Authority															

PSAP Implementation Project Plan\_Pinellas FL Direct v2

ID	Task Name	% Complete	Duration	Predecessors	Successors	Resource Names	Week -2	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15	Week 17	Week 19	Week 21	Week 23	Week 25	
36	Provision PSAP and PSAP Data in all additional NGCS Applications dependent on PSAP interface RFAI or i3 - ESRP (Both), ECRF/LIS/ADR interface (i3 only)	0%	5 days	14	37	Intrado															
37	Provisioning Complete	0%	0 days	34,35,36	51																
38	Integration Phase Complete	0%	0 days	32	42																
39	<b>Deployment Phase - PSAP #1</b>	<b>0%</b>	<b>117 days</b>																		
40	<b>Pre-Cutover Planning and Testing</b>	<b>0%</b>	<b>64.5 days</b>																		
41	<b>Event Planning</b>	<b>0%</b>	<b>6 days</b>																		
42	Confirm PSAP Site Readiness - CPE Installed and provisioned	0%	1 day	38	47,43	Intrado															
43	Create Cutover Event Plan and Review with stakeholders	0%	4 days	42	44	Intrado															
44	Schedule Migration Event with Internal resources	0%	1 day	43	58,45	Intrado															
45	Schedule Migration Event with Customer	0%	0 days	44	58	Intrado															
46	<b>Pre-Cutover Systems Verification</b>	<b>0%</b>	<b>51 days</b>																		
47	Verify Ingress Network and PSAP CPE ready	0%	2 days	42	55	Intrado															
48	Verify Intrado A911 systems ready per checklist	0%	2 days	49SS		Intrado															
49	Verify Monitoring in place	0%	2 days	48SS		Intrado															
50	<b>Testing</b>	<b>0%</b>	<b>16.5 days</b>																		
51	Create Provisioning Pre-Test Plan	0%	3 days	37	52	Intrado															

PSAP Implementation Project Plan\_Pinellas FL Direct v2

ID	Task Name	% Complete	Duration	Predecessors	Successors	Resource Names	Week -2	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15	Week 17	Week 19	Week 21	Week 23	Week 25	
52	Review and Approve Test Plan w/PSAP	0%	2.5 days	51	53	Intrado,psap															
53	Schedule Pre-cutover testing with PSAP and CPE vendor	0%	3 days	52	54	Intrado															
54	Setup test number dialer	0%	3 days	53	55	Intrado															
55	Perform Pre-cutover/Operational Readiness Testing	0%	5 days	47,54	56	Intrado															
56	Pre-Cutover Testing Complete	0%	0 days	55	58,59																
57	<b>PSAP Customer Cutover - PSAP #1</b>	<b>0%</b>	<b>1 day</b>																		
58	Go / No Go for Cutover	0%	0 days	44,45,56	59	Intrado,psap															
59	Systems Cutover Event	0%	1 day	58,56	60	Intrado															
60	Cutover Complete	0%	0 days	59	61																
61	PSAP Voice Live	0%	0 days	60	66																
62	<b>PSAP Deployment - Balance Of PSAPs</b>	<b>0%</b>	<b>110 days</b>																		
63	Execute PSAP deployment prep steps for balance of PSAPs - prep can be run concurrently	0%	3 mons	12	64	Intrado,psap															
64	Schedule and execute PSAP cutovers for balance of PSAPs	0%	2.5 mons	63		Intrado															
65	<b>Maintenance Phase</b>	<b>0%</b>	<b>1 day</b>																		
66	Handoffs for ongoing System Maintenance and Support	0%	1 day	61	67																
67	NOC Monitoring and Support Begins	0%	0 days	66																	



<b>Appendix B RACI Matrix</b>	<b>Pinellas County</b>	<b>PSAP</b>	<b>Intrado Program/Lifecycle Manager</b>	<b>Intrado Sales</b>	<b>Intrado Technician/Technical Resources</b>
Initial Sales kickoff	C	I	I	RA	
Technical Questionnaire	C	RA	I	I	
LOA	C	RA	I	I	
OSP list and contact information	I	RA	C	I	
OSP Contact, MSC and EO (includes FSR information)	I	C	RA		
Confirm Interconnection Agreements w/ OSPs	I	I	RA	I	
Create Jurisdiction Rate Center Maps	I	I	RA	I	
ESInet Project Kickoff			RA	I	I
Customer Kick-Off Meeting	C	C	RA	I	
PSAP Data Collection Form	I	R	A	I	
PSAP User Data Collection for Portals	I	R	A	I	
Collect User Data for Intrado portal provisioning	I	R	A	I	
Conduct PSAP site visit	I	I	A	I	R
Complete site assessment	I	I	A	I	R
Aggregation Site Evaluation	I	I	A	I	R
Validate Specific PSAP Requirements (carrier circuits, last mile,circuit sizing etc)	I	I	A	I	R
Collect Data and Build LDB System Tables	I	C	A	I	R
Data Collection for TSPs/Third Party Providers/PSAPs	I	C	RA	I	
Configure LDB	I	I	A	I	R

Provision PSAP GIS Data Authority users in EGDMS and portal	I	C	A	I	R
Customer submits GIS Data	I	RA	C	I	I
Initial error report provided	I	I	A	I	R
Work to correct errors and map fields	I	RA	C	I	I
Resubmit GIS Data	I	RA	C	I	I
Intrado GIS team completes GIS analysis for i3 routing (ALI compare)	I	C	A	I	R
GIS authority to perform remediation as needed until accuracy is at 98% (Intrado will perform a total of 2 compares)	I	R	A	I	I
GIS authority to submit final updates for load to ECRF and LVF	I	R	A	I	I
Review Customer PSAP Site Requirements	I	C	A	I	R
ILEC interconnection requirements	I	I	A	I	R
Facilitate inter-local agreements	I	I	A	I	R
Legacy SR interconnection paths	I	I	A	I	R
Split rate center design	I	I	A	I	R
OSP interconnection design	I	I	A	I	R
Ingress Network Design review/finalized	I	I	A	I	R
Customer PSAP AVPN connection design	I	I	A	I	R
Customer PSAP LAN design	I	I	A	I	R
Create POI Facility	I	I	A	I	R
Physical Work	I	I	A	I	R
POI to Agg Site Circuit Orders	I	I	A	I	R
POI to Agg Site Trunk Orders	I	I	A	I	R
Confirm FSR 9-1-1 contacts	I	I	A	I	R



Circuit orders to LSRs	I	I	A	I	R
Trunk orders to LSRs	I	I	A	I	R
Submit Originating and Transfer Trunk Orders	I	I	A	I	R
Transfer Trunk Test and Turn Up	I	I	A	I	R
Provision Trunks in ESInet	I	I	A	I	R
FSR Circuit Testing	I	I	A	I	R
Confirm gain settings	I	I	A	I	R
Order PSAP Equipment Hardware	I	I	A	I	R
Schedule equipment Installation with PSAP	I	I	A	I	R
Configure hardware	I	I	A	I	R
Ship PSAP Equipment to PSAP	I	C	A	I	R
Installation of Hardware	I	C	A	I	R
Equipment install and Circuit Test and Turn-up	I	C	A	I	R
Confirm PSAP site remediation is complete	I	R	A	I	C
Circuit orders at PSAP	I	C	A	I	R
Circuit test and turn up	I	C	A	I	R
ESINet Interconnection test and network failover testing	I	C	A	I	R
Provision PSAP and PSAP Data in ESRP	I	I	A	I	R
Provision GIS data in ECRF	I	I	A	I	R
Provision GIS data in LVF	I	I	A	I	R
Load Data to LDB	I	I	A	I	R
Process all queued and begin ongoing TN & MSAG Delta processing for TSS	I	I	A	I	R
Run existing LDB records against GIS data, obtain x/y, and provision	I	I	A	I	R

Create digital certificate for LIS,ADR,ECRF, and TCC/MSRP as required	I	I	A	I	R
Provide default URL for LIS/ADR bid	I	I	A	I	R
Assign PSAP URI's for transfers and primary routing	I	I	A	I	R
Create OSP Notification letter	I	I	A	I	R
PSAP approval of OSP Notification letter	I	R	A	I	
Send OSP Notification of Voice Transition	I	I	RA	I	
Confirm PSAP Site Readiness - CPE Installed and provisioned	I	R	A	I	C
Coordinate voice cutover schedule per FSR/ILEC per PSAP	I	C	RA	I	C
Create Cutover Event Plan and Review with stakeholders	I	C	A	I	R
Schedule Migration Event with Internal resources	I	I	RA	I	C
Schedule Migration Event with Customer	I	C	RA	I	I
Verify Ingress Network and PSAP CPE ready	I	C	A	I	R
Verify ESInet systems ready	I	I	A	I	R
Verify Monitoring in place	I	I	A	I	R
Verify Intrado NOC has NOC to NOC Communications in place	I	I	RA	I	I
Create Provisioning Pre-Test Plan	I	I	A	I	R
Review and Approve Test Plan w/PSAP	I	C	RA	I	C
Schedule Pre-cutover testing with PSAP and CPE vendor	I	C	RA	I	I

Setup test number dialer	I	I	A	I	R
Perform Pre-cutover/Operational Readiness Testing	I	C	A	I	R
Go / No Go for Cutover	I	C	RA	I	C
Systems Cutover Event	I	C	A	I	C
Facilitate OSP circuit orders	I	I	RA	I	C
Provision, test, and turn up OSP trunks	I	I	A	I	R
Handoffs for ongoing System Maintenance and Support	I	I	A	I	R



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**Intrado Life & Safety, Inc.**  
**A9-1-1 GIS Data Provisioning**  
**Roles and Expectations**  
Version 3

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## Contents

<b>1.0</b>	<b>Introduction</b> .....	<b>1</b>
1.1	Definitions, Acronyms, and Abbreviations.....	1
<b>2.0</b>	<b>GIS Data Preparation Process</b> .....	<b>4</b>
2.1	Meet the i3 GIS Data Minimum Requirements .....	4
2.2	Document Standards for Addressing .....	4
2.3	Apply Standards to MSAG and GIS Data .....	4
2.4	Establish Authoritative/Provisioning Boundary .....	5
2.5	Perform GIS Validation on PSAP and Responder Boundaries.....	5
2.6	Validate Road Centerline and Address Point Data .....	5
2.7	Perform an MSAG to GIS Comparison .....	6
2.8	Perform an ALI to GIS Comparison .....	6
2.9	Develop An Ongoing GIS Data Maintenance Plan .....	6
<b>3.0</b>	<b>Roles and Responsibilities</b> .....	<b>7</b>
<b>4.0</b>	<b>GIS Data Provisioning</b> .....	<b>8</b>
4.1	Initial GIS Data Submission .....	8
4.2	GIS Data Validation and Error Correction.....	8
4.2.1	EGDMS Critical Errors.....	8
4.2.2	URI Values and Validation.....	9
4.3	i3 System Provisioning.....	9
<b>5.0</b>	<b>GIS Data Provisioning Timeframes</b> .....	<b>10</b>
<b>6.0</b>	<b>NENA NG9-1-1 GIS Data Format Considerations</b> .....	<b>11</b>
6.1	Originating Service Provider (OSP) Participation.....	11
6.2	Continued Use of Legacy Elements in the Transitional Period.....	13
6.2.1	MSAG Community in NG9-1-1 .....	13
6.2.2	Synchronizing the MSAG with GIS.....	14
6.2.3	Street Name Considerations.....	14
6.2.4	House Number Considerations.....	15
<b>7.0</b>	<b>Conclusion</b> .....	<b>17</b>

## Table of Figures

Figure 1: NENA i3 OSP Requirements.....	11
Figure 2: Next Generation Interactions with Legacy Systems.....	12

## Table of Tables

Table 1: Definitions, Acronyms, and Abbreviations .....	1
Table 2: Roles and Responsibilities.....	7
Table 3: GIS Data Readiness and i3 Provisioning Steps .....	10
Table 4: Suggested MSAG Community Field Mapping .....	13
Table 5: Suggested Street Name Elements Field Mappings.....	15
Table 6: Suggested House Number Field Mappings.....	16

## 1.0 Introduction

Geographic Information System (GIS) data is considered critical in the Next Generation 9-1-1 (NG9-1-1) architecture as defined in NENA i3 (NENA 08-003) standards. In preparation for making the transition to and successfully implementing an ESInet with i3 services, it is necessary for 9-1-1 Authorities to maintain an accurate and up to date GIS dataset. NENA has recommended a 98+% match between the Master Street Address Guide (MSAG) and its equivalent road centerline feature class in the GIS data, but there are many additional recommended best practices and suggestions that should be followed. This document describes the recommended process for achieving GIS data integrity standards suitable for geospatial call routing purposes and details the preparations for submitting GIS data to the ESInet via the Enterprise GIS Data Management System (EGDMS). The Intrado Life & Safety, Inc. GIS data schema requirements are included in the EGDMS User Guide. This document also covers considerations associated with the transition from legacy 9-1-1 data management to NG9-1-1 GIS-based data management.

The purpose of this document is to provide the 9-1-1 Authority with information on the following:

- Best practices for GIS data preparation.
- GIS data provisioning considerations.
- Field mapping considerations between Legacy 9-1-1 and NG9-1-1 GIS data.

## 1.1 Definitions, Acronyms, and Abbreviations

**Table 1: Definitions, Acronyms, and Abbreviations**

Term	Definition
ADR	<b>Additional Data Repository</b>
ALI	<b>Automatic Location Identification</b>
AQS	<b>ALI Query Service</b>
CAD	<b>Computer Aided Dispatch</b>
CIDB	<b>Call Information Database</b>
CPE	<b>Customer Premises Equipment</b>
DBMS	<b>Database Management System</b>
E2	<b>Wireless Emergency Service Protocol Interface</b>
ECRF	<b>Emergency Call Routing Function</b>
EGDMS	<b>Enterprise GIS Data Management System</b>
EMS	<b>Emergency Medical Services</b>
ES	<b>Emergency Services</b>
ESInet	<b>Emergency Service IP Network</b>
ESN	<b>Emergency Services Number</b>
ESRP	<b>Emergency Services Routing Proxy</b>

Term	Definition
<b>ESSID</b>	<b>Electronic Switching System Identifications</b>
<b>GeoMSAG</b>	<b>A GIS-based MSAG that is derived from the road centerline GIS data.</b>
<b>GIS</b>	<b>Geographic Information System</b>
<b>GMLC</b>	<b>Gateway Mobile Location Center</b>
<b>HELD</b>	<b>HTTP-Enabled Location Delivery</b>
<b>HTTP</b>	<b>HyperText Transfer Protocol</b>
<b>i3</b>	<b>NENA issued the document Detailed Functional and Interface Specification for the NENA i3 Solution-Stage 3, commonly known as the i3 Standard, to describe the end-state architecture required for the next generation of 9-1-1 service.</b>
<b>ID</b>	<b>Identification</b>
<b>LDB</b>	<b>Location Database</b>
<b>LIS</b>	<b>Location Information Server</b>
<b>LNG</b>	<b>Legacy Network Gateway</b>
<b>LoST</b>	<b>Location-to-Service Translation</b>
<b>LVF</b>	<b>Location Validation Function</b>
<b>MCS</b>	<b>MSAG Conversion Service</b>
<b>MPC</b>	<b>Mobile Positioning Center</b>
<b>MSAG</b>	<b>Master Street Address Guide</b>
<b>NENA</b>	<b>National Emergency Number Association</b>
<b>NG9-1-1</b>	<b>Next Generation 9-1-1</b>
<b>OSP</b>	<b>Originating Service Provider</b>
<b>PCN</b>	<b>Postal Community Name</b>
<b>PIDF-LO</b>	<b>Presence Information Data Format – Location Object</b>
<b>POD</b>	<b>Post Directional</b>
<b>PRD</b>	<b>Prefix Directional</b>
<b>PSAP</b>	<b>Public Safety Answering Point Location of the call takers who answer the 911 call.</b>
<b>RD</b>	<b>Road</b>
<b>RFC</b>	<b>Request for Comments</b>
<b>SIP</b>	<b>Session Initiation Protocol</b>
<b>SOI</b>	<b>Service Order Input</b>
<b>STS</b>	<b>Street Name Suffix</b>
<b>TN</b>	<b>Telephone Number</b>
<b>URI</b>	<b>Uniform Resource Identifier</b>
<b>URN</b>	<b>Uniform Resource Name</b>



Term	Definition
<b>VoIP</b>	<b>Voice over Internet Protocol (IP)</b>
<b>VPC</b>	<b>VoIP Positioning Center</b>
<b>WGS84</b>	<b>World Geodetic System 1984</b>
<b>X/Y</b>	<b>Coordinates (longitude, latitude) for a given location</b>

## 2.0 GIS Data Preparation Process

The following are recommended steps for the 9-1-1 Authority/GIS Data Maintenance Provider to prepare GIS data for use within the A9-1-1 System:

- Meet the i3 GIS data minimum requirements.
- Document standards for addressing.
- Apply standards to MSAG and GIS data.
- Establish Authoritative/Provisioning Boundary.
- Perform GIS validation on PSAP and Responder Boundaries.
- Validate road centerline and address point data.
- Perform an MSAG comparison (GIS-based MSAG vs. legacy tabular MSAG).
- Perform an ALI to GIS comparison.
- Develop an on-going data maintenance plan.

Performing these steps will help to ensure your GIS data is ready for location validation and geospatial call routing. While desirable, achieving a 0% error rate for formal validations, audits, and comparisons is most likely unrealistic, so GIS readiness is a subjective assessment and it will be mutually decided by all parties as to when the data is fit for use for geospatial routing.

The tables in the EGDMS User Guide describe the A9-1-1 GIS data schema for both required and recommended GIS layers. It is important to note that field names in the local source data schema do not need to be changed to match the field names in the A9-1-1 schema. This is because the EGDMS portal provides schema field mapping tools to assist in the GIS data schema transformation. The EGDMS will also automatically transform the data from its native projection into WGS84 (World Geodetic System 1984) as required for use in the ECRF and LVF, which allows local agency data to be maintained in its original format and coordinate system/projection.

### 2.2 Document Standards for Addressing

The 9-1-1 Authority is responsible for developing addressing standards for their jurisdiction. It is recommended to use the U.S. Postal standards ([USPS Publication 28 – Postal Addressing Standards](#)) for the legacy street name fields. However, in the event that the legacy 9-1-1 formatting deviates from the USPS postal standards, it is most important that the legacy street name fields in the GIS data match the legacy MSAG and ALI databases (See section 2.3 below for more information).

## 2.4 Establish Authoritative/Provisioning Boundary

An Authoritative or Provisioning Boundary defines the area of responsibility for a given 9-1-1 jurisdiction. This boundary also restricts 9-1-1 Authorities to only make changes within their area of responsibility/jurisdiction. Provisioning Boundaries must be seamless (must not contain gaps or overlaps) when coalesced and validated against neighboring agencies. The EGDMS validation system has a first in-first-served concept, in that any existing, validated production data will be considered accurate until a discrepancy has been found, at which time the agencies in question must work together to determine the resolution for the discrepancy. Therefore, it is highly recommended to work with neighbor agencies prior to submitting data to the system, so that Provisioning Boundaries pass the initial validation checks.

A Provisioning Boundary polygon must be provided with each agency's initial GIS data load and serves as the basis for all subsequent spatial data validations for roads, address points, and other boundary layers. Typically, once established, this boundary should be relatively stable, in that only annexations or other jurisdictional boundary changes would impact the boundary.

Usually, PSAP boundaries can be used as a starting point for Provisioning Boundary creation, though there may be exceptions to this rule. Also, generally speaking, 9-1-1 agencies are usually responsible for maintaining all GIS layers (responder boundaries, road centerlines and address points) within their region, but there have been some cases where multiple agencies maintain GIS layers for a given region. While those areas would need to be treated as a special case, typically, a single Provisioning Boundary should be created and maintained for each 9-1-1 GIS data maintaining authority.

All emergency responder and PSAP boundary polygons should fall completely within, and completely cover the Provisioning Boundary polygon, so that there are no gaps in coverage within the Provisioning Boundary. See section 2.5 for more information on polygon validations.

## 2.5 Perform GIS Validation on PSAP and Responder Boundaries

For accurate geospatial call routing and response agency identification, PSAP and responder boundaries must be created and maintained. PSAP, Fire, Law, and EMS boundaries should be provided as separate, individual layers. Response boundaries should not contain gaps or overlaps between one another and between the Provisioning Boundary.

Topology errors should be corrected and validations should be performed any time an edit to any boundary is made. In some situations, a particular entity may need to provision a PSAP or service boundary on behalf of an adjacent jurisdiction, due to mutual aid agreements or other unique scenarios. This requires cooperation with neighboring agencies to be sure that changes along boundaries are reflected in both agencies' data to avoid coverage errors.

## 2.6 Validate Road Centerline and Address Point Data

It is recommended that Quality Assurance/Quality Control (QA/QC) validations are performed on road centerlines and address points on local data using 9-1-1 GIS data validation software. Additionally, the EGDMS system will validate incoming GIS datasets for conformance A9-1-1 GIS schema and perform QA/QC for critical errors (section 4.2). By validating data ahead of provisioning, errors can be found and corrected so that critical errors are minimized once data is ready to be loaded into EGDMS.

## 2.7 Perform an MSAG to GIS Comparison

A MSAG to GIS comparison provides a starting point for MSAG and GIS road centerline synchronization. If the beginning match rate is high, it is recommended to work the discrepancies individually until the GIS and MSAG are in alignment, and changes to the GIS data should be reflected in the MSAG on a continual basis. Keeping the MSAG and GIS in synch during the legacy to NG9-1-1 transition is important to ensure MSAG valid records also match the GIS data.

If the MSAG to GIS match rate is low and the GIS data is deemed to be more complete and accurate, it is possible to generate a GIS-based MSAG (GeoMSAG) from the road centerlines to replace the original tabular MSAG. This one-time GeoMSAG replacement is an optional service. In addition, the optional Transitional Data Management Service is available, and provides a mechanism for the GIS data updates submitted through EGDMS to automatically update the GeoMSAG, keeping the GIS and MSAG in synch in an automated fashion.

## 2.8 Perform an ALI to GIS Comparison

An ALI/TN extract to GIS comparison validates that Telephone Number (TN) address records in the ALI database will find a match to the GIS data. This comparison can be performed to the road centerline layer and/or to the address point layer. The ALI to road centerline comparison is useful to identify any ALI records that do not match a corresponding road segment within the GIS data. The situation can be investigated to identify if there is an error in the road centerline data or if the ALI record has been incorrectly provisioned. Likewise, an error in the ALI to address point comparison can be investigated to see if there is an omission or error in the address point data.

At a minimum, the ALI to road centerline match rate should meet 98%. The ALI to road centerline match rate is used as the benchmark for provisioning GIS data to the ECRF and LVF within the ESInet, however all parties must work together to determine when the GIS data is ready to be provisioned to production systems.

## 2.9 Develop An Ongoing GIS Data Maintenance Plan

GIS data maintenance is an ongoing and essential process that includes continual data collection for new addresses, road and boundary changes to ensure a comprehensive and accurate GIS database is maintained. This process requires cooperation and communication between addressing authorities, GIS Authorities, and MSAG coordinators particularly when these roles are fulfilled by different agencies. The GIS and MSAG databases are in constant change and must be updated to maintain accuracy and synchronization in transition to NG9-1-1.

Processes and policies should be created to guide the maintenance of all data.

It is important to establish:

- How and by whom are GIS, MSAG and ALI errors reported?
- Who is responsible for making changes to each database?
- What is the timeframe for error corrections and updates for both the MSAG and GIS database?

Ultimately, every 9-1-1 emergency response decision will be derived from GIS data, from call routing to responder dispatch to the delivery of supplemental information. These essential decision-making processes must be driven by accurate data. Timely, coordinated, and ongoing maintenance is crucial to ensure the quality of all GIS and 9-1-1 data.

### 3.0 Roles and Responsibilities

The following matrix outlines the typical responsibilities of each party for the onboarding and ongoing maintenance of the EGDMS.

**Table 2: Roles and Responsibilities**

Task	Responsibility
Customer setup. Training. GIS data validation and reporting. Software maintenance. Technical support. Hosting the Managed Service.	Intrado
Hardware purchase and maintenance (for GIS software). GIS data creation and maintenance. Database schema updates (if required). Error resolution. Ongoing GIS data update submissions.	9-1-1 Authority

## 4.0 GIS Data Provisioning

GIS data is submitted to the A9-1-1 system via the web-based EGDMS portal. The portal provides secure GIS file transfer. 9-1-1 Authorities can maintain their local database schema and configure database changes using the attribute field mapping tools.

The EGDMS portal provides:

- Secure file transfer via the EGDMS portal using secure 2 factor authentication.
- GIS file format support for File Geodatabase and shape files.
- Automated schema change detection and error notification.
- Attribute field mapping configuration driven by the 9-1-1 Authority/local data source.
- Automated email notifications for upload, error, and processing status.
- Automated QA/QC and validation report retrieval.

### 4.1 Initial GIS Data Submission

After customer access is established, the initial GIS data upload is submitted to the EGDMS Portal. The required datasets are as follows:

Authoritative/Provisioning Boundary – Provisioning boundary polygon that covers the area for which the agency is responsible for maintaining GIS data for 9-1-1 purposes.

Road Centerline - Road centerline data for the agency's jurisdiction.

Site/Structure Address Point - Address/structure points for the agency's jurisdiction.

PSAP Area Boundary - Public Safety Answering Point boundary polygons for the agency's jurisdiction.

Fire Response Boundary - Fire response boundary polygons for the agency's jurisdiction

Law Response Boundary - Law response boundary polygons for the agency's jurisdiction.

EMS Response Boundary - EMS/medical response boundary polygons for the agency's jurisdiction.

### 4.2 GIS Data Validation and Error Correction

The EGDMS validation system refers errors back to the originating 9-1-1 Authority in comprehensive PDF summary reports and error shape files that are retrieved via the EGDMS portal. Validation errors must be corrected by the 9-1-1 Authority within their own GIS database, and updates are submitted and processed on an ongoing basis. EGDMS validations include road centerline, address point, and polygon validations for each data upload.

#### 4.2.1 EGDMS Critical Errors

Features found to have critical errors cannot be loaded into the A9-1-1 systems due to incompatibility or addressing errors that would result in inaccurate call routing. All critical errors should be resolved prior to provisioning geospatial call routing systems. Any new critical errors found in a GIS data update should be corrected and resubmitted as soon as possible, or within three (3) business days. The error names and error descriptions are included in the EGDMS User Guide as well as each EGDMS Upload Summary Report.

It is important to note that for PSAP and Responder boundary layers, a single critical error will keep the entire layer from updating the ECRF, and the original validated layers will remain in production until an error free update has been processed. This is to ensure call routing is not negatively impacted by errors within the PSAP and Responder boundary.

#### **4.2.2 URI Values and Validation**

Intrado will establish PSAP and response boundary URIs and provide these to the 9-1-1 Authority. Once the URI's have been established, they should be populated in the URI field of the PSAP and responder boundaries. The EGDMS system will validate all URI values for accuracy and consistency. If a URI is missing or invalid, the EGDMS system will return a critical error and the URI value must be updated.

### **4.3 i3 System Provisioning**

The following table illustrates the typical GIS data readiness and i3 provisioning steps. It is important to note that the time needed for GIS readiness will vary, depending on the accuracy of the GIS and MSAG/ALI.

## 5.0 GIS Data Provisioning Timeframes

GIS data can be submitted on an as-needed basis based on the update frequency of the source GIS data. It is recommended that data be provisioned monthly, at a minimum, with weekly or more frequent updates strongly encouraged, especially if many edits and/or corrections have been made to the data.

Once GIS data has been submitted to the EGDMS portal, it is automatically processed and validated. Processing timeframes are dependent on the database file size. Emergency changes to routing polygons should be submitted independent of other GIS updates to keep processing timeframes to a minimum. If critical errors are found, every effort should be made to correct the data as resubmit as soon as possible.

**Table 3: GIS Data Readiness and i3 Provisioning Steps**

GIS Data Analysis and Error Correction	Duration	Responsibility
GIS Authority performs initial data load to SI and completes configuration. Initial error reports received.	1 week	9-1-1 Authority
GIS Authority to resolve all critical errors and resubmit GIS data until all errors are corrected.	Varies based on GIS data accuracy	9-1-1 Authority
Intrado performs initial ALI to RCL comparison and identifies any discrepancies in a detailed report.	1 week	Intrado
GIS Authority performs remediation until ALI to RCL match rate of 98% (recommended) is met.	Varies based on GIS data accuracy	9-1-1 Authority
GIS Authority resubmits all GIS data layer updates to EGDMS for provisioning.	1 day	9-1-1 Authority
GIS Data i3 Provisioning	Duration	Responsibility
Intrado provisions the LVF, ECRF, and geocoding engine (for LDB) with production-ready GIS data.	1 day	Intrado
Intrado geocodes Wireline ALI records for LDB provisioning	2 weeks	Intrado
Intrado performs pre-cutover geospatial routing testing	2 weeks	Intrado

Because this GIS data drives location validation and call routing in the A9-1-1 systems, GIS data updates should be considered a standard practice and built into GIS data maintenance workflows within the organization.



## 6.0 NENA NG9-1-1 GIS Data Format Considerations

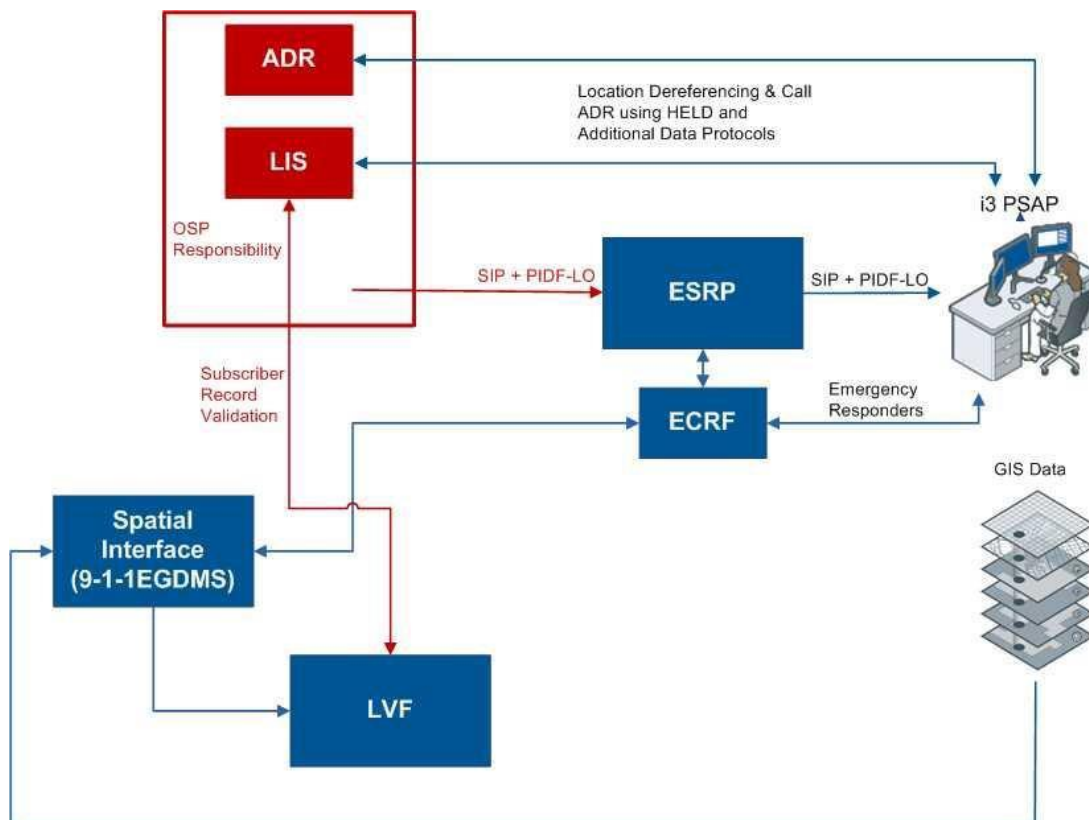
While the NG9-1-1 GIS data schema developed by NENA is robust and should serve Next Generation 9-1-1 needs well, there are some long-term considerations as well as shorter term transitional considerations that should be addressed.

### 6.1 Originating Service Provider (OSP) Participation

Each OSP has four general responsibilities as outlined in the NENA STA-010.2 document. These are shown red in Figure 1. The OSP responsibilities are:

1. Utilize the regional Location Validation Function (LVF) to validate all subscriber records associated with the OSP.
2. Create a Location Information Server (LIS) to store all validated subscriber records. The LIS must support the HTTP Enabled Location Determination (HELD) protocol.
3. Create an Additional Data Repository (ADR) that contains information about the call. At minimum, when this data is combined with a HELD response, the Public Safety Answering Point (PSAP) will receive Automatic Location Identification (ALI) equivalent data with the call.
4. Introduce a 9-1-1 call into the appropriate ESInet in an i3 compliant Session Initiation Protocol (SIP) format, including location and additional data by value and/or reference.

Figure 1: NENA i3 OSP Requirements

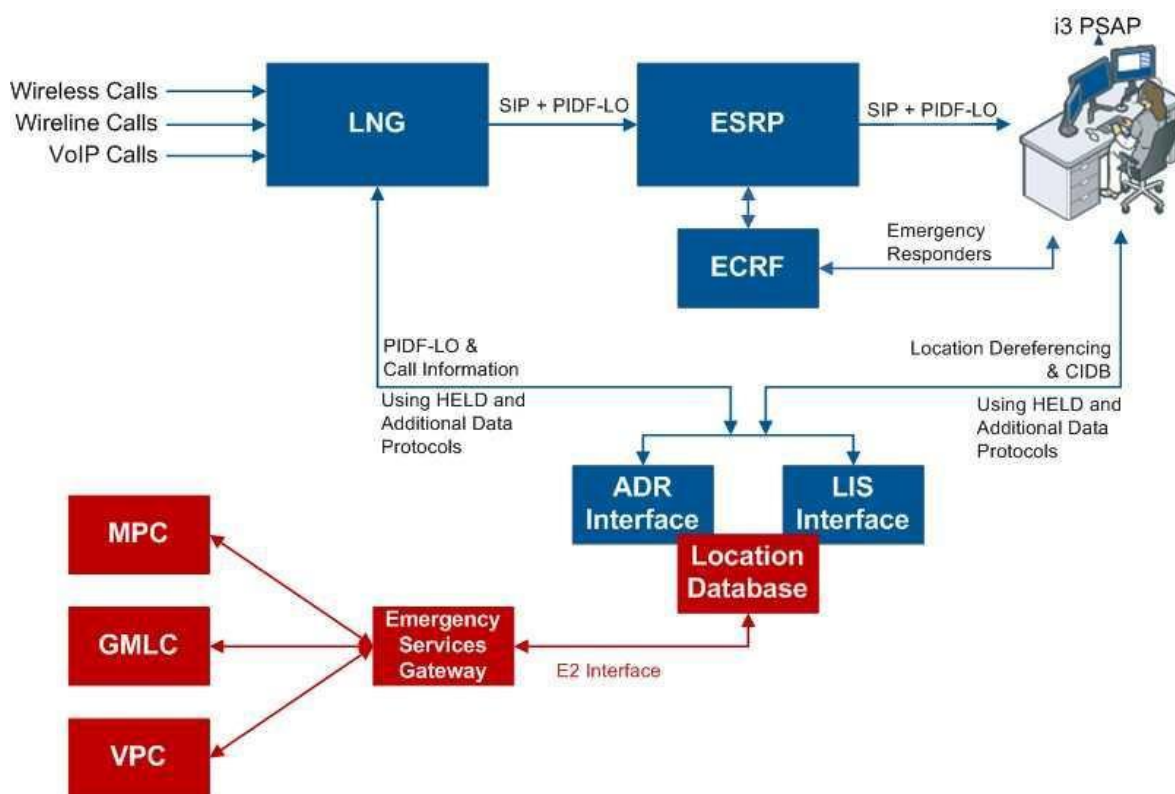


Until such time that OSPs are ready to perform the functions outlined in the NENA i3 requirements, it is necessary for a NG9-1-1 service provider to perform similar functions in order for the PSAP to benefit from a NENA i3 compliant call delivery service. To accomplish i3 compliance for the PSAP Customer Premises Equipment (CPE), the A9-1-1 solution provides LIS and ADR interfaces into a Location Database (LDB). The LDB is a legacy data source utilized to populate the Presence Information Data Format – Location Object (PIDF-LO) and ADR in the SIP signaling to the PSAP and LIS and ADR responses when the call taker requests data updates.

Another transitional consideration is the use of the LVF for location validation. During the transitional phase, OSPs will continue to use legacy MSAGs to validate the subscriber records before they are populated into the LDB. Therefore, it is critical that the GIS data used to route the call using the Emergency Call Routing Function (ECRF) is synchronized with the MSAG used for subscriber record validation.

Lastly, there are also legacy systems that comply with older but current NENA data schemas (NENA 02-010, v9). Like ALI, the LDB must retrieve location information from an appropriate Mobile Positioning Center (MPC) or Gateway Mobile Location Center (GMLC), in the case of a wireless call, or a VoIP Positioning Center (VPC) for a Voice over Internet Protocol (VoIP) call. Figure 2 shows how call flows in NG9-1-1 also involve interactions with legacy systems, shown in red. The LDB does not control what information is put in which fields in the response from the MPC/GMLC or VPC. All responses utilize the older data schemas referenced above. Appendix A in the NENA STA-010.2 document specifies how the LIS/ADR interfaces should map the values from legacy systems into the NG9-1-1 schema fields. Examples of how this is specified are provided in subsequent sections of this document.

**Figure 2: Next Generation Interactions with Legacy Systems**



## 6.2 Continued Use of Legacy Elements in the Transitional Period

The necessary interactions between legacy and NG9-1-1 compliant systems in the overall 9-1-1 ecosystem can be problematic in regards to routing a NG9-1-1 call and providing data to the PSAP CPE. Examples of problem areas follow, with recommendations on how to handle them as standards progress and until OSPs become compliant with the emerging standards.

### 6.2.1 MSAG Community in NG9-1-1

There is only one community field utilized in most legacy systems, the MSAG Community.

The A9-1-1 GIS data model includes five fields associated with community:

- Incorporated Municipality (or A3) - required
- Unincorporated Community (or A4)
- Neighborhood Community (or A5)
- Postal Community (or PCN)
- MSAG Community

The A3, A4, A5 and PCN designations are how these fields are referenced in the RFCs describing PIDF-LO. MSAG Community does not have a corresponding reference in PIDF-LO because PIDF-LO does not support a MSAG Community element. Further, since the MSAG Community is not supported in PIDF-LO, it would not be validated in a Location-to-Service Translation (LoST) validation transaction (via the LVF).

Therefore, in the transitional phase and to support ALI matching to civic addresses in the GIS data, it is highly recommended that the MSAG Community from the source data set is field mapped to the Incorporated Municipality (A3) field in the EGDMS field mapping tool.

The NENA STA-010.2 document Appendix A supports this and suggests when receiving data from legacy databases, the MSAG Community should be mapped to the Incorporated Municipality (A3) field.

**Table 4: Suggested MSAG Community Field Mapping**

Legacy Field Name	NG9-1-1 GIS Data Model Field Name
<b>MSAGCommunity</b>	<b>[Mapped via MCS] pidflo:presence/tuple/status/geopriv/location-info/civicAddress/A3 (Incorporated Municipality)</b>

Additionally, the NENA STA-010.2 document suggests populating “UNINCORPORATED” in the A3 field if the area is unincorporated and to use the UNINCORPORATED (A4) field for the Community name. This can be problematic for the call taker’s display screens, not to mention the programmatic complications this introduces around what to display. In addition, if “UNINCORPORATED” is utilized, OSPs who are attempting LVF LoST validations will likely get invalid responses unless they know to use “UNINCORPORATED” in the A3 field. Even if they get that correct, there is the problem of determining which of the various community fields the actual community name should go into.

An additional consideration when determining Community name designations is that for the foreseeable future, OSPs have subscriber management systems that revolve around the MSAG and

they will continue to utilize database management systems that leverage the MSAG to validate their subscriber records. There is no indication at this time that OSPs will be changing their systems to accommodate interaction with an LVF and populating their own LIS vs. providing Service Order Input (SOI) records to the regional ALI provider. For these reasons, it is suggested that during transition, the MSAG Community field is field mapped to the Incorporated Municipality (A3) field until such time that MSAG validation has been replaced with LIS and LVF validation supporting the multiple community designations.

## 6.2.2 Synchronizing the MSAG with GIS

Because the MSAG will still be maintained for the foreseeable future, it is strongly recommended that the MSAG be synchronized with GIS data. The NENA 71-501 document is an informational document that describes a mechanism to bring GIS data and MSAG data into alignment.

Depending on the readiness of the GIS data and the accuracy of the MSAG, bringing the MSAG into alignment with the GIS data can be a lengthy and onerous task. An optional service within A9-1-1 includes a one-time GeoMSAG replacement and ongoing Transitional Data Management Services which provides a mechanism for the GIS data updates submitted through EGDMS to automatically update the GeoMSAG, keeping the GIS and MSAG in synch in an automated fashion. During the transition to NG9-1-1, the synchronization between the MSAG and GIS data must be maintained regardless of the approach taken for the initial synchronization.

## 6.2.3 Street Name Considerations

There are four legacy street name fields in the legacy 9-1-1 schema, whether it be the NENA 2.1 standard (most common) or the NENA (ALI Query Service) AQS standard. These also correspond to those returned in an E2 response from an MPC/GMLC or VPC. These are:

- Prefix Directional
- Street Name
- Street Suffix
- Post Directional

In the A9-1-1 GIS Data Schema, the above legacy street name fields are supported, and in addition there are eight i3/PIDF-LO compliant fields:

- Street Name Pre Modifier
- Street Name Pre Directional
- Street Name Pre Type
- Street Name Pre Type Separator
- Street Name
- Street Name Post Type
- Street Name Post Directional
- Street Name Post Modifier

The four legacy street name fields are intended to be used when creating MSAGs from the GIS data or validating legacy 9-1-1 data. It is recommended that these legacy street name fields are utilized in the transition to i3 (until full LIS and LVF validations are implemented).

Assuming MSAG validation occurs, this is the format in which subscriber locations will be stored in the ALI database, LDB, or other system providing location data using legacy 9-1-1 format. Per

Appendix A of the NENA STA-010.2 document, when using legacy 9-1-1 data inputs, there is a specific recommendation for field mapping the four legacy street name fields into the four corresponding NG9-1-1 fields as seen in the below table.

**Table 5: Suggested Street Name Elements Field Mappings**

Legacy Field Name	NG9-1-1 GIS Data Model Field Name
<b>Prefix Directional</b>	pidflo:presence/tuple/status/geopriv/location-info/civicAddress/PRD (Street Name Pre Directional)
<b>Street Name</b>	pidflo:presence/tuple/status/geopriv/location-info/civicAddress/RD (Street Name)
<b>Street Suffix</b>	pidflo:presence/tuple/status/geopriv/location-info/civicAddress/STS (Street Name Post Type)
<b>Post Directional</b>	pidflo:presence/tuple/status/geopriv/location-info/civicAddress/POD (Street Name Post Directional)

If the LDB (and therefore the PIDF-LO) use the same recommended mapping as is shown in Appendix A of STA-010.2, a civic match is likely to be made.

During the transitional period, given all of the considerations outlined above, it is recommended for now, that the legacy street name fields (Prefix Directional, Street Name, Street Suffix, and Post Directional (PRD, RD, STS and POD)) be field mapped per Appendix A of STA-010.2 (table above) within EGDMS for provisioning the ECRF/LVF as this will also correlate to the MSAG fields used for subscriber location validation. In the future, it is expected that new specifications and standards will provide for consistent mechanisms to overcome these transitional issues and the fields can be utilized as intended.

## 6.2.4 House Number Considerations

Note that the issue with legacy street name elements also applies to the House Number elements as described below:

Legacy 9-1-1 formats (NENA AQS and 2.1):

- House Number
- House Number Suffix

A9-1-1 GIS Data Model contains the following three fields:

- House Number Prefix
- House Number
- House Number Suffix

From Appendix A of the NENA STA-010.2 document, the mapping from NENA AQS (which also correspond to NENA 2.1 and E2) is as follows:

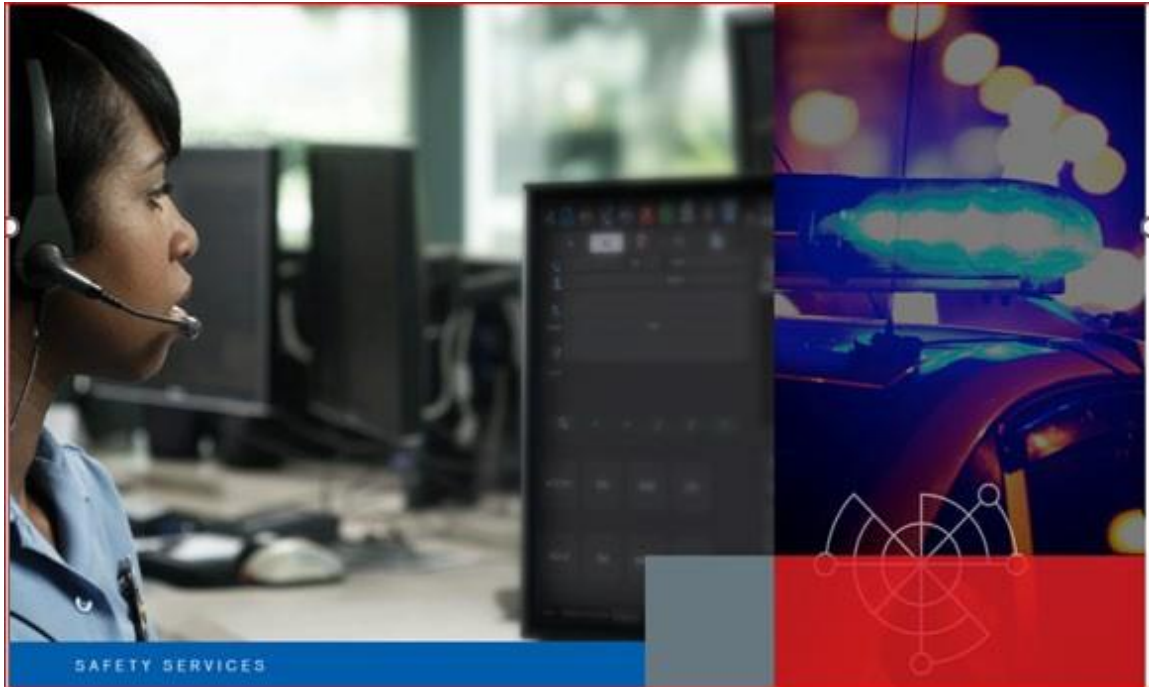
**Table 6: Suggested House Number Field Mappings**

<b>Legacy Field Name</b>	<b>NG9-1-1 GIS Data Model Field Name</b>
<b>HouseNum</b>	<b>pidflo:presence/tuple/status/geopriv/location-info/civicAddress/HNO (House Number)</b>
<b>HouseNumSuffix</b>	<b>pidflo:presence/tuple/status/geopriv/location-info/civicAddress/HNS (House Number Suffix)</b>

It is assumed that in the legacy systems, House Number Prefix is concatenated along with House Number in the House Number field, however, the House Number field in the A9-1-1 GIS data model is an integer field and does not support special characters. Therefore, it is recommended that House Number Prefix not be used during transition so that delivery of House Numbers remains consistent between different location providers and to prevent potential routing and PSAP display errors.

## 7.0 Conclusion

There are many considerations associated with the transition from legacy 9-1-1 data management to NG9-1-1 GIS-based data management, and this document discusses some potential issues and provides guidance for successful GIS data preparation for NG9-1-1 implementation. The introduction of NG9-1-1 GIS functionality is an operational shift that could have a significant impact on public safety priorities and workflows, particularly during the transitional period, so collaboration and communication between all parties involved is key to the successful implementation of NG9-1-1. Following the steps outlined in this document will provide a solid foundation for both the transition to, and end-state NG9-1-1 deployment.



## Non-Live Provisioning Test Plan

<Test PSAP>

<Test Date>



## **Trademark Ownership**

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## ***INTRODUCTION***

The A9-1-1™ Non Live Test Plan described in this document provides an overview of testing and a list and description of test cases for the implementation of the Intrado® Intelligent Emergency Network™ A9-1-1™ Routing services (“A9-1-1 Routing”). The objective for this test plan is to demonstrate the network and call processing equipment readiness to receive 9-1-1 traffic using the Intelligent Emergency Network A9-1-1 Routing service. Test participants include <Test PSAP> and Intrado A9-1-1 Service Delivery.

The A9-1-1™ Non Live Test Cases will demonstrate feature functionality of A9-1-1 Routing. The Test calls will deliver simulated “9-1-1” calls from the Intrado end office to the PSAPs over the Intelligent Emergency Network to the call processing equipment installed at the <Test PSAP>.

Intrado manages the testing process and coordinates all test calls documented in the A9-1-1 Non Live Test Plan. The testing is scheduled in accordance with the PSAPs availability. The PSAP is asked to provide a resource to answer the test calls and may be asked to provide documentation (i.e. screen prints and recordings) for certain calls.

The list of standard tests demonstrates feature functionality of the Intelligent Emergency Network 9-1-1 Routing Services to include:

- Operation of the Intrado PSAP equipment
- Call Processing:
  - Call transfer and bridging functions
  - Alternate and default routing
  - PSAP abandonment routing
  - PAD abandonment routing

**NG9-1-1 NON LIVE ACCEPTANCE TEST PLAN**

***NON LIVE ACCEPTANCE TEST CASES: INTRADO ORIGINATED CALLS***

Test #	Test Case	Type	Testing Criteria	Time	Pass/Fail and Comments
<b>TEST LOCATION:</b> <Test PSAP> <b>DATE &amp; TIME:</b> <DATE/TIME> <b>CALL ORIGINATOR:</b> INTRADO			<b>CALL TAKER:</b> ON-DUTY CALL-TAKER <b>ANI:</b> <ANI>		
1	Call Routed to PSAP through IEN	Equipment	Test call sent to <Test PSAP>. Caller confirms routing and audio quality.	<5 min	HH:MM MT - Test call generated from Intrado to <Test PSAP>; good ANI & Voice delivered. <PASS/FAIL>
2	SIP Contact Verification	PSAP Network	Egress trunks manually busied out to force calls through each SIP Contact  Test call sent to PSAP.  Egress trunks manually busied out to force calls through each SIP Contact  Note: This is an egress SIP from SBC to PSAP  SBC1: <ECMC> SBC2: <ECMC>	<5 min	HH:MM MT - Test call generated from Intrado to <Test PSAP>; good ANI & Voice delivered. <PASS/FAIL>
3	LAN Failure A Side	PSAP Network	Test call sent to PSAP. Call Taker and Caller note time of any audio loss while failure occurs.	<10 min	HH:MM MT - Test call generated from Intrado to <Test PSAP>; <3 second audio loss reported. <PASS/FAIL>
4	LAN Failure B Side	PSAP Network	Test call sent to PSAP. Call Taker and Caller note time of any audio loss while failure occurs	<10 min	HH:MM MT - Test call generated from Intrado to <Test PSAP>; <3 second audio loss reported. <PASS/FAIL>

**NG9-1-1 NON LIVE ACCEPTANCE TEST PLAN**

Test #	Test Case	Type	Testing Criteria	Time	Pass/Fail and Comments
5	WAN Failure A Side	PSAP Network	Test call sent to PSAP. Call Taker and Caller note time of any audio loss while failure occurs	<5 min	HH:MM MT - Test call generated from Intrado to <Test PSAP>; <3 second audio loss reported. <PASS/FAIL>
6	WAN Failure B Side	PSAP Network	Test call sent to PSAP. Call Taker and Caller note time of any audio loss while failure occurs	<5min	HH:MM MT - Test call generated from Intrado to <Test PSAP>; <3 second audio loss reported. <PASS/FAIL>
7	CPE bids i3 Components	Call Handling	Test call sent to <Test PSAP>. Call taker performs rebid on the ANI.	<5 min	HH:MM MT - HH:MM MT - Test call generated to <Test PSAP>; good ANI, location (civic address, and geo-location coordinate's longitude and latitude if provisioned in GIS), dispatch responder info (fire dept., police dept., and med emergence), and subscriber information, and voice delivered. Verify CPE can independently bid the ECRF, LIS, and ADR.  Verify in CPE call traces that CPE is sending requests and receiving 200 OK messages back for ECRF, LIS, and ADR bid types.  <PASS/FAIL>
8	i3 Routing Fails, Routing via SRDB for Wireline call	Call Routing	Test call sent to <Test PSAP>. Caller confirms routing and audio quality.	<10 min	Place a call from TN with no X/Y provisioned in ALI. (n/a for i3 conversions)  Test call generated to <Test PSAP>; good ANI, location and subscriber information, and voice delivered. <PASS/FAIL>

**NG9-1-1 NON LIVE ACCEPTANCE TEST PLAN**

Test #	Test Case	Type	Testing Criteria	Time	Pass/Fail and Comments
9	i3 Routing via ECRF for Wireline call (n/a for i3 conversions – validate during cut)	Call Routing	Test call sent to <Test PSAP>. Caller confirms routing and audio quality.	<10 min	Make a call from TN with X,Y provisioned. Note: need TNs in advance.  HH:MM MT – TN re-inserted to ALI/LIS. Test call generated to <Test PSAP>; good ANI, location (civic address, and geo-location coordinate's longitude and latitude if provisioned in GIS), dispatch responder info (fire dept., police dept., and med emergence), and subscriber information, and voice delivered. <b>&lt;PASS/FAIL&gt;</b>
10	S/R Transfer: Fixed Bridge Conferencing Confirmation	Call Processing	Test call sent to <Test PSAP> and transferred to <i3 TRANSFER PSAP (URI)>. All parties on the bridge talk to confirm conferencing is established. Call taker at <TRANSFER PSAP> disconnects. Caller confirms that caller and call taker at <Test PSAP> are still bridged.	<5 min	HH:MM MT - Test call generated from Intrado to <Test PSAP>; good ANI and Subscriber and Voice delivered; transfer to <i3 TRANSFER PSAP (URI)>; good ANI/ALI & Voice delivered; conferencing established. <b>&lt;PASS/FAIL&gt;</b>
<b>NOTE: A separate call will not be needed for each of the remaining fixed bridge test cases. A single call can be made and transferred multiple times.</b>					
11	S/R Transfer: Fixed Bridge Conferencing Confirmation	Call Processing	Test call sent to <Test PSAP> and transferred to <i3 TRANSFER PSAP (URI)>. All parties on the bridge talk to confirm conferencing is established. Call taker at <TRANSFER PSAP> disconnects. Caller confirms that caller and call taker at <Test PSAP> are still bridged.	<5 min	HH:MM MT - Test call generated from Intrado to <Test PSAP>; good ANI and Subscriber and Voice delivered; transfer to <i3 TRANSFER PSAP (URI)>; good ANI/ALI & Voice delivered; conferencing established. <b>&lt;PASS/FAIL&gt;</b>

**NG9-1-1 NON LIVE ACCEPTANCE TEST PLAN**

Test #	Test Case	Type	Testing Criteria	Time	Pass/Fail and Comments
12	S/R Transfer: Fixed Bridge Conferencing Confirmation	Call Processing	Test call sent to <Test PSAP> and transferred to <i3 TRANSFER PSAP (URI)>. All parties on the bridge talk to confirm conferencing is established. Call taker at <TRANSFER PSAP> disconnects. Caller confirms that caller and call taker at <Test PSAP> are still bridged.	<5 min	HH:MM MT - Test call generated from Intrado to <Test PSAP>; good ANI and Subscriber and Voice delivered; transfer to <i3 TRANSFER PSAP (URI)>; good ANI/ALI & Voice delivered; conferencing established. <PASS/FAIL>
13	S/R Transfer: Fixed Bridge Conferencing Confirmation	Call Processing	Test call sent to <Test PSAP> and transferred to <i3 TRANSFER PSAP (URI)>. All parties on the bridge talk to confirm conferencing is established. Call taker at <TRANSFER PSAP> disconnects. Caller confirms that caller and call taker at <Test PSAP> are still bridged.	<5 min	HH:MM MT - Test call generated from Intrado to <Test PSAP>; good ANI and Subscriber and Voice delivered; transfer to <i3 TRANSFER PSAP (URI)>; good ANI/ALI & Voice delivered; conferencing established. <PASS/FAIL>
14	S/R Transfer: Fixed Bridge Conferencing Confirmation	Call Processing	Test call sent to <Test PSAP> and transferred to <i3 TRANSFER PSAP (URI)>. All parties on the bridge talk to confirm conferencing is established. Call taker at <TRANSFER PSAP> disconnects. Caller confirms that caller and call taker at <Test PSAP> are still bridged.	<5 min	HH:MM MT - Test call generated from Intrado to <Test PSAP>; good ANI and Subscriber and Voice delivered; transfer to <i3 TRANSFER PSAP (URI)>; good ANI/ALI & Voice delivered; conferencing established. <PASS/FAIL>

**NG9-1-1 NON LIVE ACCEPTANCE TEST PLAN**

Test #	Test Case	Type	Testing Criteria	Time	Pass/Fail and Comments
15	S/R Transfer: Fixed Bridge Conferencing Confirmation	Call Processing	Test call sent to <Test PSAP> and transferred to <i3 TRANSFER PSAP (URI)>. All parties on the bridge talk to confirm conferencing is established. Call taker at <TRANSFER PSAP> disconnects. Caller confirms that caller and call taker at <Test PSAP> are still bridged.	<5 min	HH:MM MT - Test call generated from Intrado to <Test PSAP>; good ANI and Subscriber and Voice delivered; transfer to <i3 TRANSFER PSAP (URI)>; good ANI/ALI & Voice delivered; conferencing established. <PASS/FAIL>
16	S/R Transfer: Fixed Bridge Conferencing Confirmation	Call Processing	Test call sent to <Test PSAP> and transferred to <i3 TRANSFER PSAP (URI)>. All parties on the bridge talk to confirm conferencing is established. Call taker at <TRANSFER PSAP> disconnects. Caller confirms that caller and call taker at <Test PSAP> are still bridged.	<5 min	HH:MM MT - Test call generated from Intrado to <Test PSAP>; good ANI and Subscriber and Voice delivered; transfer to <i3 TRANSFER PSAP (URI)>; good ANI/ALI & Voice delivered; conferencing established. <PASS/FAIL>
17	PSTN Transfer	Call Processing	Test call sent to <Test PSAP>; Transfer to <PSTN destination (tel:URI)>.	<5 min	HH:MM MT - Test call generated from Intrado to <Test PSAP>; good ANI/ALI & Voice delivered; transfer to <PSTN destination (tel:URI)>; good ANI & Voice delivered; conferencing established. <PASS/FAIL>
18	Manual Transfer to valid local TN	Call Processing	Test call sent to <Test PSAP>; Manual Transfer to local TN: <NPA-NXX-XXXX>	<5 min	HH:MM MT - Test call generated from Intrado to <Test PSAP>; good ANI/ALI & Voice delivered; manual transfer to <NPA.NXX.XXXX>; good Voice delivered; conferencing established. <PASS/FAIL>

**NG9-1-1 NON LIVE ACCEPTANCE TEST PLAN**

Test #	Test Case	Type	Testing Criteria	Time	Pass/Fail and Comments
19	Manual Transfer to valid long distance cell	Call Processing	Test call sent to <Test PSAP>; Manual Transfer to long distance cell: <NPA-NXX-XXXX>	<5 min	HH:MM MT - Test call generated from Intrado to <Test PSAP>; good ANI and subscriber info and Voice delivered; manual transfer <NPA-NXX-XXXX>; good ANI & Voice delivered; conferencing established. <PASS/FAIL>
20	DTMF Transfer	Call Processing	Test call sent to <Test PSAP>; Manual Transfer to DTMF Test Line TN: 720-494-6650, option 1 selected. Call taker verifies "Digit Verified" message reached.		HH:MM MT - Test call generated from Intrado to <Test PSAP>; good ANI and subscriber info and Voice; manual transfer to 720-494-6650. Call taker hears recording and presses 1, verifies that they hear "digit verified" recording. <PASS/FAIL>
21	Alternate Routing	Call Processing	All trunks busied to force all calls to route to Alternate Route. Test call sent to <Test PSAP>, call routed to <Alternate Route> as expected.	<10 min	HH:MM MT - Trunks busied out. HH:MM MT - Test call generated from Intrado to <Test PSAP>; call routed to <Alternate Route> as expected. <PASS/FAIL>
22	Ring no Answer Timer and Trunk Treatment	Call Processing	Test call sent to <Test PSAP>, call is allowed to ring continuously until rolling over to Alternate route (RNA TIME); call routes to <Alternate Route> as expected.	<5 min	HH:MM: MT – Test call behaves as expected and rolls over to expected destination. SIP contacts should either be in A-OOS or In Service in accordance with the Data Collection Form. <PASS/FAIL>
23	Abandonment Routing	Call Processing	PSAP is manually put into an abandoned state Test call sent to <Test PSAP>, call routed to <Alternate Route> as expected.	<20 min	HH:MM MT – PSAP Abandoned HH:MM MT - Test call generated from Intrado to <Test PSAP>; call routed to <Alternate Route> as expected with good ANI/ALI & Voice. <PASS/FAIL>



**NG9-1-1 NON LIVE ACCEPTANCE TEST PLAN**

Test #	Test Case	Type	Testing Criteria	Time	Pass/Fail and Comments
24	Un-Abandonment Routing	Call Processing	PSAP is manually put into an un-abandoned state Test call sent to <Test PSAP>, call routed to <Test PSAP> as expected.	<10 min	HH:MM MT - PSAP Un-Abandoned HH:MM MT - Test call generated from Intrado to <Test PSAP>; call routed to <Test PSAP> as expected with good ANI/ALI & Voice. <PASS/FAIL>
25	Abandonment Routing – PAD Testing	Call Processing	PSAP is manually put into an abandoned state using the PSAP Abandonment Device. Test call sent to <Test PSAP>, call routed to <ABANDONMENT ROUTE> as expected.	<20 min	HH:MM MT – PSAP Abandoned using PAD HH:MM MT - Test call generated from Intrado to <Test PSAP>; call routed to <ABANDONMENT ROUTE> as expected with good ANI/ALI & Voice. <PASS/FAIL>
26	Un-Abandonment Routing – PAD Testing	Call Processing	PSAP is manually put into an un-abandoned state Test call sent to <Test PSAP>, call routed to <Test PSAP> as expected.	<10 min	HH:MM MT - PSAP Un-Abandoned using PAD HH:MM MT - Test call generated from Intrado to <Test PSAP>, call routed to <Test PSAP> as expected with good ANI and subscriber info and Voice. <PASS/FAIL>
27	Verify Remaining Line Appearances	Call Processing	Make additional test calls to validate remaining line appearances.		HH:MM MT – Remaining trunks each hit with a test call. <PASS/FAIL>



i3 PSAP Migration Plan

<PSAP>

<Cut Date and Time>

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# Table of Contents

	<b>1.0 PSAP Migration.....</b>	<b>3</b>
1.1	Scope .....	3
1.2	Responsibilities .....	3
1.3	PSAP Info.....	3
1.4	Pre-Event Processes .....	3
	<b>2.0 Cutover.....</b>	<b>4</b>
2.1	Begin Cutover .....	4
2.2	Moving Traffic from RFAI to i3.....	4
	<b>3.0 Post Conversion Verification Testing.....</b>	<b>5</b>
3.1	Testing Tasks .....	5
	<b>4.0 Back-Out Plan.....</b>	<b>8</b>
4.1	Back-Out Plan From i3 to RFAI.....	8
4.2	Back-Out Plan – Restore Traffic for RFAI Instance.....	8
4.3	Back-Out Plan - Post Conversion Verification Testing.....	8

# 1.0 PSAP Migration

## 1.1 Scope

<PSAP> will be moving from an RFAI interface to i3. The PSAP is currently connected to the Intrado ECMCs.

## 1.2 Responsibilities

On the day of the migration Intrado will reroute <PSAP> 9-1-1 traffic to an i3 profile. <PSAP> will be properly staffed and ready to execute migration.

## 1.3 PSAP Info

Primary PSAP: <PSAP> Address: City, State, Zip: NENA ID:
---

SIP URI: <SIP:URI>

Intrado Wireline Pilot TNs - Pilot 1	Intrado Wireless Pilot TNs - Pilot 2	Temp PN 1	Temp PN 2
3361193008	3361195008	3361153008	3361155008

## 1.4 Pre-Event Processes

Task #	Task	Responsible Party	Complete
1.	Validate that CPE Configurations/Connectivity completed	Intrado Service Delivery	
2.	Provide pilot number to <PSAP> Wireline: 3361153008 Wireless: 3361155008 SIP: <SIP:URI>	Intrado Service Delivery	
3.	Provisioning testing with PSAP	Intrado Service Delivery	
4.	Verify all fields are operating / displaying correctly on CPE/CAD/Mapping Systems (on existing CAMA, A911 or RFAI)	Onsite Personnel	
5.	Restore ANIs used on the dialers to original ESNs, if applicable	Intrado (VNS)	
6.	Verify that PSAP is not in an Abandoned State and that all SIP contacts are in-service and equipped.  (for i3 PSAPs - SIP contacts "ESRP to TESRP" value set as 1.3)	Intrado (VNS)	
7.	Turn on SIP contact monitoring	Intrado (VNS)	
8.	Obtain copy of last known good configuration or snapshot of all systems	Intrado (VNS)	
9.	An Intrado 'dialer' is setup and ready to be used for the pre-cut test calls	Intrado (VNS)	
10.	Verify Certificate Details & Expiration dates	Onsite CPE Technician(s)	

## 2.0 Cutover

### 2.1 Begin Cutover

Task #	Task	Responsible Party	Individual	Complete
1.	Roll Call for required participants	PM	Intrado PM	
2.	Review current status of equipment, network, PSAP's and personnel	PM	Intrado PM	
3.	Notify Intrado NOC that event is about to begin via email and phone	Intrado VNS		
4.	Notify NOC that event is about to begin	Intrado VNS		

### 2.2 Moving Traffic from RFAI to i3

Task #	Task	Responsible Party	Individual	Complete
1.	Request a minimum of <b>one call taker</b> log in with i3 profile and be ready to receive calls.	PM		
2.	Utilizing local test landline place test call to the Intrado dialer. Verify call routes to <PSAP> with good ANI, subscriber information, and voice.  (Dialer out pulses the TEMP PILOT NUMBER)	Onsite Personnel		
3.	Go - No Go decision by PSAP to continue Verify no major local Public Safety events.	Customer		
4.	<ul style="list-style-type: none"> <li>Move traffic - SIP contacts moved to i3 instance</li> <li>SIP URI updates</li> <li>Move Text if applicable</li> <li>Swap temporary Pilot</li> <li>If applicable update appropriate route lists to replace RFAI with i3 instance</li> <li>If applicable update star codes</li> <li>Mark PSAP Live</li> </ul>	Intrado		
5.	Initiate 911 call to validate <b>WRLN i3 delivery</b> Verify call is delivered with ANI and subscriber info Release Call Repeat test call for <b>WRLS</b> routing	Onsite Personnel		
6.	Confirm all Call Takers are logged into the new i3 profile	Onsite Personnel		
7.	Notify ALI Admins that Ack all alarms for ALI links if applicable.	Intrado PM		
8.	Disconnect legacy ALI links if applicable.	Onsite Personnel		
9.	Move, Reparse and Test CAD spill	Onsite Personnel		
NOTE: PSAP has been converted from RFAI to i3				

### 3.0 Post Conversion Verification Testing

#### 3.1 Testing Tasks

Task #	Task	Responsible Party	Individual	Complete
	<p>NOTE the wireless handsets shipped from Intrado for testing tasks #1-3 are not initialized/registered, so ANI/ALI may or may not be presented. <u>If available</u> perform these wireless tests with live wireless sets.</p> <p>T-Mobile / Sprint merger resulted in combining the 2 individual test cases into 1 test case (#3 below).</p> <p>(NOTE these 3 wireless tests are N/A for an RFAI to i3 conversion cutover as there is no change in ALIDB migrations so the PANI ranges are already set)</p>			Note: Need to make sure mobile phone is not connected to WIFI during testing.
1.	Place <b>ATT Mobility</b> call that routes to PSAP, verify location info	Onsite Personnel		
2.	Place <b>Verizon Wireless</b> call that routes to PSAP, verify location info	Onsite Personnel		
3.	Place <b>TMOB or SPRINT</b> call that routes to PSAP, verify location info	Onsite Personnel		

4.	<p>Test 911 Transfers: Place (ALL) <b>WRLS</b> and (*at least 1-ONE) <b>WRLN</b> 9-1-1 test calls to PSAP.</p> <ul style="list-style-type: none"><li>A. &lt;PSAP&gt; transfers to <b>Neighbouring PSAP Name</b> via (One Button Transfer) call taker validates that call successfully transfers from &lt;PSAP&gt; and location data display correctly. <b>Verify that the Transferred to PSAP is the correct PSAP</b></li><li>B. &lt;PSAP&gt; drops out of call. Remaining parties verify call stays up between the originator and transfer PSAP.</li><li>C. <b>Neighbouring PSAP Name</b> transfers back to &lt;PSAP&gt;. Parties validate call transfer completes to PSAP via a 911 trunk and location info display correctly: Do you have ANI/ALI? Is the correct call back number in the call back field</li><li>D. Repeat steps A-C for the following transfer tests:</li></ul> <p>~~~~~ ~~~~~</p> <p>Test PSTN transfers: Place a 9-1-1 test call to &lt;PSAP&gt;</p> <ul style="list-style-type: none"><li>A. &lt;PSAP&gt; transfers call to '<b>PSTN NAME</b>' via (One Button Transfer). Verify call transfers successfully <b>and if applicable that the AVR responds</b> to entered digits.</li><li>B. &lt;PSAP&gt; drops out of call. Remaining parties verify call between originator and 10-digit number stays up.</li></ul>	Onsite Personnel		
5.	<p>Test Call Hold: Place a 9-1-1 test call to &lt;PSAP&gt;</p> <ul style="list-style-type: none"><li>A. Place call utilizing system hold for 60 seconds</li><li>B. Pick up the held line from a position other than the one than placed the call on hold. Verify calling party is still connected</li></ul>	Onsite Personnel		
6.	<p>DTMF Testing Call sent to &lt;Test PSAP&gt;; Manual Transfer to DTMF Test Line TN: 720-494-6650, option 1 selected. Call taker verifies "Digit Verified" message reached</p>	Onsite Personnel		



7.	<p>Wireless Abandoned Call Testing: Place a Wireless 9-1-1 test call to PSAP. Abandon call after hearing ringing, but before PSAP answers. Ensure the following:</p> <p>A. Abandon call appears in the abandon call list Will hear 1 beep (setting)</p> <p>B. Call-taker can re-dial the ANI May need to manually add a 1.</p> <p>C. Abandon call re-dialled disappears from the list automatically after the call-taker calls back that ANI -or- pop-up dialog box appears asking if the call should be cleared from the list (depends on whether the PSAP is configured for auto-disposition of abandoned calls or not.)</p>	Onsite Personnel		
8.	<p>Wireline Abandoned Call Testing: Place a Wireline 9-1-1 test call to PSAP. Abandon call after hearing ringing, but before PSAP answers. Ensure the following:</p> <p>A. Abandon call appears in the abandon call list Will hear 1 beep (setting)</p> <p>B. Call-taker can re-dial the ANI May need to manually add a 1.</p> <p>C. Abandon call re-dialled disappears from the list automatically after the call-taker calls back that ANI -or- pop-up dialog box appears asking if the call should be cleared from the list (depends on whether the PSAP is configured for auto-disposition of abandoned calls or not.)</p>	Onsite Personnel		
9.	<p>VoIP Testing: Intrado to place <b>VoIP</b> test call to 9-1-1 verifying that call routes through Intrado</p>	Intrado		
10.	<p>Long Distance Testing: Place <b>WRLN</b> test call to 9-1-1 Perform a manual Network Transfer to a long Distance 10-digit number</p> <p>A. <b>&lt;PSAP&gt;</b> transfers call to 10-digit number. All parties verify call transfers successfully.</p> <p>B. <b>&lt;PSAP&gt;</b> drops out of call. Remaining parties verify call between originator and 10-digit number stays up.</p>	Onsite Personnel		
11.	<p>Provisioning Clean Up (for RFAI to i3 conversions only)</p> <ul style="list-style-type: none"><li>• Mark RFAI PSAP instance inactive</li><li>• Turn off monitoring on RFAI SIP contacts</li><li>• If CPE serves a single PSAP, disable IP (RFAI) session agent options in the SBC If applicable</li></ul>	Intrado VNS		
12.	<p>Notify Intrado NOC that event is complete via email &amp; phone.</p>	Intrado VNS		
13.	<p>Tech Ops to update the Change Log, as needed</p>	Intrado VNS		
14.	<p>Customer verify they can pull recording (analog by station OR IP)</p>	<PSAP>		
15.	<p>Customer verify the CAD is now parsed for i3</p>	<PSAP>		

# 4.0 Back-Out Plan

## 4.1 Back-Out Plan From i3 to RFAI

Task #	Task	Responsible Party	Individual	Complete
1.	Notify Intrado NOC that event is about to begin via email and phone	Intrado VNS		
2.	Go – No Go decision by PSAP to continue	Customer		
3.	Request a minimum of one call taker log in with RFAI profile and be ready to receive calls	Onsite Personnel		

## 4.2 Back-Out Plan – Restore Traffic for RFAI Instance

Task #	Task	Responsible Party	Individual	Complete
1.	Verify there are no active 9-1-1 calls	Intrado PM		
2.	Reconnect ALI links, verify heartbeats.	Onsite Personnel, ALI Admin		
3.	Generate test call to RFAI instance via dialer. Check that call is delivered with ANI/ALI.	Onsite Personnel		
4.	Place <b>WRLN</b> test call to 9-1-1 (not on test line) verifying that call routes through legacy Trunks	Onsite Personnel		
5.	Place <b>WRLS</b> test call to 9-1-1 (not on test line) verifying that call routes through Legacy Trunks	Onsite Personnel		
6.	VNS move existing <PSAP> 9-1-1 <b>WRLN</b> , <b>WRLS</b> and <b>VoIP</b> ESNs to RFAI instance. Update star codes, pilot numbers, etc.	Intrado VNS		
7.	Place 9-1-1 test call from <b>WRLN</b> phone for <PSAP> 9-1-1 validating route over legacy	Onsite Personnel		
8.	Place 9-1-1 test call from <b>WRLS</b> phone for <PSAP> 9-1-1 validating route over legacy	Onsite Personnel		
9.	<PSAP> 9-1-1 remaining call takers change to legacy profile	Onsite Personnel		
10.	Mark ALI profile LIV.	Intrado PM, ALI Admin		
NOTE: All WRLS and WRLN traffic now terminating on Legacy RFAI instance				

## 4.3 Back-Out Plan - Post Conversion Verification Testing

Task #	Task	Responsible Party	Individual	Complete
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<p>1.</p>	<p>Test 911 transfers: Place (ALL) <b>WRLN</b> and (*at least 1-ONE) <b>WRLS</b> 9-1-1 test calls to PSAP over the RFAI interface with location information displaying.</p> <ul style="list-style-type: none"> <li><b>A.</b> &lt;PSAP&gt; transfers to <b>Neighbouring PSAP Name</b> via (One Button Transfer) call taker validates that call successfully transfers from &lt;PSAP&gt; and location data display correctly.</li> <li><b>B.</b> &lt;PSAP&gt; drops out of call. Remaining parties verify call stays up between the originator and transfer PSAP.</li> <li><b>C.</b> <b>Neighbouring PSAP Name</b> transfers back to &lt;PSAP&gt;. Parties validate call transfer completes to PSAP over Legacy network and location info display correctly:</li> </ul> <p style="padding-left: 40px;">Do you have ANI/ALI? Is the correct call back number in the call back field?</p> <ul style="list-style-type: none"> <li><b>D.</b> Repeat steps A-C for the following transfer tests:</li> </ul> <p>~~~~~ ~~~~~</p> <p>Test PSTN transfers: Place a 9-1-1 test call to &lt;PSAP&gt;</p> <ul style="list-style-type: none"> <li><b>A.</b> &lt;PSAP&gt; transfers call to '<b>PSTN NAME</b>' via (One Button Transfer). Verify call transfers successfully <b>and if applicable that the AVR responds</b> to entered digits.</li> <li><b>B.</b> &lt;PSAP&gt; drops out of call. Remaining parties verify call between originator and 10-digit number stays up.</li> </ul> <p>*see above list</p>	<p>Onsite Personnel</p>		
<p>2.</p>	<p>Request <b>Neighbouring Primary PSAP</b> that transfers to &lt;PSAP&gt; makes a 9-1-1 <b>WRLN</b> and <b>WRLS</b> call to reach their own Center</p> <ul style="list-style-type: none"> <li><b>A.</b> Transfer test calls to &lt;PSAP&gt;</li> <li><b>B.</b> Verify ANI/ALI and Voice</li> </ul>	<p>Onsite Personnel</p>		
<p>3.</p>	<p>Place <b>ATT Mobility</b> call that routes to PSAP, verify location info</p>	<p>Onsite Personnel</p>		
<p>4.</p>	<p>Place <b>Verizon Wireless</b> call that routes to PSAP, verify location info</p>	<p>Onsite Personnel</p>		
<p>5.</p>	<p>Place <b>TMOB</b> call that routes to PSAP, verify location info</p>	<p>Onsite Personnel</p>		
<p>6.</p>	<p>Notify Intrado NOC that event is complete via email and phone.</p>	<p>Intrado VNS</p>		
<p>7.</p>	<p>Intrado to place <b>VoIP</b> test call to 9-1-1 verifying that call routes through to RFAI instance</p>	<p>Intrado PM</p>		
<p>8.</p>	<p>Place Text call, verify text messages can be sent and received – N/A unless TEXT live</p>	<p>Onsite Personnel</p>		
<p>9.</p>	<p>Tech Ops to update the Change Log, as needed</p>	<p>Intrado VNS</p>		

<PSAP>

10.	Verify Call Voice Recording	Onsite Personnel		
11.	Verify CAD spill.	Onsite Personnel		