

**STAFF REPORT**

**COMMITTEE MEETING DATE:** September 17, 2020

**DATE:** Thursday, September 10, 2020

**TO:** 911 Emergency Response Advisory Committee

**FROM:** Quinn Korbolic, Acting Chief Information Officer, Washoe County Technology Services, 775-328-2348, [qkorbolic@washoecounty.us](mailto:qkorbolic@washoecounty.us)

**THROUGH:** Christine Vuletich, Assistant County Manager

**SUBJECT:** Recommendation to accept the Intrado, Incorporated Service Order amending and replacing all current Intrado, Incorporated service orders and change requests for Washoe County Regional 911 Emergency Response with a one-time cost of [\$142,718], a monthly recurring cost of [\$95,339, or \$1,144,068 annually] and a term of one-hundred-forty-four [144] months from the order effective date; and recommend that the Board of County Commissioners approve the Service Order. For Possible Action.

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**SUMMARY**

Intrado Incorporated currently hosts Next Generation 911 Services for 24 dispatch positions at three Public Safety Answering Points (PSAP) in Washoe County operated by the City of Reno, City of Sparks and the Washoe County Sheriff's Office. Regional PSAP operators have been utilizing Intrado technologies since 2010. In response to COVID-19 and the potential need to evacuate PSAP locations, this Service Order adds mobile dispatch positions for Washoe County, Reno and Sparks at a one-time fee of [\$142,718] but does not increase monthly recurring fees – Intrado has offered to waive monthly fees for the mobile dispatch positions - resulting in a savings of [\$1,810,513.13] over the contract term.

**PREVIOUS ACTION**

On May 29, 2013 the Board of County Commissioners approved the Intrado, Incorporated "Change Order – Great Migration", which extended the e911 contract, and added services and features, replacing in its entirety the Advanced 9-1-1 Statement of Work dated May 27, 2010, and commencing on order effective date and ending 108 months thereafter with an estimated annual cost of [\$84,549] per month, [\$1,014,588] per year.

On May 25, 2010 the Board of County Commissioners acknowledged a presentation by the Galena Group Inc. with regard to request to award Washoe County Request for Proposal No. 2712-10, Washoe County E911 Advisory Board: NG911 Upgrade, on behalf of Technology Services; awarded Washoe County Request For Proposal No. 2712-10, and authorized the Purchasing and Contacts Manager to execute an agreement for

same to Intrado Inc., Longmont Colorado, to purchase a hosted Next Generation Emergency 911 system that will provide citizens with the ability to report emergencies to, and improve redundancy to the Public Safety Answering Points through voice or data transfer and bridge capabilities between Public Safety Answering Points as recommended by the 911 Emergency Response Advisory Committee on April 30, 2010, [monthly cost \$84,905 - plus one time installation cost of \$74,555 - totaling a first year annual cost of \$1,093,4151].

### **BACKGROUND**

NRS 244A.7645 authorizes the utilization of 911 surcharge funds to enhance the telephone system for reporting an emergency and for purchasing and maintaining portable event recording devices.

Washoe County and the Cities of Reno and Sparks have been utilizing Intrado, incorporated Services for the Next Generation 911 (NG911) system since 2010. Intrado's services, software, and equipment enhance the telephone system for reporting emergencies (the 911 System). The 911 system provided by Intrado is a key component of regional emergency response communications and is the system by which citizens experiencing an emergency can request help from regional first responders. Intrado's services include 911 location data management, 911 Routing, Text to 911, and VIPER call-handling. Service guides for each service are attached to this report.

### **FISCAL IMPACT**

The Washoe County Enhanced 911 Fund (208), Enhanced 911 Admin (800801) has sufficient budget authority in FY21 for the one-time payment [\$142,718] to Intrado, Incorporated for mobile dispatch positions and for the monthly service payments of [\$95,339] totaling [\$1,144,068].

### **RECOMMENDATION**

Recommendation to accept the Intrado, Incorporated Service Order amending and replacing all current Intrado, Incorporated service orders and change requests for Washoe County Regional 911 Emergency Response with a one-time cost of [\$142,718], a monthly recurring cost of [\$95,339, or \$1,144,068 annually] and a term of one-hundred-forty-four [144] months from the order effective date; and recommend that the Board of County Commissioners approve the Service Order.

### **POSSIBLE MOTION**

If the Committee agrees with Staff's recommendation, a possible motion would be: "Move to accept the Intrado, Incorporated Service Order amending and replacing all current Intrado, Incorporated service orders and change requests for Washoe County Regional 911 Emergency Response with a one-time cost of [\$142,718], a monthly recurring cost of [\$95,339, or \$1,144,068 annually] and a term of one-hundred-forty-four [144] months from the order effective date; and recommend that the Board of County Commissioners approve the Service Order."

## Intrado Service Order

### 1. Information

<b>Customer Name</b>	Washoe County, Nevada on behalf of the 911 Emergency Response Advisory Committee
<b>Order Effective Date</b>	Latest date signed below.
<b>Initial Term</b>	<ul style="list-style-type: none"> <li>• Commencing on Order Effective Date</li> <li>• Ending 144 months after Order Effective Date</li> </ul>
<b>Renewal Terms</b>	Automatic annual renewal unless notice of termination is given by either party at least 90 days before expiration of the then-current term.
<b>Governing Agreement</b>	Agreement for Services Dated May 27, 2010 ("Agreement")

### 2. Services Description

Intrado Life & Safety, Inc. ("Intrado") will provide the following services ("Services") as described in the attached or referenced Service Guide(s), at the prices stated in this Service Order ("Order"). Customer will fulfill its responsibilities stated in the Service Guide(s). The Service Guide(s) may also describe Optional Services not included in the standard Services, which Customer may purchase at this time or by completing a future service order, all at the prices stated herein (if applicable).

**This Order amends and replaces, in its entirety, all current service orders and change requests for Washoe County 911 Emergency Response with the exception of LVR.**

#### 2.1. Purchased Services

Service	Service Guide
A9-1-1 <sup>®</sup> Location Data Management	Location Data Management Ver. 2019.9.30
	Shared Services Ver. 2019.09.30
A9-1-1 <sup>®</sup> Routing	Routing Ver. 2019.09.30
	Shared Services Ver. 2019.09.30
TXT29-1-1 <sup>®</sup> Power	TXT29-1-1 Power Ver. 2019.09.30
	Shared Services Ver. 2019.09.30
A9-1-1 <sup>®</sup> VIPER <sup>®</sup>	A9-1-1 VIPER Direct Svc Guide Ver. 2020.06.24
	Shared Services Ver. 2019.09.30

#### 2.2. Optional Services

Service	Service Guide
None	N/A

#### 2.3. Out of Scope Services

Customer requests for services outside of the Service Guide(s) or this Order will require a separate change order executed by the parties.

### 3. Changes to Service Guides

The following 3 changes shall apply to the Service Guide(s):

1. Severity 1 on-site response time is 2 hours.
2. Customer will be notified seventy-two (72) hours in advance for planned events.
3. Any on-site tours of the Washoe PSAPs will be pre-arranged and approved by Washoe County Management.

### 4. Pricing

#### 4.1. Fees

The following are the fee(s) and payment schedule for Services listed in Section 2 above. Fees apply to up to the following number of Customer PSAPs and Positions:

Existing Solution

**Number of PSAPs: 3 Number of Positions: 24 Primary, 5 Backup Laptops**

Service	One Time Fee ("OTF")	Monthly Recurring Fee ("MRF")
Implementation Services	N/A	
A9-1-1 Location Data Management	N/A	\$11,967
A9-1-1 Routing (Managed ESInet and Call Routing)	N/A	\$42,664
A9-1-1 VIPER Positions	N/A	\$29,918
A9-1-1 VIPER Washoe Laptop Positions	No Charge*	Waived
A9-1-1 VIPER Reno Laptop Positions	\$71,359	Waived
A9-1-1 VIPER Sparks Laptop Positions	\$71,359	Waived
TXT29-1-1 Power	N/A	Waived
Additional IP Network for Reno (Existing and New) and Sparks	N/A	\$2,342
<b>Total not to Exceed MRF</b>	\$142,718	<b>\$95,339</b>

\*Washoe Laptops are at no charge if this Order is signed on or before December 31, 2020. If this order is not signed on or before December 31,2020, the charge for these laptops will be \$45,229.75.

#### Additional Washoe SO positions

Service	One Time Fee ("OTF")	Monthly Recurring Fee ("MRF")
A9-1-1 VIPER Positions (2)	N/A	\$3,180
<b>Total not to Exceed MRF</b>	N/A	<b>\$3,180</b>

-Additional Positions will be billed once deployed

**Additional Sparks PD positions**

Service	One Time Fee ("OTF")	Monthly Recurring Fee ("MRF")
A9-1-1 VIPER Positions (4)	N/A	\$6,360
Four Additional Monitors	\$3,656	N/A
Additional A9-1-1 Network Bandwidth	N/A	\$2,000
Additional A9-1-1 Network Bandwidth for Microwave Redundancy	N/A	included
<b>Total not to Exceed MRF</b>	<b>\$3,656</b>	<b>\$8,360</b>

-Additional Positions and network will be billed when production-ready

**Reno PD New Primary Location**

Service	One Time Fee ("OTF")	Monthly Recurring Fee ("MRF")
22 New A9-1-1 VIPER Positions @33% Discount	N/A	\$23,430
A9-1-1 Network Bandwidth for New PSAP location	\$20,000	\$2,462
Additional A9-1-1 Network Bandwidth for Microwave Redundancy	N/A	included
<b>Total not to Exceed MRF</b>	<b>\$20,000</b>	<b>\$25,492</b>

-Additional Positions and network will be billed when production-ready

**Optional Services**

Optional Services		
Private Switch ALI (PS/ALI) Services		
One-Time Fee per PS/ALI End-User Account	\$1,000	
Monthly Recurring Fee per PS/ALI Record		\$0.03 per TN
Change of setup. Direct to Premier or Premier to Direct		\$0.042 per TN
Professional Services - Program Management	\$100.00, per hour	
One-Time Fee, per additional Use Account	\$150.00	
One-Time Fee, per Replacement Secure ID token	\$100.00	
One-time Fee, for each Secure ID re-assigned to another user	\$50.00	

MSAG Special Projects		
> 1,000 MSAG Entries	\$20,000.00 + \$5,000.00 for each additional group of 1,000 MSAG Entries	
Additional TN simulations - Greater than three (3) simulations, charged per simulation	\$2,500	
Emergency Queries		
One-time fee for first 150 calls to ECRC (base rate)	\$6,500.00	
151 – 299 calls to ECRC	\$0.40, per call	
> 299 calls to ECRC	\$0.35, per call	
Additional Training - Intrado will provide Customer with pricing for customized training upon request	TBD	
Aged Metrics Reports - Intrado will invoice Customer for Professional Services to provide Clear View metrics reports older than one year based on the actual time to retrieve, format and send the requested historical metrics reports	\$125.00 per Hour	
Custom ALI Formats - One-Time Fee, per ALI format	\$950.00	
Full LNP Processing - Intrado can provide customized pricing for additional LNP Services upon request	TBD	
Professional Services for PSAP Consolidation or Profile Changes	\$175.00 per Hour	
Incremental IP Bandwidth – Monthly Recurring Fee		Not to Exceed \$2,000 per position Per order
ENSP - Services		\$100 - Quarterly

#### 4.2. Pricing Notes

- a. If applicable, OTFs will be invoiced on the Order Effective Date.
- b. Existing A9-1-1 Routing and Location Database services covers up to 550,000 in total Population (where “Population” means the total population living or located within Washoe County based on the estimates of population for the United States as available from the U.S. Census data for the Population Estimates for the most recent year (e.g. <http://www.census.gov/quickfacts/>). Population above 550,000 will incur an additional charge of \$.10 per person.
- c. Pricing for this solution for the primary PSAPs is based off a minimum of 21 Positions at \$1,590 per position. The Customer may increase or reduce the position count at any time over the life of the contract understanding that the minimum MRF for VIPER positions is \$33,390

- d. Pricing for additional Positions on existing PSAPs will be quoted at the time of the order and will not exceed \$1,065 per Position. When an additional Position is requested, existing bandwidth usage will be reviewed. If it is deemed necessary, additional incremental IP bandwidth will be acquired to support the new Position. The pricing for additional bandwidth for additional Positions will be quoted at the time of the order and will not exceed \$2,000 per Position per order.
- e. If applicable, OTFs will be invoiced on Order Effective Date.
- f. MRFs will commence as of the date of Acceptance of each Service (see Section 5.7 below). The MRF(s) will be prorated on a 30 calendar day month for the first MRF invoice billing for each Service component.
- g. If requested, additional PSAPs and/or Positions may be added through a change order (see Section 2.3 above).
- h. The professional services rate of \$275.00 per hour will apply to out of scope services unless a recurring rate is agreed by the parties for such services.
- i. Intrado will determine if it is necessary to go on-site to repair a problem with Services. For premise visits requested by Customer, fees will apply at the above professional services rate, including travel time, with a two hour minimum, during Intrado local business hours (8am-5pm, M-F, excluding Intrado-observed holidays), with additional rates if the visit extends before or after these hours.
- j. Intrado is not responsible for any charges Customer may incur from its legacy 9-1-1 service provider or otherwise related to such prior 9-1-1 service.
- k. Intrado will make best efforts to acquire diversity and redundancy of highly available MPLS IP paths from its carrier partners from the Intrado geographically redundant host sites to the mutually agreed upon terminating Customer location.
- l. As stated in the FCC 911 Reliability Order dated Friday, January 17, 2014 there may not be a reasonably viable option to create diversity and redundancy of IP paths from the serving central office to Customer terminating location due to the lack of commercially available carrier and/or physical links.
- m. Intrado will maintain dual networks to the mutually agreed upon Customer location, but these networks may use the same provider or physical path.

## 5. Service Specific Terms

### 5.1. Configuration

The pricing above includes up to the following configuration:

#### 9-1-1 Call Transfers Supported

Washoe County PSAPs (Washoe, Reno, and Sparks PD) will have the capability to conduct 9-1-1 call transfers (with ANI and ALI) to any other PSAPs served by the Intrado A9-1-1 Routing and ALI database services systems. Additionally, Intrado will continue to support call transfers to all PSAPs served by the IntradoA9-1-1 solution as well as all the specified PSAPs on neighboring legacy 911 systems listed below.

The above will enable the following wireless 9-1-1 ANI and ALI transfers for the following PSAPs:

- Interconnectivity will be maintained for
  - o Reno Air National Guard-Neighboring legacy system
  - o Storey County 9-1-1-Neighboring legacy system
  - o Lyon County Dispatch-Neighboring legacy system

- o Douglas County 911 Emergency Services-Neighboring legacy system
- o Carson City Sheriff-Neighboring legacy system

### 5.2. Single Point of Contact; Escalation

Intrado will provide Customer with a Program Manager who will serve as Customer’s single point of contact (“SPOC”) for management of all aspects of the initial Services implementation and ongoing service.. This includes process development, data migration, equipment installation, system configurations, testing, production turn-up and on-going service and support. The SPOC will also be responsible for assessments, planning, and implementation of A9-1-1 Services.

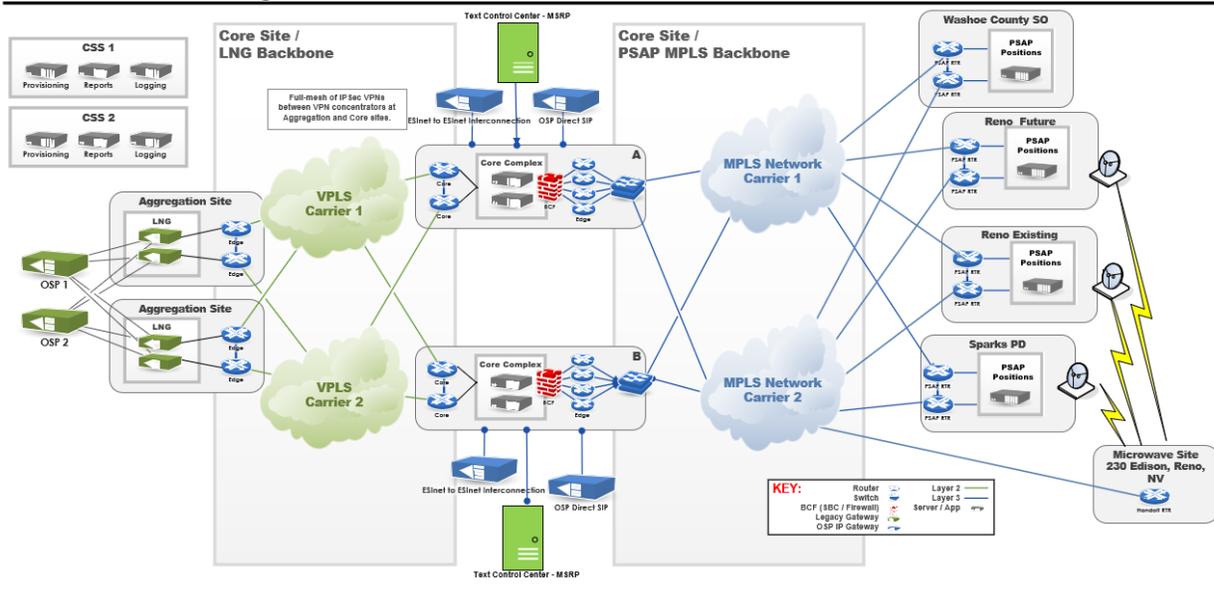
The Program Manager will continue to serve as Customer’s SPOC for issues resolution, escalations, enhancement requests, and planning.

Additionally, Intrado and Customer will exchange key contacts for technical, operational, and managerial personnel assigned to Services deployment and ongoing support. In addition, Intrado will provide Customer with an emergency support 24x7x365 contact number and an escalation contact list. Each party will update and publish these lists on a regular basis.

### 5.3. Network Connectivity

Intrado will maintain MPLS connectivity and network communications equipment from Intrado’s A9-1-1 VIPER network to the Intrado Point of Interconnect (“POI”) located at Customer’s PSAP location(s). Intrado will provide necessary back-office routers and LAN switches to facilitate this connectivity. This network may only be used by Customer in connection with the use of Intrado provided Services.

#### Intrado A9-1-1 Routing Core Site Architecture



### 5.4. CAD Integration Services

Intrado will manage coordination with Customer’s CAD vendor to enable delivery of A9-1-1 Enhanced Data Services via the CAD system. The CAD Integration program includes:

- ESMI (Emergency Services Messaging Interface) Partner Guide
- Access over a VPN to the Intrado ESMI(Emergency Services Messaging Interface) test facility
- Sample non-runnable ESMI(Emergency Services Messaging Interface) code

- Message examples for each service that will be integrated
- Test Plans and test cases for the chosen data services
- Service Descriptions/Specifications/message
- Time in the Intrado ESMI Certification lab to validate A9-1-1 Enhanced Data Services end to end
- Engineering support by an engineering specialist. Engineering support will be available for a total of 160 hours with a maximum of 20 hours in any business week.

### 5.5. A9-1-1 GIS Data Management Services and Software

- a. Generally. A9-1-1 GIS Data Management Service offers a comprehensive and methodical approach to GIS data management that includes flexible procedures individualized to each authority. The overall goal is to help the Customer to create and maintain the authoritative GIS database for 9-1-1 purposes. GIS data, as provided by the Customer, will be used in NG911 transition services, provisioning of the Location Validation Function (LVF), Emergency Call Routing Function (ECRF) and for PSAP map displays. The following GIS Data Management Professional Services and software tools are included in this Order:
- Professional Services as required to convert Customer's i3-related GIS data into a format that will operate with the Intrado-provided interfaces for the A9-1-1 i3 Services. Intrado will support customer in creation and maintenance of GIS layers required to support i3, including Police, Fire, and EMS response boundaries, street centerlines, and address points. This includes services provided by Intrado's experienced 9-1-1 GIS Data Analyst team to provide remote GIS data management assistance to the Customer, including collection of existing GIS data and/or paper maps, GIS data accuracy validation and reporting, and data correction and editing where applicable. In addition, the Intrado GIS Data Analyst team will work with the Customer to provide an agreed upon mechanism for data sharing, reporting, and other GIS project management tasks.
  - Licenses for 4 seats of MapSAG software, Intrado's GIS Data Management software tools which allow the Customer to create and maintain accurate 9-1-1 GIS data and to synchronize the GIS and 9-1-1 databases. The software is installed locally, at the Customer location, and operates through an interface within ESRI's ArcGIS Desktop (ArcView, ArcEditor, or ArcInfo) product. (Esri software is not included.)
- b. Optional GIS Services. Intrado offers other optional Enterprise GIS Data Management services that are available for separate purchase, including:
- Documented data management and sharing procedures
  - Data validation and quality assurance/quality control
  - Customer portal for GIS data management
  - Hosting or managing Customer's GIS data
  - Best practices recommendations
  - Supplemental GIS Professional Services (e.g. support for GIS layers not required to support i3, such as boat ramps, public spaces, hiking trails, etc.)
- c. Software Maintenance and Technical Support. Intrado will provide telephone support for all users during normal business hours (8am-5pm Mountain Time, excluding Intrado holidays), as well as software updates, including patches and updates of major and minor releases. Outside the scope of technical support is any assistance with third-party software or hardware not provided by Intrado, including Esri software functionality that is outside the Intrado GIS software functions. The interface of Intrado's GIS software products with the Esri software is included in support.

- d. Training. Training will be included at no charge on a quarterly basis for Intrado Products and Services. Intrado will provide up to 4 remote training sessions per quarter at no additional cost to the Customer. Training will be based on Customer requests, and scheduling will be jointly agreed upon. If additional training is requested by the Customer, the Customer is responsible for identifying the training attendees and for training additional personnel, as necessary, or contracting with Intrado to provide additional training at the applicable Professional Services fee detailed in the pricing notes.
- e. License Terms. Subject to the terms of the Order and Agreement, Intrado grants Customer a nonexclusive, nontransferable, non-sublicensable license for the term of the Order to use the GIS software identified in this Order ("Software") solely for Customer's internal purposes, and to make a reasonable number of copies of the Software solely for storage, backup, archive and disaster recovery purposes. The Software is Intrado IP under the terms of the Agreement.
- f. Customer will not directly or indirectly (a) sell, lease or, sublicense or otherwise transfer the Software; (b) decompile, disassemble, reverse engineer or otherwise attempt to derive source code from the Software; (c) modify or enhance the Software or write or develop any derivative software or any other functionally compatible, substantially similar or competitive products; (d) network the Software or use the Software to provide processing services to third parties, commercial timesharing, rental or sharing arrangements or otherwise use the Software on a service bureau basis; (f) provide, disclose, divulge or make available to, or permit use of the Software by any third party without Intrado's prior written consent; or (g) use or copy the Software except as permitted hereunder. On termination, Customer will to the extent applicable (a) cease using the Software, and (b) certify to Intrado within one month after termination that Customer has destroyed or has returned to Intrado the Software and all copies.

## **5.6. Emergency Number Service Provider (ENSP) Service**

Intrado will provide one TN extract as an Emergency Number Service Provider on a quarterly basis. A CD will be provided via USPS mail.

## **5.7. Service Acceptance**

Intrado will provide Customer with notice of availability of each Service. Acceptance of each Service ("Acceptance") will occur on the earliest of the following events: (1) Customer provides written notice of acceptance; (2) Service is used, or is capable of being used, by Customer in a live environment, or (3) three calendar days pass after Intrado's notice of Service availability without receipt of a Customer notice of material defect. Capable of being used means that Intrado has completed its obligations herein and any delay to the system going live is due to events of third parties or events otherwise outside of Intrado's control.

## **5.8. Limited Exclusivity**

Customer grants Intrado the exclusive right to provide Services or similar services to Customer. Nothing herein will prohibit Intrado from providing services similar or identical to Services provided to Customer hereunder to any other entity or person, whether or not such services are utilized for emergency purposes; provided, however, that Intrado does not use Customer's Confidential Information to do so.

## 6. Entire Agreement

This Order is made under the Governing Agreement first referenced above. This Order, its Appendices, and referenced Service Guide(s), along with the Governing Agreement, constitute the parties' entire agreement and supersede any prior written or oral agreements related to its subject matter. The order of precedence for any conflicts is: (i) this Order; (ii) the Service Guide(s); and (iii) the Governing Agreement. This Order may be executed in counterparts, by facsimile or electronically, and is not enforceable unless executed by both parties.

**WASHOE COUNTY, NEVADA ON BEHALF OF THE 911  
EMERGENCY RESPONSE ADVISORY COMMITTEE**

**INTRADO LIFE & SAFETY, INC.**

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Authorized Signature

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Authorized Signature

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Name Typed or Printed

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Name Typed or Printed

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Title

Date signed

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Title

Date signed



# A9-1-1<sup>®</sup> Routing Service Guide

Version 2019.09.30

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## 1. Introduction

This Service Guide describes Intrado's A9-1-1 Routing services ("Services"). Services are a fully managed solution offering emergency call delivery over a managed Internet Protocol ("IP") network. Services include the following major components:

- Intrado's Emergency Services IP Network ("ESInet") which is a multi-layer redundant IP network designed to support high system availability.
- Routing, delivery, and management of 9-1-1 calls from both traditional and next generation networks to Public Safety Answering Points ("PSAPs") that are i3 capable as well as legacy PSAPs on the path to i3.

A foundational element of Services is the ESInet, which securely transports emergency calls to all public safety agencies using Service. Such public safety agencies are responsible for receiving, managing, and responding to emergency calls. The ESInet supports end-to-end IP connectivity with IP and Time-Division Multiplexing ("TDM") ingress and egress options, thereby working with legacy wireline and wireless originating and terminating networks as well as next generation IP originating and terminating networks.

The principal application supported on the ESInet is emergency call delivery from an Originating Service Provider ("OSP") to a PSAP. All associated transfers, bridging and hand-offs required to manage the emergency call are supported. The routing functions that support emergency call delivery determine the correct destination according to i3 or traditional legacy selective routing rules and policies.

There are two primary emergency call delivery solutions available with Services:

- a. IP Selective Router ("IPSR") Replacement: this solution replaces traditional legacy selective routing with an IP infrastructure (ESInet) that uses traditional routing logic. This routing logic consists of the calling party Automatic Number Identification ("ANI")/TN match to an Emergency Service Number ("ESN") and an Electronic Switching System Identification ("ESSID") to determine the appropriate destination (e.g., PSAP).
- b. A9-1-1 i3 Routing Services ("i3 Services"): this solution is in accordance with NENA i3 standards and is based on a caller's originating location as provided in the Presence Information Data Format-Location Object ("PIDF-LO") message and jurisdictional GIS data.

### 1.1. Architecture and Services Availability

Services are designed to achieve high availability through an active-active processing methodology, geographically diverse and distributed components, highly available components, and redundant IP transport. Services support 99.999% availability for call processing with no single point of failure that will disrupt the ability to provide on-going call processing.

All functions necessary for call processing are deployed in a highly available configuration and duplicated across call processing centers. Transactions or call traffic will divert to available components upon failure or degradation of a given functional component or loss of a physical site. IP transport for critical service components is redundant and designed for multipath IP packet delivery so the failure of a given IP transport mechanism will not affect overall service availability.

Services are monitored 24x7x365 by the Intrado Network Operations Center ("NOC"). Transactions are logged for reporting and analysis. Transaction information is available to Customer on a daily basis through the performance reporting suite and Customer Management Portal ("CMP").

### 1.2. Shared Services

Terms relating to facility requirements, system testing, migration, support, and escalation procedures are described in the Shared Service Guide referenced in Customer's Service Order. These terms apply to Services described herein. In addition, the glossary found in the Shared Service Guide will define certain capitalized terms used in this Service Guide.

## 2. Services Features

### 2.1. IPSR Solution

The following components are included in the IPSR solution:

- ESInet
- Functional Routing Elements for Call Delivery
  - Emergency Call Router (“ECR”)
  - Policy Routing Function (“PRF”)
  - Legacy Network Gateway (“LNG”)
  - Legacy Selective Router Gateway (“LSRG”) interface
  - Legacy PSAP Gateway (“LPG”)
- Routing Policies:
  - Route lists for Primary, Alternate, Abandonment destinations
  - Ingress trunk resource management by call type
- Bridging (Transfers and Conferencing)
- CMP
- Reporting-Service Performance
- Optional Features:
  - PSAP Abandonment Device (“PAD”) (on premise)
  - Enhanced Routing Options
  - Advanced CMP

### 2.2. i3 Solution

The following components are included in the i3 solution:

- All elements and features included in the IPSR solution
- ESInet with Certificate Management for authenticated data bids from the PSAP
- Functional Routing Elements for Call Delivery
  - Emergency Services Routing Proxy (“ESRP”)
  - Emergency Call Routing Function (“ECRF”)
  - Location Information Server (“LIS”) Interface
  - Additional Data Repository (“ADR”) Interface
  - Spatial Interface (“SI”)
  - Location Validation Function (“LVF”)
- Optional Features:
  - Store coverage areas for other (non-Intrado) ECRFs
  - Forest Guide simulation support, in lieu of National Forest Guide deployment

### 2.3. Services Description

#### 2.3.1. IPSR Solution

Services IPSR solution is a multi-tenant NG9-1-1 service that replaces legacy TDM selective routing. The routing functions process inbound emergency calls from source, typically a 9-1-1 caller, to destination, which is typically a PSAP. Services will process all inbound emergency calls based on the configured routing rules of the LNG ingress trunk group and PSAP routing policies. Services use the same selective routing elements as traditional TDM networks; this includes calling party ANI/TN, ANI match to an ESN, and an ESSID. The ESSID/ESN combination determines the specific destination, such as a PSAP. This is sometimes referred to as ESN based routing.

An example call path is presented in Figure 1.

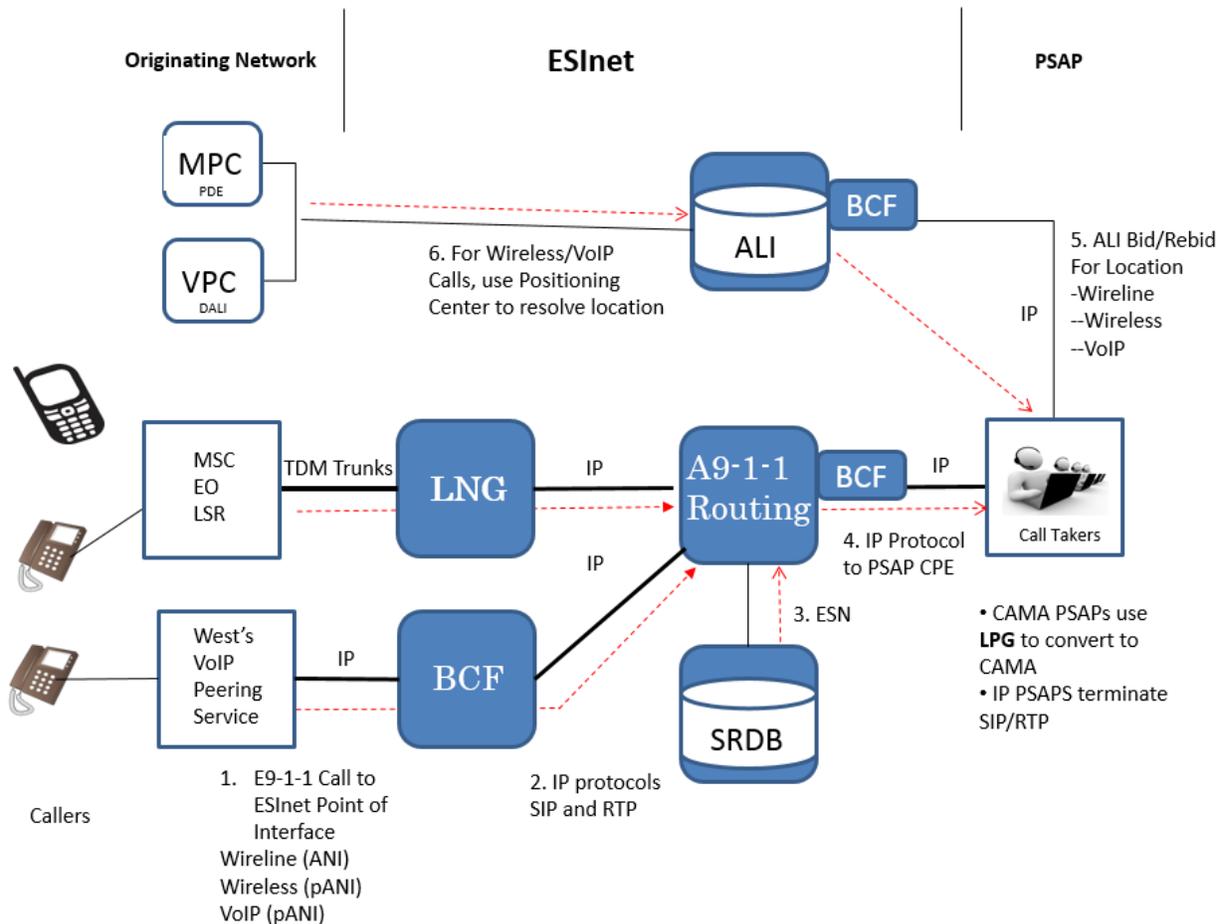


Figure 1

### 2.3.1.1. ESInet

A foundational component of Services, the ESInet is a managed IP network specifically built to support emergency services communications.

#### Border Control Function (“BCF”)

BCF for IPSR traffic is provided by a Session Border Controller (“SBC”) which inspects the voice and signaling traffic. It is configured to restrict traffic to authorized end points where the ESInet and PSAP networks interconnect, and where the ESInet connects with other network service providers.

### 2.3.1.2. Ingress Options

Services support TDM SS7 calls from OSP as the standard ingress signaling configuration. Other signaling options such as PRI can be supported upon request.

Intrado recommends diverse links from the OSP to each Intrado ESInet demarcation point. The demarcation points are typically located at regional aggregation sites. Originating TDM traffic is converted from TDM/SS7 to IP/SIP. It is the responsibility of the OSP to deliver emergency calls to the Intrado ESInet point of interconnection (“POI”).

Call handoffs and transfers from legacy selective routers are supported. The arriving call is delivered and handled the same as any other ingress call.

### 2.3.1.3. Egress Options

Services deliver emergency calls in a SIP format to the PSAP at which point Customer has two interface options depending on the capabilities of the premise-based Customer Premise Equipment (“CPE”). The interface options support legacy CAMA and SIP. The SIP interconnection supports both ESN and i3 Services protocols. Intrado will provide CPE interface specifications for SIP connections upon request.

Intrado requires a minimum of two diverse transport facilities, primary and back-up, to a PSAP or a Customer provided network supporting their PSAPs. Terminating network equipment is provided by Intrado to support termination and hand-off of the emergency call at the PSAP. Intrado configures, monitors, and maintains Intrado provided equipment.

Customers using Services can leverage the egress connection from the A9-1-1 ESInet to the PSAP for text and ALI delivery. Customer’s CPE is required to support Intrado’s interface specifications for these services. Interface specifications are available upon request.

Additional fees for management and monitoring of non-voice messages such as text and ALI bids may apply to address set-up configurations, terminating equipment components, incident management, and reporting.

The egress connectivity methods are described below.

#### **CAMA PSAP**

For stand-alone PSAPs with CPE that require CAMA trunks, Intrado will terminate its network on a telecommunications block (typically a 66 block). Intrado will provide a router and a LPG per transport facility connection.

#### **SIP PSAP**

For stand-alone PSAPs with CPE that is capable of supporting an SIP interface, Intrado will terminate its network on a Intrado provided A9-1-1 router. Customer must provide one free LAN Ethernet 100Mb/full duplex port per Intrado router for this configuration.

Intrado, when acting as the Covered 9-1-1 Service Provider for those primary PSAPs as identified as having an A9-1-1 router on premise, will provide notification of service disruptions in compliance with applicable law.

#### **SIP PSAP with a Multi-node Configuration**

This option is suited for PSAPs or host sites, which are part of larger configuration such as host/remote or multi-node. For this option, Intrado routers are deployed at sites within Customer PSAP network and provide the ability to dynamically failover between sites. This option requires Customer to provide to Intrado router/firewall Ethernet ports with BGP routing protocol with 100MB/full duplex per port.

The Intrado demarc (egress point of interface) is the A9-1-1 router. Emergency calls are delivered to this demarc and Intrado is not responsible for FCC outage reporting, monitoring and network diversity beyond this egress point of interface to the PSAP’s network. Any PSAP listed in the Service Order which does not have an A9-1-1 router on premise is considered a “remote” site and is not within Intrado FCC Notification responsibilities. Customer’s responsibility in a multi-node configuration is to deploy sufficiently redundant, reliable, and resilient networks to properly reroute emergency calls in the event of an outage. When the multi-node hosts are located on Customer premise, Customer has the responsibility to manage the network failover between the CPE sites.

For multi-node configurations, Customer will provide notification of PSAP network outage to Intrado NOC as soon as possible, but no later than 30 minutes. The purpose of this notification is to keep Intrado informed about the outage and to enable Intrado to assist Customer’s efforts to restore service and/or redirect traffic to another appropriate location. Nevertheless, Intrado is in no way responsible for FCC Notification in multi-node configurations where a “remote” PSAP listed in the Service Order does not have an A9-1-1 router on premise.

#### 2.3.1.4. Functional Routing Elements

##### **ECR**

This element manages all call routing decisions for Services using the SIP protocol. It works with the Intrado Selective Routing Database (“SRDB”) which contains the mapping of the TN to ESSID/ESN combination required to selectively route the call to the appropriate PSAP. It is configured with sets of routing rules provisioned for each PSAP.

SIP is the signaling protocol that the ECR uses to communicate with other A9-1-1 call processing network elements.

##### **SRDB**

The SRDB contains the mapping of the TN to ESSID/ESN combination, which is required to selectively route to the appropriate PSAP. The ECR uses the information in the TN and ESSID/ESN tables to route calls. The SRDB also contains other data items to aid in PSAP resource selection, such as Class of Service (wireline, wireless, VoIP) and Latitude, Longitude, and elevation.

##### **PRF**

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

##### **LNG/LSRG**

The LNG/LSRG are signaling and media interconnection points between callers in the legacy originating networks and the IPSR NG9-1-1 architecture. The LNG converts calls from TDM to SIP signaling for ingress to the ESInet. The LSRG converts calls from SIP to TDM signaling for egress from the ESInet to the PSTN.

Per NENA STA-010.2, the LNG is comprised of three primary components. These components are the Protocol Interworking Function (“PIF”), the NG9-1-1 specific Interwork Function (“NIF”) and the Location Interwork Function (“LIF”). For the IPSR service, the PIF component is performed at the edge of the ESInet. The NIF function is performed by the ECR. For i3 Services, the LIF component is enabled to retrieve location for i3 formatted calls.

The LSRG provides an interface between a 9-1-1 selective router and an ESInet, enabling calls to be routed and/or transferred and/or handed-off between legacy and next generation emergency networks. A call hand-off may be required when Services receives a call that it deems should be rerouted to a legacy foreign selective router.

Availability and survivability of these routing elements is achieved by distributing TDM circuits from OSPs across multiple LNGs so that the failure of one LNG will not impact all the circuits from a given originating service area. The SS7 signaling elements are also redundant and geographically distributed so that a single failure will not interrupt continued call processing. Services have default routing capabilities for scenarios where a location is not provided in a timely manner.

##### **LPG**

The LPG provides a conversion service from SIP to TDM signaling for PSAPs with legacy CPE that require a CAMA interface. Services refer to this routing element as the PSAP Gateway Manager (“PGM”). Two PGMs are deployed to each PSAP for redundancy and failover. The PGM supports 8-digit CAMA and 10-digit EMF.

#### 2.3.1.5. Routing Policy Rules, Attributes, and Features

Services process all inbound emergency calls based on the configured routing rules for the PSAP.

##### **Routing Rules**

The routing rules support:

- Management of wireline, wireless, and VoIP call types
- Identification of each end office (“EO”), OSP or mobile switching center (“MSC”) trunk for either selective routing or trunk-only routing, based on:

- Selective Routing: Calling party ANI, ANI match to an ESN and an ESSID, or a pseudo ANI (“p-ANI”) used to look up ANI for wireless and VoIP calls.
- Trunk Only Routing: Incoming EO trunk is assigned an ESN/ESSID, which relates to a specific ingress trunk group.

Intrado coordinates with each OSP and confirms that the signaling interface for incoming trunks from the EO or MSC to the Intrado ESNet is appropriate so as to provide the following information:

- Incoming signal type
- Call type
- P-ANI administration, if applicable

### Implementing Configurable PSAP Attributes

Customer identifies which personnel at each of Customer’s PSAPs are authorized to request PSAP configurable attribute changes. Intrado will provision the following PSAP configurable routing attributes as requested by Customer.

- Primary and alternate routes
- PSAP abandonment routes
- Selective transfer star code destinations (e.g. \*11 thru\*19) for first responders, Police, Fire, and EMS
- Fixed bridge lists (e.g. \*20 thru \*49) for poison control, neighboring PSAPs or other similar destinations
- State-wide bridge list (e.g. \*500 thru \*999) to standardize star codes for PSAPs across an entire State.

PSAP preferred routing instructions apply to the following:

- PSAP Abandonment Routing: specific routing instructions to be applied if the PSAP must evacuate the facility or the PSAP is closed for a period of time.
- PSAP Alternate Routing: Specific routing instructions to be applied as an alternate location for routing if all lines to the primary PSAP are busy, or the PSAP is unreachable (but not abandoned).. Multiple, prioritized alternate route destinations are supported.
- PSAP Default Routing: Specific default routing instructions to be applied for each incoming trunk group. 9-1-1 calls are routed to the default PSAP if an ANI failure occurs, no record found (“NRF”), or unintelligible digits are received from EO.
- PSAP Destinations and Route Lists: PSAP is able to specify a unique route list for each routing rule. These route lists allow for designation of a primary target for call routing and includes numerous prioritized alternate destinations such as:
  - PSAP served by Services
  - PSAP served by a non-Intrado selective routing service
  - PSTN number
  - Fast busy
  - Treatment message
  - Custom tone
- PSAP Trunk Group Management: Each incoming trunk group is individually designated to carry a particular call type and/or combination of call types (wireless, wireline, VoIP).

Intrado will configure the following PSAP configurable trunk attributes for each of Customer’s PSAPs requiring a CAMA interface.

- Numbering Plan Digit (“NPD”) assignment (if appropriate)
- Trunk assignments by call type (wireline, wireless, VoIP, or any combination)
- Each PSAP may designate specific trunks to handle specific call types, or any combination of call types. Call types include wireline, wireless, and VoIP. The benefit is that one call type cannot overrun the available trunks at a PSAP. If a PSAP chooses to designate specific trunk members for specific call types, the PSAP may also elect to have calls of a certain type overflow to trunk members designated for a different call type. For example, a PSAP that typically receives many

wireless calls for a single incident (i.e., rush hour traffic accident) may overflow the calls to the trunks supporting wireline calls.

### **Modifying Configurable PSAP Attributes**

Following production turn-up of Services, Intrado will complete PSAP configurable attribute changes within five Business Days of receipt of a written request (including email) from Customer or authorized Customer PSAP personnel.

All requests must be submitted to the Intrado Project Manager for review and implementation or, following Production Turn-up, to the Intrado Program Manager. The five Business Day timeline may be exceeded if the Intrado Project/Program Manager determines that further discussion is needed with PSAP before implementing the changes, for example where the change is technically unadvisable or unfeasible.

For PSAP abandonment, Customer may contact the Intrado Emergency Call Relay Center (“**ECRC**”) to engage the configured PSAP Abandonment Rules. The Intrado ECRC will engage the PSAP Abandonment Rules within 15 minutes of receiving a PSAP abandonment request.

#### 2.3.1.6. Call Transfer/Bridging and Conference

### **Transfer/Bridging**

Services include the following flexible transfer/bridging functions for each PSAP. Transfers and bridging is supported between other PSAPs on these Services or PSAPs supported by another selective router service.

- Selective Transfer/Bridge: The ability for the call taker to transfer or N-way conference an incoming call to another agency by selecting the agency; e.g., “Fire,” on Customer PSAP CPE
- Fixed Transfer/Bridge: The ability for the call taker to transfer or N-way conference
- Manual Transfer/Bridge: The ability for the call taker to complete a manual transfer
- Call Transfers between LEC Providers

### **Supporting Transfers to PSAPs not using Services**

Customer PSAPs on Services can transfer calls to PSAPs not using Services. However, connectivity must be established between the A9-1-1 ESInet and the selective router or ESInet supporting the PSAP served by another provider. For Wireline, Wireless and VoIP calls, the Telephone Number (“**TN**”), Emergency Services Routing Key (“**ESRK**”) and Emergency Services Query Key (“**ESQK**”) should be provisioned into each 9-1-1 service provider’s ALI system so that location information can be retrieved by the receiving PSAP’s ALI system.

Interconnection with the other 9-1-1 service provider’s selective routers and ALI systems require the cooperation of such service provider. When cooperation of such service providers is not received, transfers to secondary PSAPs served by legacy SR service are conducted via PSTN without ANI or ALI. Inclusion of secondary PSAPs onto Services (which would enable full ANI and ALI transfer to them) is out of scope and subject to change order unless specially listed in the Service Order.

If the legacy 9-1-1 service provider does not support the inter-ALI connectivity, an alternate method of call transfer processing is required. The alternative to inter-ALI connectivity is for both Intrado and the legacy service provider to provision TN data into their respective ALI systems. This method is also known as ‘dual loading’. In using this method, the call transfer is performed (including ANI) via the interconnection between the legacy service provider and Intrado selective routing solution. ALI is provided by the 9-1-1 service provider for the receiving PSAP.

### **Bridging with Conference Control**

A conference bridge is a call scenario involving more than two call participants. A call participant is any destination participating on the conference call such as the original terminating CPE, PSTN, and any additional terminating CPE. After the initial dialog between the caller and the call handler has been established, any call handler may bridge one or more additional participants. A call handler is any member on the bridge that is a terminating ESRP.

Services support the following conference call scenarios.

- For SIP enabled PSAPs:
  - The initial call handler may bridge one or more participants to the call.
  - Added call handlers may bridge one or more additional participants.
  - Any call handler may drop any participant that they have bridged to the call.
  - Any call handler may drop the last participant that joined the bridged call.
  - A call handler may drop any participant if they have the corresponding Universal Resource Identifier (“URI”).
- For CAMA PSAPs:
  - The initial call handler may bridge one new participant to the call.
  - Added call handlers may bridge one additional participant.
  - A call handler may drop the participant they added to the call. Any participants added by dropped call handler will also be dropped.

To ensure quality of service, Services limit the number of conference call participants to ten as a standard configuration.

#### 2.3.1.7. 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:

- Provisioned PSAP contact information and feature subscription information
- 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
- 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
- A list of PSAPs that have your PSAP as the primary destination in their route list
- 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
- Fixed transfer and Bridge list (speed dial) for frequently called numbers such as ‘poison control’
- Statewide PSAP directory (as applicable) which can be used by any PSAP in a state to contact any other PSAP in the same state
- 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:
  - Call start
  - Answer
  - 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.

#### 2.3.1.8. Performance Reporting Metrics

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.

### Reports

The following are standard reports provided for Services:

- Event Count Reports per Hour: provides metrics for total calls in which Customer's PSAP participated by hour for a day, week, or month.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

### **2.3.2. IPSR Replacement Optional Features and Functions**

#### **2.3.2.1. PSAP Abandonment Equipment**

Customers may order and use a PAD as part of Services equipment installed and managed on the PSAP's premises. The PAD enables 9-1-1 calls to be re-routed to a pre-provisioned alternate destination if a PSAP is unable to receive and answer calls. This device can also be used when a PSAP is abandoned due to a catastrophic event or to support manned versus un-manned operating hours; e.g., PSAP A is manned from 7 AM to 7 PM Sunday through Saturday and then 9-1-1 calls for that jurisdiction are supported by PSAP B from 7 PM to 7 AM on the same days.

If the PSAP chooses to not have a PAD, Intrado will perform the abandonment function on behalf of the PSAP upon request.

#### **2.3.2.2. Advanced Routing Options-Call Volume Distribution**

Given a set of overflow destination choices, the call routing for Primary/Alternate or Abandonment routing will evenly distribute incoming calls over the set of overflow destinations. Up to ten destinations per route list can be supported.

This feature can be requested by Customer during initial turn-up of Services/ESInet service or as a change request by Customers in service. The options are:

- Use for overflow from the primary PSAP to alternate PSAPs
- Use for distribution to two or more PSAPs when in an abandoned state

For each option above, a route list of PSAPs is required. Customer may choose from route lists they have in place or they may create a new route list to be specifically used for this feature. This feature is either 'on' or 'off' for all calls.

#### **2.3.2.3. Advanced CMP-Administrative Roles**

The CMP is a web-based application that allows authorized personnel from regional agencies or PSAPs to view, through a single sign-on, the following information for one or more PSAP level accounts deployed on Services ESInet:

- Provisioned PSAP contact information and feature subscription information
- PSAP operational state and a 90-day PSAP state history report
- Abandonment Back-up Route Lists

- Fixed transfer and bridge list
- ESN selective bridge list
- Statewide PSAP directory (as applicable)
- CDRs

### **Roles**

There are multiple roles associated with the CMP. These roles determine what information is accessible to the user and what tasks can be performed by the user.

The Role included with Services is 'PSAP View Only'. This role allows users to view information associated with a single PSAP. Please see Section 2.3.1.7 above for a description of what information is available to view.

For an additional charge a role for Customer and/or Regional Authority can be provisioned and supported. This role allows the user to view contact, configuration, and CDR information for multiple PSAPs with a single set of log-on credential.

### **2.3.3. i3 Services Standard Features and Functions**

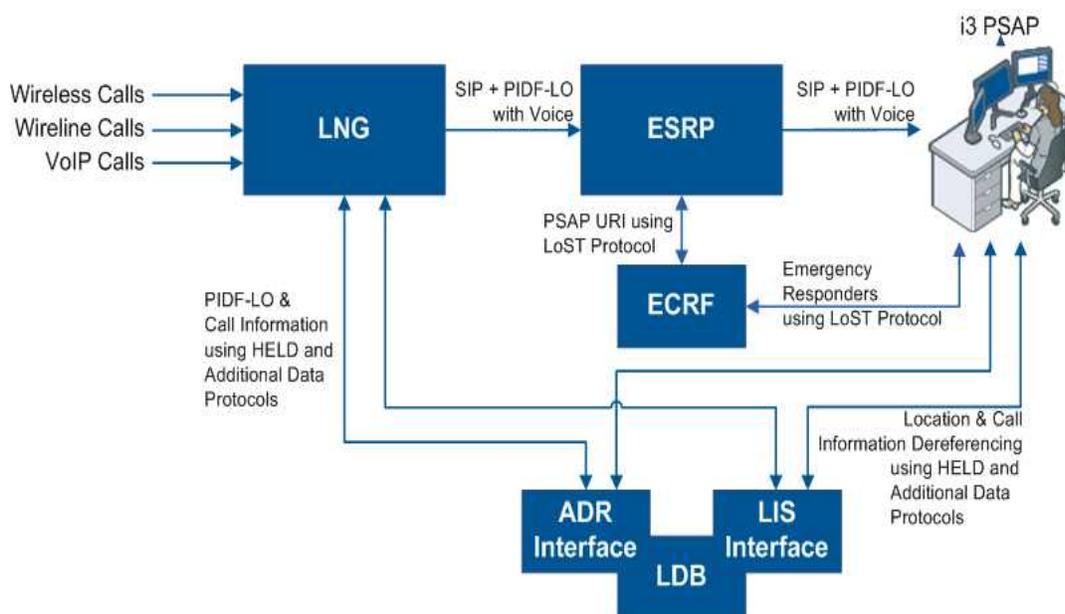
i3 Services provide Customers with SIP-based call routing compliant with i3 functionality as referenced in NENA Detailed Functional and Interface Standards ("i3 Reference Architecture"). Intrado will continue to evaluate both recent and future changes to the specification and update pertinent core services 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 includes:

- 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.
- 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.

An example call path is presented in Figure 2.



**Figure 2**

All features and functions provided with IPSR are included with i3 Services. In addition, the following i3 specific features and functions are included as standard components.

#### 2.3.3.1. ESInet

The ESInet continues to be the foundational component of i3 Services.

#### BCF

For i3 Services, the BCF is expanded to include certificate management to securely manage access to i3 data elements.

#### 2.3.3.2. Egress Options

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.

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

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

The Egress connectivity options are the same as described for IPSR. Please see Section 2.3.1.3 above for a description of the connectivity options.

### 2.3.3.3. Functional Routing Elements

#### ECRF

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.

#### 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:

- Secure GIS file transfer
- Automated schema change detection and error notification
- 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.

### **Location Information Service (“LIS”) and 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 a 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 a 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.

### **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 ESInet. 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.

### **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.

#### 2.3.3.4. Routing Policy Rules, Options and Features

i3 Services support the same configuration options available with IPSR service as well as the option below.

##### **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.

#### 2.3.3.5. Performance Reporting

i3 Services support the same reporting options available with IPSR service.

### **2.3.4. i3 Services Optional Features and Functions**

The Optional Features and Functions available with IPSR are available with i3 Services. In addition, the following features and functions are available for an additional charge.

#### 2.3.4.1. ECRF Options

##### **Non-Intrado Coverage areas**

Store coverage areas for other (non-Intrado) ECRFs

#### 2.3.4.2. Routing Options

##### **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:

- a. 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.
- b. 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.
- c. An Additional Data protocol interface to retrieve additional call information.
- d. A LoST protocol interface into the ECRF for the retrieval of responder selective transfer information.

### **2.3.5. General Services Attributes, Limitations, and Disclaimers**

Services have the following general attributes:

- Intrado owns and manages all functional routing elements.
- i3 Services are designed to work with both Intrado and non-Intrado GIS Location Data Management ("LDM") services. However, the Intrado GIS LDM services provide a seamless end-to-end solution with economic advantages due to workflow efficiencies.
- If a foreign GIS service is used, the accuracy and completeness of the data is the responsibility of the 9-1-1 Authority, which includes a LVF validation of civic address prior to a call being placed.
- ESInet PSAP connections can be used for other Intrado-provided services, including but not limited to ALI bids and TXT29-1-1.
- Hosting of the ADR and/or LIS is not Intrado's responsibility.

### 3. Training

Intrado will provide training to county/municipal coordinators for access to the CMP. Each training session will last approximately up to two hours and will be via a telephone and/or web conference.

### 4. Services Turn-Up

#### 4.1. Overview

The Intrado Solution Delivery approach to plan, configure, network engineer, implement, test, document, train, and support Services follows Intrado's time-proven Solution Delivery methodology. The lifecycle begins with solution definition and architecture activities. During these initial phases, the joint Customer and Intrado team members verify system application and implementation requirements, refine the solution architecture, and finalize the plan for solution deployment. Following definition and architecture phases, the Intrado team orders, installs, configures, tests, and trains users on Customer-facing solution components as part of the deployment effort. Following successful deployment, the maintenance phase begins. The primary goal of this methodology is that the project aligns with overall Customer expectations, and is tailored to fit the needs of Customer. The Project Plan phases are described below.

#### 4.2. Solution Definition

The first phase is the Solution Definition, which begins with the kickoff and alignment process and is critical to the overall success of the 9-1-1 initiative. During this process, key members of the joint project team unite to identify roles, responsibilities, critical success factors, project challenges, elaborate on specific strategies and project options, confirm Services project scope, and finalize plans to expedite solution delivery plans and resources. The proposed solution is reviewed in order to align each primary stakeholder with a common vision and strategy for unified team design and planning. The Intrado team conducts current systems, processes, and site surveys to more clearly understand the current system and user environment, allowing the Team to plan the most effective migration path to the new system.

#### 4.3. Solution Architecture

During the Solution Architecture phase, the detailed solution design is finalized based on confirmed requirements. During this phase, the Intrado team analyzes the current systems, operations, and operational procedures, identifies the human factors needs, considers implementation options, and with Customer, commits the detailed solution design and implementation schedule.

Stakeholder participation to identify processes and standard operating impact is critical in this process to support a successful integration of the new system. Current procedures, connectivity, and routing policies are examined so that the appropriate practices are carried forward to the new system environment. Examples of important areas considered include load balancing philosophies and default routing rules.

Initial planning for connectivity from the telephone service providers to the POIs also begins in the architecture phase. Key solution architecture planning activities include:

- Detailed solution design and schematics (onsite, site to site, site to Intrado, routers, etc.)
- OSP connectivity specifications
- Physical requirements (e.g., equipment room design, floor loading)
- Call transfer requirements
- Training plan and schedule
- Refined project plan and timeline

#### 4.4. Solution Integration

During the Solution Integration phase, the components of the solution, including processes, applications, servers, network components, and data flow, are ordered, engineered and readied for deployment. All network, regional, and customer premises components are delivered, and the equipment rooms and other facilities are readied. Coordination with wireline, wireless, and VoIP OSP is an essential part of this stage

to plan for Services management transition. OSP receive all necessary information and detail to obtain connectivity to the Intrado systems and the service provider's connectivity to the POIs is engineered and ordered.

Working closely with Customer and stakeholder groups, the project team designs customized provisioning plans (including incoming trunk route plans, bridge lists, and dialing plans). Additionally, the documentation developers customize the user and process documents, if needed, to meet the needs of Customer.

#### **4.5. Solution Deployment**

During the Solution Deployment phase, all network components and equipment connectivity is validated and acceptance tests are performed, metrics tracking, reporting is initiated, and training is provided. After complete non-live call testing, the system begins supporting live 9-1-1 traffic.

In preparation for deployment and in partnership with Customer, the Intrado Project Manager finalizes the cutover plan, including procedures for notification concerning schedule specifics. Prior to the commencement of cutover, the project team members will hold a cutover meeting with Customer and the telephone service providers. The purpose of this meeting is to discuss the progress of activities and the cutover readiness.

PSAP training is provided in accordance with the detailed training rollout plans. The system will then undergo a system acceptance test and quality walkthrough. Once complete, and in agreement with Customer, a live-traffic cutover will then commence. Once live traffic has moved to Services, the maintenance period begins.

#### **4.6. Solution Maintenance**

The Solution Maintenance phase begins once live traffic is transferred onto any part of Services. During this phase, Intrado provides ongoing tiered support services to monitor service level performance, manage help desk requests, escalate support procedures, and support Customer to reach the highest level of operational excellence. The solution support team is in place to receive, analyze, and rectify problems and address information requests.

#### **4.7. Intrado Project Support**

Intrado designates a project manager to act as Intrado's project lead and the primary interface with Customer's appointed contact for project collaboration. Project collaboration includes:

- Coordination of project kickoff meeting with Customer
- Coordination with Customer for implementation planning and design and requirements definition
- Identification and communication of key milestone dates and events for the implementation timeline
- Program tracking of the master project plan and task management of the project implementation
- Coordinate and manage all necessary Intrado resources to complete Services deployment activities
- Work with each Customer PSAP to develop a detailed project plan that includes milestones for each project phase. This plan is refined over the course of the project as mutually agreed by both parties.
- Appoint a Customer Program Manager

Following the deployment phase completion, the Customer Program Manager will serve as Customer's primary point of contact for issues resolution, escalations, enhancement requests, and planning. They will provide Customer with an emergency support 24x7x365 contact number, a routine support contact list, and an escalation contact list. It is the responsibility of each party to update and publish these lists on a regular basis.

#### **4.8. Customer Project Support**

Customer designates a 9-1-1 operations contact to act as Customer's project lead for the duration of the project. Customer's project lead works with the Intrado project lead to:

- Assist with the coordination of the project kickoff meeting with Intrado and Customer technical resources
- Coordinate Customer's technical resources for implementation planning, design and requirements definition
- Reporting and verify problems related to the project
- Facilitate ongoing communications with Intrado
- Assign appropriate Information Technology ("IT") personnel and experienced call takers at each PSAP who understand the overall impact of the transition of the 9-1-1 systems and can assist in the overall impact planning for transition activities such as testing and migration. This activity may include Intrado and Customer's appropriate technical and operational groups to assure a solid understanding of the network architecture, data exchange procedures, PSAP needs, standard operational procedures, and services as designed for Customer.

#### 4.9. OSP Communications and Trunk Migration Plan

Intrado works with Customer to develop a joint communication to each PSAP, government organization, and appropriate OSPs outlining the scope of Services to be implemented, a high-level implementation schedule, and key contact information for each entity. Intrado distributes the communication on behalf of Customer. Intrado takes responsibility for:

- Facilitating the establishment of OSP communication guidelines with Customer
- Adhering to these guidelines for the project implementation and Services duration
- Working with Customer to determine and agree on the strategy for all OSP trunk migrations
- Establishing expectations with each OSP
- Managing communication to the OSP for items related to Services on behalf of Customer
- Escalating to Customer, as appropriate, regarding OSP initiatives; requesting Customer intervention when necessary

#### 4.10. TSP Trunk Migration

Intrado works with the ILEC to place the PSAP in-service via the ILEC's legacy selective router and ILEC EOs wholly contained within the PSAP's boundaries for all traffic and in parallel works with each OSP to plan for and execute the migration of its 9-1-1 call traffic to Services. Once the PSAP has been placed in-service on Services via aggregated traffic from the ILEC, each OSP will be requested to establish connectivity from each OSP EOs and MSCs serving Customer's PSAPs to at least two Services POIs. Each OSP will be responsible for the cost of ordering and maintaining required circuits to connect to the POIs such that each EO has routes to at least two POIs for diversity and redundancy. Single POI connectivity from any EO is not warranted under this contract.

Each OSP may connect to Services using any of the following ESInet standard interfaces:

9-1-1 Call Signaling Type
SS7 Wireline/NCAS (ten digits)
Intrado VoIP 9-1-1
SIP NNI for TDM Replacement

An OSP may request connection to Services using the following non-standard ESInet interface. Each request will be reviewed on a case by case basis. Additional charges to the OSP may be applicable if the request can be supported.

9-1-1 Call Signaling Type
PRI/NI-2 (wireline, NCAS)

If an OSP requires an interface not included in the tables above, Intrado will use commercially reasonable efforts to include these additional interfaces upon request. Additional charges may apply.

Intrado is not responsible for any OSP charges including ILEC charges for 9-1-1 trunks from OSP EOs to Services. Customer will be responsible for any OSP charges related to OSP presenting the 9-1-1 call (voice and ANI) data to Services. Customer will also be responsible for any charges from other 9-1-1 service providers related to 9-1-1 call transfer to PSAPs on foreign selective routers, or any other services outside the scope of this Service Guide. If Customer is currently obligated to pay for OSP TN data (SOI files) and/or EO trunks, this agreement does not eliminate that obligation.

#### 4.11. Development of Transition Plan from IPSR to i3 Services

Intrado will work with Customer to develop a transition plan for Customer to migrate from IPSR service to i3 Services as required. The transition plan will outline the following key objectives and deliverables, and will be mutually agreed on prior to implementation:

- Collaborate on implementation schedule with i3 routing functions supported
- Analyze Customer-provided GIS data to support GIS-based call routing
- Confirm Customer's i3 enabled CPE has successfully passed interoperability testing with i3 Services

### 5. Split Rate Center Scenarios

Wireline EOs where Customer PSAPs receive Services and some end users are served by another entity's 9-1-1 routing service are considered to be "split EOs" or "split wire centers". The following considerations must be finalized prior to implementation of Services.

- OSP or ILEC may be requested to "sort" the 9-1-1 call traffic at the split wire center (EO) within a rate center, and directly route all 9-1-1 traffic that is destined for Customer from the split wire center to the Intrado Services network where the OSP or ILEC have the predominate number of subscribers in the rate center for selective routing. Such capability is possible where TSPs or ILEC integrate the MSAG into the front-end service provisioning process and set appropriate attributes on each line at the EO to effectuate routing over the proper trunk group to the proper 9-1-1 routing service.
- Where Intrado has the predominate number of subscribers in a given rate center, Intrado may act as the aggregator of the traffic and deliver the traffic back to the ILEC.
- Intrado will work cooperatively with the OSP and the ILEC to establish call routing and call handoff arrangements.
- Intrado will work with OSPs and ILECs to resolve wire center overlap issues.
- Services implementation depends on TSP and ILEC cooperation to resolve.

### 6. Responsibility Matrix

Table 1 outlines the typical responsibilities of each party for the implementation and ongoing provision of Services. Where both parties have been listed, additional detail on the responsibilities of each party is included in the sections below. Failure of a party to satisfactorily complete a required task could materially impair Intrado's ability to provide Services.

**Table 1: Responsibility Matrix**

<b>Task</b>	<b>Responsibility</b>
<b>Project Implementation</b>	
Project Management	Intrado/Customer
OSP Communications	Intrado/Customer
OSP Integration Architecture	Intrado
Intrado Methods and Procedures	Intrado
A9-1-1 Service System Architecture	Intrado

<b>Task</b>	<b>Responsibility</b>
PSAP Facilities	Customer
PSAP Facility Site Preparation (floor space, power, etc.)	Customer
PSAP Facility Site Survey	Customer
PSAP Configuration/Lists-Routing, Transfer, etc.	Customer/Intrado
Non-Intrado PSAP Equipment	Customer
Training on Services	Intrado
End to End Testing of Services Prior to Production	Intrado/Customer/CPE Vendor
Data Load into SRDB	Intrado/OSP
Develop Plan and Execute Migration Testing	Intrado/Customer
Production Turn-up of Services	Intrado/Customer
<b>Ongoing Responsibilities</b>	
Services Application System Upgrades and Maintenance	Intrado
Services Log storage and Backups	Intrado
Services Metrics	Intrado
Problem Reporting, Triage, and Resolution	Intrado/Customer
Services Network and System Monitoring	Intrado

## 7. User Accounts for Web-based Service Administration Tools

Intrado will assign each Customer user that requires access to any of the web-based Service Administration Tools a unique user ID, password, and a Secure ID token ("User Account"). Examples of Service Administration Tools include CMP and Performance Reporting Metrics.

User Accounts may not be shared. Intrado will work with Customer to determine and configure the appropriate data access profile for each user account. Additional User Accounts or replacement of a misplaced security device is subject to additional Security Device fees. Customer may determine the distribution of these user accounts between Customer's administrative staff and Customer's PSAPs.

# A9-1-1<sup>®</sup> VIPER<sup>®</sup> Direct Service Guide

Version 2020.06.24

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## 1. Introduction

This Service Guide describes Intrado's A9-1-1 VIPER services as provided to direct customers ("Services"). Services provide a NG9-1-1 call handling solution as a managed service. Key service functionality provided includes:

- POWER 911® call handling application
- POWER METRICS® application
- MapFlex 911® application
- All hardware and professional services to install and maintain Services

Optional services available with Services include:

- PowerOps® for wallboard readers
- TXT29-1-1® service

Services provide call handling functionality over a system that includes VIPER, POWER 911 POWER METRICS and MapFlex 911 equipment, paired with specific CPE provided by Intrado, including POWER 911 workstations installed at each Customer PSAP. During the sales process, Intrado will work with Customer to determine the call workflow and other system requirements. Based on this, Intrado will engineer a solution to service those requirements. This solution will specify the quantity and location of equipment required as well as the configuration parameters and document any desired functionality that cannot be provided via Services. Intrado retains ownership and maintenance responsibility for this equipment while Services are in effect. Services are also contingent upon Intrado providing A9-1-1 Routing service and Location Data Management service for the region of Customer.

Intrado and Customer will mutually agree upon the facilities where equipment will be located. Intrado's deployment architecture uses a resource-pooling methodology. Both software and infrastructure achieve a level of isolation via configuration and/or virtualization. As part of Services, Intrado provides, installs, configures, monitors, and maintains all system components. Intrado will work with Customer to determine and implement VIPER and POWER 911 configurations.

## 2. Services Features

For Services, Intrado will provide Customer with the following:

- A9-1-1 VIPER Service
- Project Management
- Installation
- Training

### 2.1. Services Overview

Services leverage VIPER and POWER 911 technology to provide the call handling service.

Services provide:

- NG9-1-1 call handling capability including VIPER
- a T-ESRP as defined by NENA's i3 standards

While Services are based on VIPER and POWER 911 technology, not all capabilities provided via licensed CPE solution and legacy 9-1-1 service provider technologies are included. This Service Guide along with the solution design, detail what is provided with Services.

#### 2.1.1. POWER 911 Application

Services provide POWER 911 operating on Intrado's A9C that provide End Users with on-screen call control of emergency and administrative calls, with features that enhance call handling efficiency and consistency.

Customer will provide the following space for each POWER 911 workstation:

- For the A9C, the appliance dimensions are 3"/7.7 cm (Height) x 8"/20 cm (Width) x 10"/25 cm (Depth) (2U metal enclosure).
- 18" x 10" x 21" on the desktop for each monitor.

Customer will provide power, ground, and environmental controls for the A9C to be installed at each Customer facility as follows:

- HVAC-each End User and supervisor A9C position with two 21" monitors will dissipate a maximum of 1950 BTUs per/hour.
- A minimum of two 15-ampere circuits to provide diverse power for the A9C call taking positions. Each circuit must be wired to an individual 15-ampere circuit breaker. Each circuit must provide two fourplex outlets with individual hot, neutral, and ground wires. One 15-ampere circuit can support up to three POWER 911 workstations. Workstations should be distributed evenly across the circuits.
- Additional circuits may be required for other non-emergency equipment.
- Each position should be prepared with 2 (4 x 120 VAC) outlets as follow:
  - Two power receptacles for monitors
  - One power connector for the PC (NEMA 5 15P)
  - One power receptacle for speakers (for POWER 911 ringing)

#### 2.1.1.1. User Features

POWER 911 has a highly configurable ALI display, repeat ALI, and the ability to exchange pANI with the wireless call-back number based on the wireless TSP and class of service combinations.

POWER 911 also include the following user features:

- Integrated TTY via Baudot with pre-programmable messages, HCO/VCO, and optional buffered mode so that messages are delivered at one time rather than character by character.
- Integrated TXT29-1-1 capability
- An Integrated Call Check Recorder allows calls to be recorded automatically or on-demand. End Users can play back recently completed calls within a configurable time period.
- Integrated Greeting Announcement: A customized greeting announcement can be automatically played when an End User answers calls.
- Intelligent Speed Dialing currently provides up to 1500 programmable speed dials and voice transfers between positions or to a third party.
- An Integrated Phone Book has no imposed limits on the number of contacts with configurable End User read/write access rights.
- Fully searchable Agency List to allow each PSAP to manage and contact thousands of agencies.
- On-the-fly multi-lingual support with language selected via drop down menu functions for the GUI text.
- Message board to support instant messaging between all signed-on POWER 911 users.
- POWER 911 allows profiles to be configured by workstation, End User, or role (e.g. End User) to control features and content for each PSAP.
- The legend of each button on the screen can be changed to match the language of the End User or to identify a button operation in a more familiar way.
- The configurable text strings supports any language that can be represented by Unicode. These text strings are implemented during initial deployment using CCS tool. A Intrado technician must make requested changes using the tool.

#### 2.1.2. POWER 911 Software and Equipment

POWER 911 allows profiles to be configured by workstation, End User, or role (e.g. End User) to control features and content to meet the preference of every PSAP. Requested changes will be accomplished by a Intrado technician.

Intrado will provide the following software and equipment at each PSAP for each POWER 911 A9C position, including the following:

- Intrado will provide, install, and maintain POWER 911 A9C positions complete with keyboard, mouse, and speakers for each End User position.
- POWER 911 modules:
  - Location Module: Displays ANI/ALI
  - Computer Telephony Module: Provides on-screen telephony. The A9C itself is the End User's phone device, with call control operations performed via the A9C mouse and keyboard with the GUI providing visual feedback
  - Contact Module: An integrated phonebook and contact list. Enables speed dials and transfers between positions or to a third party
  - Message Board Module: Enables instant text messaging between all signed on POWER 911 users within the PSAP. The Message Board is an inter-workstation text-based messaging capability. It is unrelated to external "Message Boards"
  - Lists Module: Provides multiple Call Lists and Queries, including active and abandoned calls, instant call queries and historical calls
  - Toolbar: Provides configurable on-click access to certain functions
  - Integrated Call Check Recorder
- Two LCD standard monitors per position-brands as determined by Intrado. Additional monitors, per application, will be supported at Customer request. Touch screen monitors are supported at Customer request.
- A Handset
  - The PSAP may elect to provide headsets for selected positions. Any headset used on the system must be approved by Intrado for compatibility. A current list of approved headsets is available on request. An updated list should be consulted at time of Customer agreement.
  - Each POWER 911 A9C position will be adjusted to the electrical characteristics of a given handset or headset model. As such, in PSAPs where multiple models are used, the PSAP will be responsible for ensuring the handset or headsets are only used at the positions specifically adjusted for those models.
- Intrado will provide, install, and maintain one current model color laser printer at each PSAP. Customer will be responsible for ink, toner, and paper.
- Intrado will install POWER METRICS browser on Customer-provided administrator workstation(s) where required.
- A Intrado firewall is required to enable POWER METRICS report access, Intrado data service access from workstations outside of the VIPER LAN to the PSAP LAN.

#### 2.1.2.1. Installation

Services include installation of A9C workstations at each PSAP with POWER 911. All POWER 911 workstations and associated equipment will be located on the call taking floor in each Customer facility and not in the equipment room.

#### 2.1.3. PSAP Management Gateway, Profile

Customer will not have access to the PSAP Management Gateway provided with Services. For each PSAP, the POWER 911 configuration will be set up as a "square" system, meaning that all positions will be presented with the same profile, including screen layout, agency access, transfer profiles, etc. Intrado will be responsible for configuration changes for Customer once deployed.

#### 2.1.4. Configurable Call Distribution and Integrated ACD Features

Services provide a highly configurable layering of options and features for call distribution within each PSAP and between PSAPs as necessary for backup scenarios.

##### 2.1.4.1. Ring Groups

Services support Ring Groups, where calls are sent to all available A9Cs.

##### 2.1.4.2. Multiple ACD Algorithms

Services support Multiple ACD algorithms:

- Longest Idle: Presents next call to the End User least recently called by this queue
- Feltrado Calls: Presents next call to the End User with feltrado completed calls from this queue
- Round Robin: Calls presented to all End Users in sequence

#### 2.1.4.3. ACD Functionality

The ACD functionality in Services provides multiple features:

- ACD Queue: Allows lines and trunks to be assigned to specific queues. Each End User can be a member of one or more ACD queues. An End User will receive a call from a queue when they are logged on and ready.
- Agent Priority: Allows a priority to be assigned to each End User in a queue.
- Line Priority: Allows priorities to be assigned to each line in a queue.
- Queue Recorded Announcement: A PSAP-recorded announcement can be played at intervals to callers waiting in a queue.
- Queue Wrap-up time: Allows a time interval to be configured to allow End Users to complete tasks from a previous 9-1-1 call before a new call is presented.
- Public Park: Allows an End User to place a call in an 'on hold' state to take other calls in a queue and then return later to the parked call. Other End Users can also retrieve the parked call.
- Forced Connect: This feature can be enabled or disabled. When enabled, End Users that are logged on and ready to accept calls are automatically connected to ACD calls and hear a zip tone as notification that they have been connected to a new call.

#### 2.1.5. POWER METRICS Reporting

POWER METRICS reporting provides emergency response center managers and system administrators with information on the volume of calls, performance of End Users, and PSAP statistics. Intrado's MIS solution is a browser-based application that uses information from the system to generate a wide range of statistical reports.

##### 2.1.5.1. Features

POWER METRICS Features include:

- Generating reports that can be used to evaluate the overall performance of a PSAP or the performance of individual End Users.
- Retrieving critical information such as the time a call was received, how long it took for a call to be answered, questions that were asked by the operator, the answers the caller provided, and the agencies to which a call was transferred.
- Performing detailed query calls and incident-related activities of one or more PSAPs.
- Scheduling reports for automatic generation at specific times and frequencies.
- Saving report settings for future reuse.
- Generating reports in PDF, HTML, and or XML formats, with optional customizable titles, which can then be saved, viewed on screen (via included PDF reader or browser client as appropriate), and/or printed.

##### 2.1.5.2. Metrics, Data, and Reports

Through the POWER METRICS browser-based tool, Customers can access metrics reports on its PSAP activity on a per-PSAP basis, and also aggregated PSAP reports.

Intrado will store POWER METRICS data according to the following schedule:

- Pre-production testing, POWER METRICS data will be stored for a minimum of 60 days.
- Post-production turn up, POWER METRICS data will be stored for three years.

POWER METRICS provides the following reports:

- Call Details Report
- Call Summary Reports (various)
- Call Volume by ACD, by Ring Group, by Range of Answer Time, by Hour

- Top Busiest Hour
- Call Type Volume by Line, by Line Group, by Trunk, by Trunk Group
- Call Volume (%) by Period-by Hour, by Month, by Time Range
- Class of Service
- Average Call duration
- Long Distance Call Summary
- Circuit Utilization
- Top 50 ANI Summary
- ALI RTX Statistics per End User
- Call Routing Statistic per Period
- Call Statistics by End User, by End User Group, by Day of the Week, by ESN, by Week
- Call Time Statistics per End User
- Total Call Statistics per Month
- End User Statistics Summary/Detail
- TEXT Reports

Note: Ad hoc reports are not currently supported

### **2.1.6. MapFlex 911**

MapFlex 911 is a dedicated public safety map that provides automatic display and rapid management of 9-1-1 calls in the PSAP. The primary function of MapFlex 911 is to accurately map incoming 9-1-1 calls and provide End Users with analytical tools and relevant spatial information to enhance their situational awareness. Features and capabilities include:

- Automatic display of all calls and call types and immediate updates of call location when ALI requests are repeated
- Centralized client-server architecture utilizing Esri's ArcGIS for Server. This ensures all End Users are viewing the same, and most up-to-date, local GIS data at all times. Data updates, administration, and integrating with external data sources or third party providers are easy and flexible.
- Modern, intuitive, and uncluttered interface
- When paired with POWER 911 and VIPER, End Users are able to perform enhanced call handling functions from the map. This includes answering and releasing calls and conferencing dispatchers.
- Integrated Pictometry oblique imagery viewer(s) for Customers who have separately purchased imagery from Pictometry
- Tools for searching addresses, managing layers, querying local and national map data, and creating sharable map markups for collaborating across all End Users

## **2.2. Optional Service Offers**

The following are optional add-ons available to Resellers of Services:

### **2.2.1. PowerOps Display**

Intrado will provide and install a PowerOps display at the PSAP. PSAPs who desire to configure VIPER ACD per Section 2.1.4 above must also opt for at least one PowerOps display per PSAP.

PowerOps provides near-real time End User, ring group, and ACD queue status as well as summary status of all queue and ring group information for all 9-1-1 calls in process by the PSAP.

Pricing for PowerOps covers the server, display, support, and maintenance services.

For PSAPs that opt for PowerOps, the onsite training sessions will be expanded in length to include training on PowerOps.

For Ring Groups, PowerOps supports End User-based ring groups only.

The PowerOps option will be more expensive if not purchased and deployed concurrently with Services.

### **2.2.2. TXT29-1-1**

Intrado TXT29-1-1 service enables an End User to receive and respond to an emergency service request using an SMS text message. TXT29-1-1 service provides a messaging gateway, routing services, and a communications interface for emergency service requests sent via SMS text message to 9-1-1.

Intrado will utilize the A9-1-1 Routing network facilities for the delivery of TXT29-1-1 traffic to the PSAP.

TXT29-1-1 service includes the following features:

- Visual alert to End User that an emergency text message has arrived
- Ability to accept, complete, and place in queue any incoming text messages
- Pre-loaded and configurable messages to make responses quick and efficient
- End User may respond to a text message while on a voice call, if they so choose
- Ability to display RI location as an inband message
- Ability to automatically failover to a back-up PSAP if connectivity to the primary PSAP is lost or text equipment at the PSAP fails
- Log retention of text dialogues
- Back-up/Failover
- External Transfer
- Location Update

Further details on this solution are available in the TXT29-1-1 service guide.

## **3. Shared Services**

Terms relating to facility requirements, system testing and migration, and support and escalation procedures are described in the A9-1-1 Shared service guide referenced in Customer's Service Order. These terms will apply to the A9-1-1 services described herein. In addition, the glossary found in the A9-1-1 Shared service guide will define certain capitalized terms used in this Service Guide.

## **4. A9-1-1 VIPER Installation**

Intrado is responsible for installation of A9-1-1 VIPER. Installation includes project management, configuration, and testing of Services.

### **4.1. Point of Contact and Project Management**

#### **4.1.1. Intrado Responsibility**

Intrado will provide a program manager for Customer who will act as the SPOC for the A9-1-1 VIPER planning and deployment phases.

#### **4.1.2. Customer Responsibility**

Customer will designate a project manager as the SPOC for all planning and deployment phase activities for Services.

### **4.2. A9-1-1 VIPER Configuration**

#### **4.2.1. Intrado Responsibility**

Intrado will support comprehensive A9-1-1 VIPER configuration in conjunction with system administrator training and the use of the CCS.

##### **4.2.1.1. CCS**

CCS is designed to enable Customer to customize the POWER 911 system to meet PSAP requirements. The CCS process helps the PSAP to define its business practices and call flows. Once completed, the CCS configuration solution will be uploaded as part of Staging, with one day of administrator training. ACD design session-if used, is conducted at the same time as the CCS training and encompasses one additional day

of administrator training. PowerOps design session, if required, is also conducted at the same time as the CCS training, and encompasses one additional day of administrator training.

The CCS is currently a DVD, which includes POWER 911 Admin and User Guides, ACD configuration information (used for ACD sites), VMware Player, CCS Virtual Machine, and instructions on how to install the VMware player and CCS Virtual Machine. This DVD may be used by Customer on its own PCs to create the configuration for its POWER 911 workstations that can be later used in staging.

Once installed, Intrado can then input the desired configuration in the virtual environment and then export the saved configuration file in a format that can be imported into the production environment.

As an output of CCS, Intrado will configure Services based on each Customer's preference for distributing A9-1-1 voice calls:

- Intrado will configure ACD if Customer requests to distribute 9-1-1 voice calls based on the longest idle time, first-intrado completed calls, or round-robin. Customers who desire to configure ACD must purchase the PowerOps Display as an Optional Service (see Section 2.2.1 above).
- Alternately, Intrado will configure Ring Groups if Customer requests to distribute 9-1-1 voice calls to all available End Users.
- Each Ring Group or an ACD queue can be configured with an alternate destination that is either another ring group or an ACD queue (rollover tier) for various situations. An End User can be a member of one or more ACD queues; a workstation can be a member of one or more Ring Groups.

#### **4.2.2. Customer Responsibility**

Customer will provide Intrado with a complete list of configurations for each PSAP. These PSAP configurations lists include:

- POWER 911 profile configurations, including screen layout, agency access, transfer profiles, etc.
- Current ALI and NRF response formats

Customer will provide Intrado with the call distribution configuration requested for each PSAP. These call distribution configuration lists include:

- Ring Group or ACD preferences
- Rollover tiers

### **4.3. Project Survey**

Intrado will conduct a project survey used to collect Customer site data in accordance with two principles: 1) collecting data from site elements (both physical and operational) that are in place at the time of the survey and 2) new elements that will be used within the scope of the project. Based on the output of the project survey and analysis report, Intrado will work with Customer to determine the appropriate location for the Intrado-provided equipment.

Intrado will conduct a project survey at each PSAP. During the project visit, the on-site technician will assess the PSAP compliance with Services facility requirements and will consult with Customer on alternatives and any necessary site changes. Following the project survey, Intrado will provide Customer with a site requirements survey report, which specifies any site remediation requirements.

### **4.4. Connectivity**

Intrado will provide, install, and maintain new LAN connectivity within each PSAP for interconnectivity between the POWER 911 workstations for delivery of the A9-1-1 Routing solution. Interconnectivity between the Intrado-provided LAN and Customer's existing LAN and/or the public internet is not generally supported and requires additional design approval.

Intrado will provide and install all cabling to interconnect between the POWER 911 workstation and equipment room components.

Intrado will engineer Services to interconnect with auxiliary equipment, such as CAD and CDR serial ports. The CAD and CDR serial ports will typically be located on a Intrado provided workstation to be located at

the PSAP, typically in the backroom. The CAD interface is the industry standard RS232C serial interface specification and follows NENA Standard NENA 04-001 section 3.4.

#### **4.4.1. Interconnectivity with Third Party Vendor Systems**

##### **4.4.1.1. Intrado Responsibility**

When installation of third party vendor systems requires coordination with Intrado technicians, Intrado will make all reasonable efforts to work with Customer to schedule a mutually agreeable time to complete the work. Intrado will not provide, install, maintain, or support cabling to connect any components provided by third party vendors.

Interfaces may include:

- The CAD and CDR serial ports will be located on a Intrado provided workstation to be located at the PSAP, typically in the backroom.
- Standard headset sharing analog interface at each work station
- Standard analog recording interface at each work station

##### **4.4.1.2. Customer Responsibility**

During the installation of the Intrado-provided PSAP equipment, Customer will make all reasonable effort to have onsite during the installation an authorized third party vendor technician whose equipment will interconnect with the Intrado equipment.

If Customer requires connectivity to administrative lines via a third party PBX, Customer will ensure that a PBX technician is available to work with Intrado to make sure that all the phones work together and configure the PBX to interface with the Intrado-provided equipment.

Customer will be responsible for working with Customer CAD vendor to implement any programming changes required in the CAD system.

## **5. Production Turn-Up**

### **5.1. Intrado Responsibility**

Intrado will work Customer to mutually agree on a Testing and Production Migration Plan. The Testing and Production Migration plan will cover pre-production end to end testing and production testing with Customer, and deployment. During pre-production testing, technical support will be provided during Intrado Normal Business Hours. System testing and the production migration for each PSAP will be implemented according to the detailed project plan.

### **5.2. Customer Responsibility**

Customer will work with Intrado to execute testing of the A9-1-1 VIPER call handling system in accordance with the detailed project plan.

Customer will provide Intrado with written notice of Acceptance of Services upon the successful delivery for 30 consecutive days of live Services to the PSAPs, with such period beginning as of the date of the production turn-up. During the 30 day period, Customer will provide Intrado with written notice of any defects. Intrado will provide Customer with a plan to address such defects and will provide a written notice when such defects have been addressed. If Customer does not provide Intrado with a written notice of defects within 30 days after the production turn-up, then Services will be deemed accepted.

## **6. Monitoring, Maintenance, and Support**

### **6.1. Customer Responsibility**

Customer will provide access to a local email server to delivery Sentry alarms via SMTP.

For on-site support services, Customer will:

- Brief on-site Intrado technician on issue(s) and actions taken.
- Allow Intrado both on-site and remote access to the System. Remote access is made utilizing a secure VPN to each site.
- Validate issue resolution prior to close of the case.
- Cooperate with Intrado and perform all acts that are reasonable or necessary to enable Intrado to provide the on-site support services. These include maintaining a suitable environment (heat, light, and power) and providing the technician with full, free, and safe access to the System. All sites must be accessible by standard service vehicles.

## 6.2. Intrado Responsibility

Intrado will provide application level monitoring for Intrado provided network elements. Intrado currently utilizes HP Open View and Sentry Monitoring products, which monitor the A9-1-1 VIPER systems including network elements, backroom equipment, and workstations.

Intrado will provide remote technical support (help desk) from Intrado's centralized Support Center for the Intrado System. Help desk support is available 24/7 through both a toll free hotline and a secure customer Internet portal. All service inquiries are tracked by a CRM trouble ticket system.

Intrado will perform maintenance and software/equipment upgrades for Services.

Intrado will provide on-site support services as required by Intrado certified technicians in troubleshooting and restoration of Services at Customer's location.

### 6.2.1. Severity Levels

Intrado will address all service issues, whether identified by Intrado or by Customer, according to the Intrado-confirmed Severity Level. Severity Levels determine the appropriate contact procedure and the actions that will be taken by Intrado for initial notification time, status update time, and incident management.

Following are service disruption definitions and procedures for each Severity Level and the response time goals for each Severity Level:

#### 6.2.1.1. Severity Level 1: Down

A critical or significant function is not available. Hardware, operating system, network connectivity, or application is inoperable or severely degraded resulting in an out-of-service condition. No work around exists on either server or machine that constitutes part of a mated high availability pair of servers or applications. Power Outage. Security breach has been identified.

**Resolution Procedure:** Intrado will apply immediate and sustained effort until a resolution is in place. If a resolution cannot be readily identified, Intrado will initiate internal escalation procedures to assure resources are appropriately assigned for problem resolution efforts. Incident notifications will be sent to designated email groups and individuals on an hourly basis.

#### 6.2.1.2. Severity Level 2: One-Sided

A non-critical software component does not function and there is no workaround, or the workaround causes hardship to Customer or service. A system, network component, or application is one-sided. A system, network component, or application is in service but at high-risk of going out of service. A work-around may exist, but is not a satisfactory solution for an extended period of time.

**Resolution Procedure:** Intrado will apply immediate and sustained effort until a resolution is in place. If a resolution cannot be readily identified, Intrado will initiate internal escalation procedures to assure resources are appropriately assigned for problem resolution efforts. Incident notifications will be sent to designated email groups and individuals every two hours.

#### 6.2.1.3. Severity Level 3: Non-critical System Failure

Hardware, operating system network connectivity, or application is not performing to specification, but is not resulting in system or application being out of service or one-sided. There is little or no impact to

Customer or the operation. Security breach has been completely contained and availability restored. Final security assessment needs to be completed.

**Resolution Procedure:** Intrado will correct the service disruption or provide a procedure for the PSAP to bypass or work around such disruption in order to continue operations if possible. If a bypass procedure is utilized, Intrado will provide PSAP with an action plan for the development of the final resolution, and Intrado will continue resolution activity until full service is restored to PSAP. Incident notifications will be sent to designated email groups and individuals every three hours.

6.2.1.4. **Severity Level 4: Minor**

Intrado systems supporting Services are impaired and some functions are not operating, but those functions are not mandatory or critical to 9-1-1 delivery or are considered minor or cosmetic and have only a minor impact on usability.

**Resolution Procedure:** Intrado will address via standard maintenance procedures during Intrado Normal Business Hours. If a software fix is required, Intrado will provide a fix during the next scheduled software release. Incident notifications will be sent to designated email groups and individuals every 4 hours.

6.2.1.5. **Onsite Response Time Goals**

The on-site response time goals are stated in Table 1. On-site response times will apply if Intrado determines it is necessary to go on-site to repair a problem with Services.

**Table 1: Onsite Response Time Goals**

Severity Level	On-Site Response Time Goal
1	4 hours
2	12 hours

Problems which are not resolved within predefined time limits are automatically escalated to management within Sales, Product Management, and Engineering for action.

**6.2.2. Defective Equipment**

Intrado will replace defective equipment while Services are in effect.

**6.2.3. System Upgrades**

Intrado will complete and install regularly scheduled software release upgrades on the A9-1-1 VIPER system. Intrado provides ongoing maintenance release upgrades at no additional charge; where new features are requested by Customer additional charges may apply.

**7. PSAP Training**

**7.1. Intrado Responsibility**

Intrado will provide on-site training for an End Users and administrators.

**7.1.1. End Users**

Intrado will provide either End User Training or Train-the-Trainer training for each unique Customer configuration, as follows:

- Train-the-Trainer: one on-site training session for up to eight End User POWER 911 End Users with a maximum of two people per workstation. This training is expected to last for two full days (six training hours per day).
- End User Training: in lieu of train the trainer training, Intrado can provide all End User training. Training is provided to a maximum of eight End User End Users, per training session, with a maximum of two training sessions per day. One workstation for each two students is required. The

baseline offer accommodates up to three days of End User training. Additional optional training days may be purchased to accommodate all End User.

**7.1.2. PSAP Administrators**

Intrado will provide one on-site training session for PSAP administrators. This training is expected to last for two full days (six training hours per day). Customer may determine the number and type of employees attending the Intrado on-site training as long as Customer provides an adequate training facility and workstations/computers for number of attendees. One additional day of administrator training is provided to support the cutover. In addition to Services training topics, this training will focus on:

- POWER 911
- POWER METRICS

**7.2. Customer Responsibility**

Customer will provide facilities for each on-site training session. On-site training will be scheduled after the POWER 911 equipment has been installed and configured at the designated training location.

Customer will be responsible for identifying the training attendees and ensuring they attend the Intrado-provided training. Customer will provide Intrado with a complete list of attendees for each Intrado training session and their positions a minimum of five business days prior to the start date for each training session. Each PSAP will be responsible for training additional personnel within their organizations, as necessary, unless optional training services are ordered by Customer from Intrado. Optional training services may include End User or administrator training and is priced per day for a minimum of one class per day. Optional training may cover training on additional products purchased such as PowerOps, or training support after train the trainer training is complete.

Training class names and numbers include:

- 960780-Administrator Training
- 960800-End User Training

**8. Responsibility Matrix**

Table 2 outlines the typical responsibilities of each party for the implementation and ongoing provision of Services. Where both parties have been listed, additional detail on the responsibilities of each party is included in the sections below. Failure of a party to satisfactorily complete a required task could materially impair Intrado’s ability to provide Services.

**Table 2: Responsibility Matrix**

<b>Task</b>	<b>Responsibility</b>
<b>Project Implementation</b>	
Project Management	Intrado
Project Plan for A9-1-1 Solution	Intrado
Services System Architecture	Intrado
Services Network Architecture	Intrado
Customer Facilities	Customer
Customer Facility Site Preparation when hosted at Intrado’s Data Centers (floor space, power, etc.)	Customer
Customer Facility Project Survey for Intrado-provided PSAP-based Equipment	Intrado
Project Survey Analysis and Report	Intrado

<b>Task</b>	<b>Responsibility</b>
Site Readiness as addressed in Project Survey Analysis and Report	Customer
PSAP Data Collection, Configurations/Lists-Star Codes, Transfer, Contact List, GIS Data etc.	Intrado/Customer
Intrado-provided PSAP Equipment: Provide, Stage, Install at Customer Facility	Intrado
Services Training	Intrado
Pre-production and End to End Testing	Intrado/Customer
Develop Migration plan and execute Migration Testing	Intrado/Customer
Production Turn-up	Intrado/Customer
<b>Ongoing Responsibilities</b>	
POWER METRICS Reporting	Intrado
System Monitoring	Intrado
System Maintenance	Intrado
System Upgrades	Intrado
Log storage and backups	Intrado
Problem Reporting	Intrado/Customer
Problem Triage and Resolution	Intrado/Customer
Single Point of Contact for Reseller & TSP Data Issues	Intrado

## Appendix A: Definition of Terms

<b>Term</b>	<b>Definition</b>
A9C	Intrado's purpose-built call handling workstation appliance
ACD	Automatic Call Distribution
ALI	Automatic Location Identification
ANI	Automatic Number Identification
CCS	Customer Configuration System
CPE	Call Handling/Customer Premise Equipment
CRM	Customer Relationship Management
Customer	PSAP or public safety agency that purchases Services
End User	PSAP caller taker/dispatcher or credential user of Services
ESN	Emergency Service Number
Firewall	Device used to filter packets and sessions between different networks. Most firewalls are zone-based, and map interfaces to either "trust" or "untrust" zones for the purpose of defining policy
GUI	Graphical User Interface
i3	NENA standard for NG9-1-1 services
IP	Internet Protocol
HCO	Hearing Carry Over
HTML	Hypertext Markup Language
HVAC	Heating Ventilation and Air Conditioning
LAN	Local Area Network
LCD	Liquid Crystal Display
LVR	Logging Voice Recorder
NEMA	National Electrical Manufacturers Association
NENA	National Emergency Number Association
NG9-1-1	Next Generation 9-1-1. NENA i3 standards for IP based 9-1-1 services
NOC	Network Operations Center
NRF	No Record Found
pANI	Pseudo-Automatic Number Identification
PDF	Portable Document Format
PSAP	Public Safety Answering Point
QoS	Quality of Service
Reseller	Intrado partner offering Services to Customers
RTX	Retransmit
SPOC	Single Point of Contact

<b>Term</b>	<b>Definition</b>
T-ESRP	Terminating Emergency Service Routing Proxy. NENA i3 term describing the termination point to a NG9-1-1 PSAP
TSP	Telephony Service Provider
TTY	TeleTypewriter-text telephone device or a telecommunications device for the deaf
VCO	Voice Carry Over
VIPER	Voice Over IP Emergency Response
WAN	Wide Area Network
XML	eXtensible Markup Language



# Shared Service Guide

Version 2019.09.30

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## 1. Introduction

The terms of this Service Guide (including the Glossary terms in Section 6 below) apply to certain service(s) described in the Service Order in which this Service Guide is referenced (“Services”).

## 2. System Testing and Production Migration

Intrado will work with Customer to finalize and mutually agree on Testing and Production Migration Plans for each of Services migrating to Intrado. The Testing and Production Migration Plans will define:

- Tests to be conducted prior to and as part of migration to Services
- System testing and the production migration for each Customer PSAP

If requested by Intrado, Customer will provide personnel at each of Customer’s PSAPs to assist Intrado in the execution of the migration testing to:

- Answer the test voice, text, and other types of calls as appropriate.
- Request and display enhanced data on the PSAP’s CPE
- Join conference bridges
- Provide test call screen prints and/or voice recordings/text transcripts to Intrado on request (unless Customer is prohibited by law to do so).
- Provide test call feedback on:
  - Voice quality, functionality, and other information
  - Text call interactions including predefined standard messages
  - Enhanced data display

## 3. Monitoring, Maintenance, and Operational Technical Support

The sub-sections below describe Intrado’s monitoring, maintenance, and operational technical support for the Intrado systems supporting Services.

### 3.1. Location Data Management

Intrado will provide and maintain redundant systems when in the 9-1-1 voice/data delivery path.

Maintenance and upgrade activities will be conducted on one of the redundant systems at a time to minimize any impact to Services.

Intrado monitors each Intrado system component in the 9-1-1 voice or data delivery path on a 24x7x365 basis.

Intrado will provide application level monitoring for Intrado-provided network connectivity, between Intrado’s systems and Customer’s PSAPs. Intrado is responsible for detecting application and network failures in these systems. Intrado notification procedures are followed for any service degrading network or hardware failure.

Intrado’s diverse and redundant network design provides the capability to automatically fail over 9-1-1 voice or data path traffic if a facility failure occurs, where redundant connectivity is available.

Intrado does not monitor routers, multiplexers, or any other network components not under Intrado’s control. Where Intrado is not considered the customer of record for the network data communications links, the customer of record must provide Intrado with a means to submit trouble tickets for network problems. The customer of record must work with the network provider and Intrado to resolve network issues in a timely manner.

Intrado will provide ongoing maintenance and support for all Intrado-provided equipment at the PSAP. Maintenance and support for all systems, including Intrado-provided equipment, includes periodic software upgrades, OS upgrades, and other system maintenance as necessary for Services.

Intrado will assist Customer and Customer's PSAPs in solving problems, misroutes, translation errors, and data retrieval problems or maintenance issues.

Intrado will provide field support personnel to correct system issues and replace equipment at Customer's PSAPs when determined necessary by Intrado.

### 3.2. Non 9-1-1 Call-Path Services Systems

Intrado will also provide, maintain, and monitor 24x7x365 all Intrado systems that are not in the 9-1-1 voice or data path, including:

- Intrado data management systems
- Provisioning systems (e.g., 9-1-1 NET)
- Metrics reporting tools (e.g., Clear View)
- Customer Premise Equipment ("CPE") provided by Intrado (but not including peripheral equipment such as monitors, keyboards, printers, etc.)

Intrado will provide personnel to address reported issues and system outages according to the availability of each system.

### 3.3. Daily Operational Support and Escalation Procedures

Intrado will provide daily operational support to Customer during Intrado Normal Business Hours. Intrado will provide appropriate contact information to Customer. In some circumstances, Intrado is dependent on Customer or Customer's PSAP to provide timely and accurate information to resolve problems.

### 3.4. System Audit Records

Intrado will store system audit logs for the Intrado systems involved in 9-1-1 call and data processing associated with its obligations outlined within the individual Services Guides. For example:

- Location Data Management Services:
  - Each transaction that occurs to modify a subscriber TN, error, or MSAG record in Intrado's data management system
  - Location data returned in response to each PSAP query, as well as the dynamic location updates received from each Wireless, VoIP, and Telematics MPC/GMLC/VPC via the E2 interface
- A9-1-1 Routing Services: A9-1-1 Routing call detail records
- A9-1-1 TXT29-1-1<sup>®</sup> Services: Text Transcripts
- A9-1-1 Enhanced Data Services: Data records associated with an emergency event
- A9-1-1 VIPER<sup>®</sup> Services: Power 911<sup>®</sup> activity as recorded in the VIPER MIS

Intrado stores system audit logs for a minimum of one year. Intrado can provide pricing for data recovery beyond one year, on request.

For other system audit records, Intrado will provide transaction history reports to Customer on request. Requests for information from the previous 30 days are generally available within ten calendar days. Requests for information older than 30 days takes a minimum of three weeks, and are subject to additional fees.

### 3.5. Subpoena Compliance

Intrado will reasonably comply with requests made by Customer for specific subpoena-related audit record data. Intrado can accommodate most requests within five business days, provided that the request contains the full TN (Wireline 9-1-1 call) or CBN (Wireless/Text/VoIP/Telematics call), PSAP name, and a specific date and time. Requests for data that are vague or require extensive research will not be processed until additional detail is provided by Customer.

Requests that require extensive research will be subject to additional charge.

## 4. Services Disruption

The Intrado Public Safety Support Center (“PSSC”), available 24x7x365, will be Customer’s point of contact for any urgent technical or operational support issues on all Services provided to Customer’s PSAPs. Intrado will work with Customer to triage all Intrado systems to determine the appropriate resolution.

### 4.1. Operations Support Plan and Escalation Procedures

Intrado will provide Operations Support and Escalation Procedures to Customer. Details include notification procedures, documentation to be provided, problem escalation procedures and contacts, and general Intrado PSSC support provisions. Intrado will use best practices to structure and maintain these procedures.

### 4.2. Incident Management Administration

When a PSAP-affecting issue is identified which significantly impacts Services delivery, Intrado may declare an incident and engage the Intrado incident administration team. This team uses Intrado ISO processes for escalation, notification, and reporting. The Intrado incident administration team will coordinate communications, monitoring, and resolution of the issue per a strict incident command procedure. The Intrado incident administration team will also document appropriate items, which may include root cause analysis, PSAP impacts, countermeasures, and resolution. The Intrado incident administration team has 24x7x365 on-call availability and has the appropriate tools to escalate problems to the Intrado technical teams and associated vendors.

### 4.3. Software Release Upgrades

Intrado will complete and install regularly scheduled software release upgrades on the Intrado systems as appropriate.

Intrado maintains and follows documented processes for all software development and release upgrades in accordance with its ISO certification. Intrado will thoroughly test software release upgrades and Intrado initiated engineering changes prior to installation on Services systems.

Customer should plan for one to two major releases each year, with additional patch releases if needed to address Severity 1 or Severity 2 issues. Intrado will provide Customer advance notification of all scheduled release upgrades per the guidelines within this Service Guide.

### 4.4. Scheduled Maintenance and Upgrades

Intrado will schedule planned events for Services system maintenance or upgrades that may impact Customer’s PSAPs. The Intrado Program Manager will send a notification to Customer for each planned event a minimum of 24 hours in advance of the scheduled start time.

Intrado may also have a periodic need to perform proactive system maintenance to prevent an imminent or likely system failure. The risk posed by the system issue may not allow Intrado to provide Customer with a 24 hour notice for this type of event, called emergent events.

Intrado will fully manage and complete scheduled maintenance and upgrades with a trained event management team, facilitating the change implementation, monitoring, and communication through the length of the event.

### 4.5. Severity Levels

Intrado will address all Services issues, whether identified by Intrado or by Customer, according to the Intrado-confirmed Severity Level. Severity Levels determine the appropriate contact procedure and the actions that will be taken by Intrado for initial notification time, status update time, and incident management.

Following are service disruption definitions and procedures for each Severity Level and the response time goals for each Severity Level:

#### 4.5.1. Severity Level 1

Systems supporting Services are completely inoperative or severely impacted where critical network or data communication problems on the Intrado system prevent Intrado from routing or delivering data for 9-1-1 voice calls, or prevent Customer from handling such 9-1-1 calls through the Intrado-provided PSAP equipment.

##### Examples:

- PSAP is not receiving calls, audio is only one-way, a failure of the A9-1-1 VIPER system resulting in a loss of 50% or greater of call-taker positions or 50% or greater of call processing capacity.
- Critical network or data communication problems on an Intrado system that prevents Intrado from returning ALI bids, and/or network hardware, circuit, or failure of Intrado's link to ALI.

Intrado will apply immediate and sustained effort until a resolution is in place. If a resolution cannot be readily identified, Intrado will initiate internal escalation procedures to assure resources are appropriately assigned for problem resolution efforts.

**Resolution Procedure:** Intrado will correct the service disruption or provide a procedure for PSAP to bypass or work around such disruption in order to continue operations if possible. If a bypass procedure is utilized, Intrado will provide PSAP with an action plan for the development of the final resolution, and Intrado will continue resolution activity until full service is restored to PSAP.

#### 4.5.2. Severity Level 2

Systems supporting Services are impaired, where major functions are operative but functioning at limited capacity or critical elements are no longer redundant.

##### Examples:

- Reduced incoming trunk capacity, intermittent or sustained non-delivery of voice or ANI, sustained line noise or interference.
- Data management system failures that prohibit the processing of service order files within the contractually defined response times; system response time problems; single sided ALI node.
- A failure of the A9-1-1 VIPER system resulting in a loss of less than 50% of call processing capacity and having the potential to severely impact PSAP operations.

Intrado will apply sustained effort until a resolution is in place. If a resolution cannot be readily identified, Intrado will initiate internal escalation procedures to assure resources are appropriately assigned for problem resolution efforts.

**Resolution Procedure:** Intrado will correct the service disruption or provide a procedure for the PSAP to bypass or work around such disruption in order to continue operations if possible. If a bypass procedure is utilized, Intrado will provide PSAP with an action plan for the development of the final resolution, and Intrado will continue resolution activity until full service is restored to PSAP.

#### 4.5.3. Severity Level 3

Systems supporting Services are impaired and some functions are not operating, but those functions are not mandatory or critical to 9-1-1 call delivery.

##### Examples:

- Intermittent poor voice quality or PSAP Gateway Manager port loss.
- ALI data communications are reaching PSAP but all fields are not in correct format.
- A9-1-1 VIPER faults that do not affect the operation of the product/system, however are visible to the user.
- A9-1-1 VIPER faults resulting in minor functions or features being inoperable, unsupported, or unreliable. A9-1-1 VIPER faults involving an agreed on workaround.

Intrado will address via standard maintenance procedures during Intrado Normal Business Hours. If a software fix is required, Intrado will provide a fix during the next scheduled software release.

#### 4.5.4. Severity Level 4

Systems supporting Services are impaired and some functions are not operating, but the impairments are considered minor or cosmetic and have only a minor impact on usability.

##### Examples:

- Metrics report issues, documentation issues, system anomalies that occur only once.
- A9-1-1 VIPER faults resulting in minor functions, features being unsupported, or unreliable in ways Customer does not notice.

Intrado will address via standard maintenance procedures during Intrado Normal Business Hours. If a software fix is required, Intrado will provide a fix during the next scheduled software release.

#### 4.5.5. On Site Response Time Goals:

The on-site response time goals are stated in Table 1. On-site response times will apply if Intrado determines it is necessary to go on-site to repair a problem with Services.

**Table 1: On Site Response Time Goal**

Severity Level	On Site Response Time Goal
1	Four hours
2	Four hours
3	Next Business Day
4	Not applicable

## 5. Facility Requirements for Services

### 5.1. Requirements

Intrado may be required to place certain equipment at a PSAP for Intrado Services. Customer will allow Intrado to install and maintain equipment at each PSAP location that enables the PSAP to connect to Intrado's Services.

For Intrado to install and maintain necessary equipment at Customer PSAP locations, Intrado requires Customer to provide the following:

- Ability for Intrado personnel or authorized agents to freely access all appropriate areas within each of Customer's PSAP facilities
- Parking and building access to move tools and equipment in and out of the facilities
- Secured storage for Intrado-supplied equipment shipped to the PSAP in preparation for installation
- Trash and/or recycling removal as needed, including disposal of system packing materials
- Safe, locked, and limited access to equipment room, including adequate security to prevent theft of computer equipment, tools, test sets, and employees' personal effects
- The necessary consent from the landlord, the building owner, the mortgager, and/or any other third parties having an interest in the installation site to install the equipment and to assist Intrado in obtaining any other necessary approvals and permits for same
- Working space, access to computers and other technology, telecommunications equipment, and any other services and materials that may be reasonably necessary for Intrado's performance of Services at each of Customer's PSAPs
- 24x7x365 access for problem isolation

Customer will ensure that each PSAP equipment room where the Intrado-provided communications equipment rack is located meets the following requirements:

- 24"x 87" of floor space for Intrado-provided cabinet or rack"
  - There is an additional charge for Intrado provided cabinets.

- Floor space within 20 feet of the main telecommunications demarcation point
- 24" of space in front and behind the rack
- 36" between the end of the racks and the wall
- The floor must be capable of supporting 104 pounds per square foot
- Dry, clean, and well ventilated
- Well lit, easily accessible and free from excess vibrations
- The equipment rack should be located in an area that does not receive consistent building traffic

Customer will provide power, ground, and environmental controls for the Intrado PSAP equipment to be installed in the equipment room at each of Customer's PSAPs as follows:

- Two dedicated 120volt /20 AMP power feeds are required with A & B feed (separate power source) and receptacle plug type NEMA L5 20P twist lock
- Any metallic component that is part of the PSAP infrastructure (such as equipment, racks, ladder racks, enclosures, cable trays, etc.) must be bonded to the grounding system.
- The facility will have adequate HVAC controls, monitoring, and redundancy in order to maintain:
  - Cooling for maximum heat output under full load is 4,000 BTU/hour
  - Data Center HVAC systems must maintain a constant dry bulb temperature between 68 and 77 degrees Fahrenheit
  - Relative humidity between 40% and 55%
- Surge/Lightning Protection

## 5.2. Ownership

Intrado will retain ownership of all Intrado-provided equipment; Customer is responsible for damage to such equipment caused by Customer, reasonable wear and tear excepted. Intrado may, at its discretion, remove, replace, or upgrade Customer-provided equipment. The Intrado-provided equipment is privately managed and closed to all third-party software applications (any software not provided by Intrado) and internetworking. Intrado will provide insurance for all such equipment.

## 6. Glossary

These definitions are not necessarily the definitions used by the Federal Communication Commission ("FCC") or any other governmental, industry, or private organization or entity. Certain definitions may not appear in a Service Guide, but are included in the definitions for consistency across Intrado products.

**9-1-1 NET®** is a web application program that gives public safety agencies and TSPs the ability to browse specific data in the 9-1-1 database and communicate with Intrado on maintaining the accuracy of the 9-1-1 data.

**A9-1-1 Customer** means a municipality, state, or local governmental unit, or an authorized agent of one or more of these units to whom the public safety regional authority has lawfully delegated authority. The A9-1-1 Customer must be legally authorized to subscribe to the service and have public safety responsibility by law to respond to emergency calls from the public within Intrado's service areas where A9-1-1 service and/or PS/ALI service are provided.

**Additional Data Repository ("ADR")** is included in the i3 vision. The ADR contains information such as Carrier Name, Class of Service, etc.

**Any Time Interrogation ("ATI")** is a location service protocol for wireless networks to send a location request query.

**Automatic Location Identification ("ALI")** means the automatic display at the PSAP of the caller's TN and the address/location of the telephone. Additional telephones with the same number as the calling party's (secondary locations, off premises, etc.) will be identified with the address of the TN at the main location.

**ALI Record** means a database record, which includes the name, address or address equivalent, and the TN of a caller.

**Alternate Routing (“AR”)** means a method by which 9-1-1 calls are routed to a designated alternate location if all A9-1-1 Routing voice paths to the primary PSAP are busy, or the primary PSAP is closed for a period of time.

**Automatic Number Identification (“ANI”)** means the TN of the telephone or other device from which an Emergency Call is placed that is forwarded to Customer’s CPE for display.

**Border Control Function (“BCF”)** means an ingress gateway that will allow originating networks to natively deliver calls to the Intrado ESInet. It also allows communication between external ESInets and the Intrado ESInet.

**Centralized Automatic Message Accounting (“CAMA”)** means Trunks that were originally developed for billing purposes to deliver the calling party number. These trunks were modified so that wireline companies can deliver ANI for E9-1-1 calls. These trunks are located between the end office, MSC, VoIP gateway, and the tandem SR. CAMA trunks are also utilized almost exclusively between the SR and the PSAP.

**Customer E9-1-1 Service Area** means the geographic area in which Customer PSAPs will respond to all 9-1-1 calls and dispatch appropriate emergency assistance.

**Customer short code or telephone number** means a 5 or 6-digit short code or a ten-digit telephone number provisioned through a SMS aggregator for the routing of non-emergency text messages via Intrado’s messaging gateway system.

**Database Reconciliation** means a comparison between the TSP source records and Intrado’s database management system.

**Data Integrity Unit (“DIU”)** means Intrado’s team of data analysts responsible for the integrity of live E9-1-1 data.

**Default Routing (“DR”)** means a feature activated when an incoming 9-1-1 call cannot be selectively routed due to an ANI failure, garbled digits, or other causes. Such incoming calls are routed from the A9-1-1 Routing network to a default PSAP designated by Customer.

**E9-1-1 Database Provider** means an agency responsible for maintaining and supporting the ALI database and associated infrastructure.

**Emergency Call Relay Center (“ECRC”)** means Intrado’s inbound call center, staffed 24 hours per day, 7 days per week, and 365 days per year for Emergency Calls in support of Customer PSAPs. For purposes of this Service Guide and Services provided hereunder, “Emergency Call Relay Center” and “ECRC” will include a third party contracted by Intrado to perform call center services.

**Emergency Call Routing Function (“ECRF”)** is used to determine call routing to the “next hop.” The next hop may be another ESInet or the PSAP. An ECRF has ability to receive the geodetic or civic location information (PIDF-LO) via the LoST protocol and determine where the call is to be routed. An ECRF can also define specific GIS layers (Police, Fire, and EMS) that enable ECRF to respond to a PSAP that supports a terminating ESRP function for queries to determine Police, Fire, and EMS based upon the location.

**Emergency Services IP Networks (“ESInet”)** is a managed IP network that serves a set of areas within a defined set of polygons that incorporates i3 functions for call routing.

**Emergency Services Messaging Interface (“EMSI”)** means an ATIS/ESIF recommended standard delivery of E9-1-1 data to a CESE, including ALI and supplemental data.

**Emergency Service Number (“ESN”)** means the numbers used to identify primary and secondary PSAP locations as well as unique combinations of police, fire, ambulance, or any other appropriate agencies responsible for providing emergency service in the Customer E9-1-1 Service Area. ESNs are programmed into the ALI data management system and are assigned by Customer to facilitate the routing and transfer features.

**Emergency Service Routing Digit (“ESRD”)** means an identification of call origination. It is a ten-digit number used to support the routing of wireless 9-1-1 calls through the 9-1-1 network. The ESRD is also utilized at the PSAP for static ALI record retrieval for CAS or hybrid-CAS solutions.

**Emergency Services Routing Proxy (“ESRP”)** is a routing proxy function that is used for routing emergency calls. It provides the ability to query ECRF to determine PSAP routing information, or to determine the next hop that the call needs to route to that will ultimately get the call to the appropriate PSAP. Within an ESRP there exists the Policy Routing Function (“PRF”), which contains the rules and logic for exception routing (e.g., Time of Day).

**Emergency Text Gateway (“ETG”)** is the Intrado server which routes and sends text messages to the PSAP.

**Enhanced 9-1-1 (“E9-1-1”)** means an emergency telephone system, which includes network switching, database, and CPE elements capable of providing Selective Routing, Selective Transfer, Fixed Transfer, ANI, and ALI information.

**Fixed Transfer** means a feature, which enables a PSAP attendant to transfer incoming 9-1-1 calls to pre-defined destinations.

**HTTP Enabled Location Delivery (“HELD”)** may be used in two different contexts: HELD using identity extensions and HELD Dereference. HELD using identity extensions is an HTTP protocol used by the user equipment to query for its location using an identity such as its IP address or TN. HELD Dereference is an HTTP protocol used by the LNG and ESRP function to query the LIS for the location information of a specific user.

**Intelligent Emergency Network (“IEN”)** means a fully managed solution offering emergency call delivery and management services for both voice and data.

**Internet Protocol (“IP”)** is the principal communications protocol used for relaying network packets using the IP Suite.

**Inter System Position Request (“ISPOSREQ”)** is a location service protocol for wireless networks to send a location request query.

**Legacy Network Gateway (“LNG”)** function supports the ability to convert emergency calls originating in the legacy wireline, wireless, or VoIP networks (i.e., CAMA and SS7 calls) to SIP with PIDF-LO. LNG functional elements: (i) Protocol Interwork Function (“PIF”): converts the TDM and analog signaling (SS7, CAMA) to SIP; (ii) Location Interwork Function (“LIF”): determines the location of the call by querying an external location server/database LIS; (iii) NG9-1-1 Interwork Function (“NIF”): uses this location information to query the ECRF to determine to which ESRP to route the call. The resulting SIP Invite message to the ESRP also supports PIDF-LO containing the LbyV or LbyR.

**Local Exchange Carrier (“LEC”)** means a telecommunications carrier that provides local exchange telecommunications services; also known as Incumbent LEC (“ILEC”), Competitive LEC (“CLEC”), Local Service Provider, and Local Dial Tone Provider.

**Local Number Portability (“LNP”)** means a circuit-switched network that allows a Subscriber to change service provider, location, and/or service type without having to change their TN. LNP offers the customer the option to take their current TN to a new carrier. In this case the company that owns that TN is not the same company that owns the prefix.

**Location Information Server (“LIS”)** is a database that contains location information about a specific user. The key into this database may be the IP address or TN using HELD with identities or a Location Universal Reference Identifier (“URI”) using HELD Dereference.

**Location-to-Service Translation Protocol (“LoST”)** is a protocol used to map geographic locations to routing addresses (e.g., PSAPs) based on GIS data that is owned and controlled by the PSAP or 9-1-1 authority and provisioned in an ECRF.

**Manual Transfer** means a feature that enables the PSAP attendant to transfer an incoming 9-1-1 call by manually obtaining dial tone through use of the telephone switch or the appropriate button on the PSAP CPE and dialing the appropriate TN or speed calling code.

**Master Street Address Guide (“MSAG”)** means a database of street names and house number ranges within their associated communities and ESNs to enable the proper routing of 9-1-1 calls.

**Mobile Switching Center (“MSC”)** means a switch that provides stored program control for wireless call processing. The MSC identifies the switching office that processes the cellular call to the PSTN and provides wireless two-way telecommunications services.

**Multi Line Telephone System (“MLTS”)** means a telephone system with more than one line per telephone station.

**Multiprotocol Label Switching (“MPLS”)** means a standards-approved technology for speeding up network traffic flow and making it easier to manage.

**National Emergency Number Association (“NENA”)** means a professional association comprised of emergency number personnel, 9-1-1 equipment vendors, and telephone company personnel responsible for the planning, implementing, managing, and administering of emergency number systems.

**Node** means a computer utilized to multiplex ALI data lines between the PSAPs and the ALI data management system computers. A pair of Node computers is utilized for up to 48 PSAPs.

**Node Port** means a port required on the Node to transmit data from the ALI MGT computer to the PSAP.

**No Record Found (“NRF”)** means a PSAP received an E9-1-1 call for which no location data is available.

**Normal Business Hours or Business Hours** are Monday through Friday, 8:00 AM to 5:00 PM Mountain Time, excluding Intrado holidays.

**Number of Records** means the quantity of TNs resident in the PS/ALI Database that corresponds to geographic locations of Customer and/or Customer’s Subscribers.

**PBX Station** means a telephone with a unique identifying number, which is connected internally and directly to the PBX.

**Port** means a pathway into and out of a computer or a network device, such as a switch or router. Any device that transmits and receives data implies an available port to connect to each line.

**Presence Information Data Flow Location Object (“PIDF-LO”)** is a XML syntax used within a SIP message that contains location information by reference or by value.

**PSAP Gateway Manager (“PGM”)** means a component of IEN that converts between IP and CAMA trunking into the PSAP CPE ANI controller.

**Primary Rate Interface (“PRI”)** means a trunking technology, which enables the networking of multiple locations. A single PRI trunk can carry various types of traffic. PRI trunks offer more flexibility than traditional analog trunks.

**Private Branch Exchange (“PBX”)** means a telephone system within an enterprise that switches calls between enterprise users on local lines while allowing all users to share a certain number of external phone lines. The main purpose of a PBX is to save the cost of requiring a line for each user to the telephone company’s central office. This internally switched telephone system is of significance to an IEN system because internal PBX stations may not always be contained in the ALI database, and as a result, may not be correctly displayed by ANI or ALI equipment.

**Private Switch/Automatic Location Identification (“PS/ALI”)** means a service offering which allows location information specific to the PBX extension to be added to the ALI database record.

**PS/ALI Customer** means the municipality, or other state or local governmental unit, or an authorized agent of one or more municipalities, or other state or local governmental units, or a PBX owner/operator, or Centrex AT&T who desires to provide station location information to the ALI management system.

**PSAP Direct Number (“PSAP DN”)** means a ten-digit local exchange telephone line of the geographically appropriate PSAP for any given Emergency Call request. This dialable number has been identified to Intrado’s analyst team by the PSAP or county as the appropriate 24x7x365 direct number for wireless call failover.

**Pseudo ANI (“pANI”)** means temporarily associating a non-dialable ANI containing a NPA/NXX corresponding to the geographically appropriate PSAP to facilitate call routing and ALI delivery to the PSAP for “mobile” calls. Per FCC Report and Order 94-102, the carrier must at least route a wireless caller’s 9-1-1 call to the nearest PSAP and deliver the associated ten-digit wireless handset TN, the cell site, and the sector.

**Public Safety Agency** means those governmental agencies, which by law are responsible for the delivery of emergency services within the Customer E9-1-1 Service Area.

**Public Safety Answering Point (“PSAP”)** means a facility equipped and staffed to receive Emergency Calls.

**Public Switched Telephone Network (“PSTN”)** means the network systems and connectivity operated by incumbent operating telephone companies to route and deliver voice calls to the indicated emergency TN.

**Request For Assistance (“RFA”)** means the emergency request made by a person to a PSAP. The request may be in the form of a traditional 9-1-1 call over Wireline, wireless, or VoIP telephony devices, in addition to devices that utilize IP for delivery.

**RFA Interface (“RFAI”)** means the interface used to deliver RFAs over IP to PSAP CPE.

**Request Initiator** means the person sending a text message from a wireless device to the Customer short code or ten-digit TN.

**Secure ID token** means an electronic security password device used to enable an individual user to log into Intrado’s web site for the purpose of updating Customer records.

**Selective Router (“SR”)** means a telephone switching center that receives 9-1-1 calls from other offices and uses the ANI or pANI to route them to the proper PSAP; operated by the LEC serving a particular PSAP. Some LECs call this the 9-1-1 “tandem” office.

**Selective Routing** means the routing of a 9-1-1 call to the proper PSAP based on the location of the caller. Selective Routing is controlled by the ESN, which is derived from the Customer location.

**Selective Routing Database (“SRDB”)** means a 9-1-1 selective routing translations database that contain phone number/ESN Routing Code relationships that route a 9-1-1 call to the proper PSAP.

**Selective Transfer** means a feature that enables a PSAP attendant to transfer an incoming 9-1-1 call to another agency by depressing a button labeled with the type of agency; e.g., “Fire,” on the PSAP CPE.

**Service Order Input (“SOI”)** Record means a database record, which includes the name, address or address equivalent, and the TN of a wireline carrier’s customer.

**Session Initiation Protocol (“SIP”)** means an application-layer control (signaling) protocol for creating, modifying, and terminating sessions with one or more participants, including Internet telephone calls, multimedia distribution, and multimedia conferences.

**Short code or telephone number** means a 5 or 6-digit short code or a ten-digit telephone number provisioned through a SMS aggregator for the routing of text messages to a PSAP via Intrado’s messaging gateway system.

**Short Message Service (“SMS”)** is a protocol for text messaging. SMS text messages are delivered through wireless carrier networks on a bandwidth available basis, and message delivery is not guaranteed.

**Standard Addressing** means a system for addressing which provides street/road names and house numbers, used in populating the ALI data management system.

**Subscriber** is an end user.

**Subscriber Record** means a database record, which includes the name, address or address equivalent, and the TN of a Subscriber.

**Telephone Number (“TN”)** means the ten-digit telephone number used to deliver a call through the PSTN to a designated Subscriber.

**TN Record** means Subscriber records in the ALI and Selective Routing databases, including wireline TN records, wireless ESRKs, and VoIP ESQKs.

**Telephone Service Provider (“TSP”)** means a business or organization that offers users access to the Telephone and related services. TSP entities include LECs, independent operating companies, Competitive LECs, wireless service providers, and VoIP Service Providers (“VSPs”).

**Terminating ESRP/i3 PSAP** feature is the ability for a PSAP to receive an i3 IP call with Location by Value (“LbyV”) or Location by Reference (“LbyR”). If the Terminating ESRP receives LbyR, it may query the LIS for location information and location information updates with the dereferencing protocol using HELD. The Terminating ESRP may query the CIDB via web services to obtain additional data about the call, caller, or location. The Terminating ESRP may query the ECRF via the LoST protocol to determine first responder agencies (e.g., Police, Fire, and EMS) associated with the location.

**Text dialogue** means SMS text messages sent back and forth between the initiator, Intrado’s A9-1-1 text system, and Customer PSAP personnel until the dialogue has been terminated (closed) by the PSAP personnel.

**Text message** means a SMS text message sent by a request initiator to the Customer short code.

**Trunk** means a telephone circuit connecting switching equipment between two sites, as between a PBX and a service provider’s network, or between two central offices.

**TTY/TDD (“TTY” [teletypewriter], “TDD” [telecommunication device for the deaf])** means a device that enables people who are deaf, hard of hearing, or speech-disabled to use the telephone by typing messages. In order to communicate, a TTY is required at both ends of the conversation, unless the call is placed through a Relay Center.

**Intrado Egress Point of Interconnect (“E-POI”)** is the demarcation point between the A9-1-1 network and the Customer CPE network (independent of CPE type or vendor).

**Intrado Ingress Point of Interconnection (“I-POI”)** means the location where end offices, MSCs, and VoIP carriers connect into the Intrado IEN with their 9-1-1 voice traffic.



# TXT29-1-1<sup>®</sup> Power Service Guide

Version 2019.09.30

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## 1. Introduction

This service guide describes Intrado's TXT29-1-1 Power service (the "Service"). Service is a solution offering emergency delivery of SMS to the short code 911 over an Internet Protocol ("IP") network. Emergency text messages, initiated from all Carriers requested by the PSAP within the PSAP jurisdiction, are routed to the public safety agency ("Customer") using text initiator cell sector location and displayed on the Power 911® screen at the call taker positions. Thereafter call takers may engage in a text dialogue with the caller to establish the nature of the emergency and dispatch accordingly.

Supporting Service is Internet Transport Services ("ITS") or Intrado's A9-1-1® Routing service for Text delivery to Customer. ITS provides managed edge devices and a secure VPN over Customer provided Internet between the PSAP and the Intrado Data Center to support Service. Similarly, the Intrado A9-1-1 Routing service can be used to establish equivalent connectivity.

## 2. Service Overview

### 2.1. Description

Service enables Customer's call taker ("End-User") to receive and respond to an emergency service request using an SMS text message. Service provides a messaging gateway, routing services, and a communications interface for emergency service requests sent via SMS text message to 9-1-1.

Intrado's Text Control Center ("TCC") is able to simultaneously process, route, and track emergency text dialogues for multiple Service customers. On receipt of a new SMS message a session is established between the TCC and Power 911 workstation with a visual indication on the workstation that there is a new text message. An available End-User selects the TEXT button to answer the request and to send and receive text messages with the text initiator ("TI"), referred to as a text dialogue.

### 2.2. Service Features

Service includes the following features:

- Visual alert to End-User that an emergency text message has arrived
- Ability to accept, complete, and place in queue any incoming text messages
- Pre-loaded and configurable messages to make responses quick and efficient
- End-User may respond to a text message while on a voice call, if they so choose
- Ability to display TI location as an in band message
- Ability to automatically failover to a back-up PSAP if connectivity to the primary PSAP is lost or text equipment at the PSAP fails
- Log retention of text dialogues
- Back-up/Failover
- External Transfer
- Location Update
- MMS Delivery
- Configurable Timeout Timer

#### 2.2.1. Internal Transfer

TCC now supports a variety of "in-band" commands that can be sent by the PSAP to invoke certain feature-specific actions on the TCC. Transfer is initiated utilizing the #T command.

- Allows 2 PSAPs to correspond privately utilizing the #P command
- Conference in another PSAP
- Transfer text dialog to another PSAP
- Upon a PSAP transfer the LAST known location is forwarded, in the initial message.
- Airbus Vesta CPE PSAPs utilize their own transfer ability and not this in-band TCC command. Their internal transfer ability is developed within their own software.

### 2.2.2. External Transfer

External PSAP transfer extends the existing transfer function utilizing the same #T command to prompt a transfer.

- External PSAP transfer allows for transfer of TXT29-1-1 dialogs to PSAPs using a different TXT29-1-1 TCC provider, other than Intrado.
- In order to utilize the external transfer function the PSAP must be Intrado text enabled.
- The PSAP receiving the transfer does not need to be Intrado text enabled.
- External transfer operates like the internal Intrado PSAP transfer functionality.
- Upon text enablement with Intrado, key words will be established for selected PSAPs to support transfer.
- Upon text enablement with Intrado, settings can be configured to allow for multiple transfers of a text dialog, allowing for an unlimited amount. The default setting for multiple transfers is 10.

### 2.2.3. Back-up/Failover

Back-up/Failover allows for a PSAP to designate an alternate PSAP to receive its TXT29-1-1 messages if the PSAP does not answer a text within 30 seconds. This is an optional service.

- Designation of a primary and secondary PSAP
- Messages continue to try the primary
- Route to secondary after 30 seconds if no answer (this is a universal setting, non-configurable)

### 2.2.4. Location Update

TCC allows the special command, called the "locate command", to obtain updated location information of an emergency texter. Specific keywords provide the PSAP call taker with the ability to request a location update for an active dialog.

- #L is the command used by the PSAP call taker.
- Upon a PSAP transfer, the LAST known location is forwarded in the initial message.

### 2.2.5. Media Delivery Configurable by Carrier & PSAP

Media and media notifications are available to PSAPs that opt-in for receipt. The PSAP will opt-in or out at the time of requesting service. A project is underway to address the PSAPs that are already text enabled that want to establish MMS delivery in the below outlined method.

How it works:

- PSAPs pre-configure three email addresses where TCC will auto-send media files. This removes the need for PSAPs to call Intrado to retrieve their media files.
- PSAPs can have the ability to choose whether they would like to receive MMS files or not. The default, upon deployment, is set to not send MMS. If the PSAP chooses to shut MMS off after opting in, they need to put in a ticket with the help desk for Mobility Sys Admin.
- If the PSAP call taker does not have immediate access to the pre-configured mailbox(es) receiving the media files, an in-band command can be initiated to have the media sent immediately to an email of its designation ex. #email Janedoe@psap.com. The PSAP policy will dictate if the call takers utilize this command.
- A PSAP will be able to transfer media files to another PSAP. Example- If PSAP A initiates a transfer to PSAP B as long as PSAP B elects to receive media, the files are transferred. If PSAP B has opted out of receiving media files, they will remain logged at PSAP A.
- Group MMS messaging is not available. Example: The texting party is having a heart attack and text messages 9-1-1 and their spouse. The message will go through to 9-1-1. It is the responsibility of texting application provided by the carrier to manage this situation, NOT TCC.
- MMS size limitations are based on what the carrier can accept. The default is set to 5MB which is the largest carrier requirement encountered to date. If this increases in the future, we can scale to the increased limits required by the carrier.

- If a carrier does not deliver MMS to a PSAPs jurisdiction that PSAP cannot accept MMS from that carrier.
- MMS plain text is delivered to the PSAP in its original state uninterrupted. If non-text MMS media is received and the PSAP is not prepared or has not opted in to receive MMS, the non-text media is not sent to the PSAP and a message is sent to the texting party informing them that the image, video, audio, etc. was not delivered to the PSAP.

### **2.2.6. Configurable Timeout Timer**

The TCC has a configurable timer that will terminate the text dialog after a period of inactivity. The default time value is 120 minutes. The timer can be applied on a per PSAP basis. When the activity timer triggers, the TCC sends a canned message to the texter informing them that the session has timed-out.

### **2.2.7. Customer Program Support**

Customer designates operations contact to act as Customer's project lead for this agreement. Customer's project lead works with the Intrado program manager to:

- Assist with the coordination of Intrado and Customer technical resources
- Coordinate Customer's technical resources for planning and design and requirements definition
- Reporting and verify problems related to Service
- Facilitate ongoing communications with Intrado
- Assign appropriate Information Technology ("IT") Personnel and experienced End-Users at each PSAP who understand the overall impact of the transition of the 9-1-1 systems
- Customer to provide ongoing resource for end-to-end testing of Service

Note: This activity may include Intrado and Customer's appropriate technical and operational groups to assure a solid understanding of the network architecture, data exchange procedures, PSAP needs, standard operational procedures, and services as designed for Customer.

Intrado will provide 24 hour per day operational support for Service. Intrado will provide appropriate contact information to Customer. Intrado is dependent on Customer to provide timely and accurate information to resolve problems.

Customer will identify personnel and work with Intrado to schedule training.

### **2.2.8. Daily Operational Support and Escalation Procedures**

Intrado will provide daily operational support to the extent outlined in the service order for Customer. Intrado will provide appropriate contact information to Customer. Intrado is dependent on Customer or Customer's PSAP to provide timely and accurate information to resolve problems. Failure of providing timely and accurate information to Intrado will impair the ability to resolve escalated incidents.

### **2.2.9. Subpoena Compliance**

Intrado will reasonably comply with requests made by Customer for specific subpoena-related audit record data. Intrado can accommodate most requests within five business days, provided that the request contains the full call back number (Wireless Text call), PSAP name, and a specific date and time. Requests for data that are vague or require extensive research will not be processed until additional detail is provided by Customer.

Requests that require extensive research will be subject to additional charge.

### **2.2.10. System Audit Records**

Intrado will store system audit logs for the Intrado systems involved in 9-1-1 text processing. For example:

- Text service transcripts

Intrado stores system audit logs for minimum one year. Intrado can provide pricing for data recovery past the service order term, on request.

## 2.3. Data Transport

### 2.3.1. A9-1-1 Routing Service for Text Delivery

Customers utilizing Intrado's A9-1-1 Routing Service can leverage their existing transport to facilitate Service delivery to the PSAP. The point of demarcation for Customer A9-1-1 service connectivity is the same as described in the diagrams provided below.

## 2.4. ITS Overview

ITS monitors Service over managed edge devices and a secure VPN through a Customer provided Internet connection between Customer and the Intrado Data Center.

ITS routers are deployed in either single-router or dual-router architecture. Each ITS router is dual-homed to geographically-redundant POPs within the Intrado ESInet. All application connectivity will traverse a device with border-control functionality ("BCF") to reach elements within the Intrado ESInet such as the TCC for delivery of Intrado's Integrated Service as shown in Figure 1.

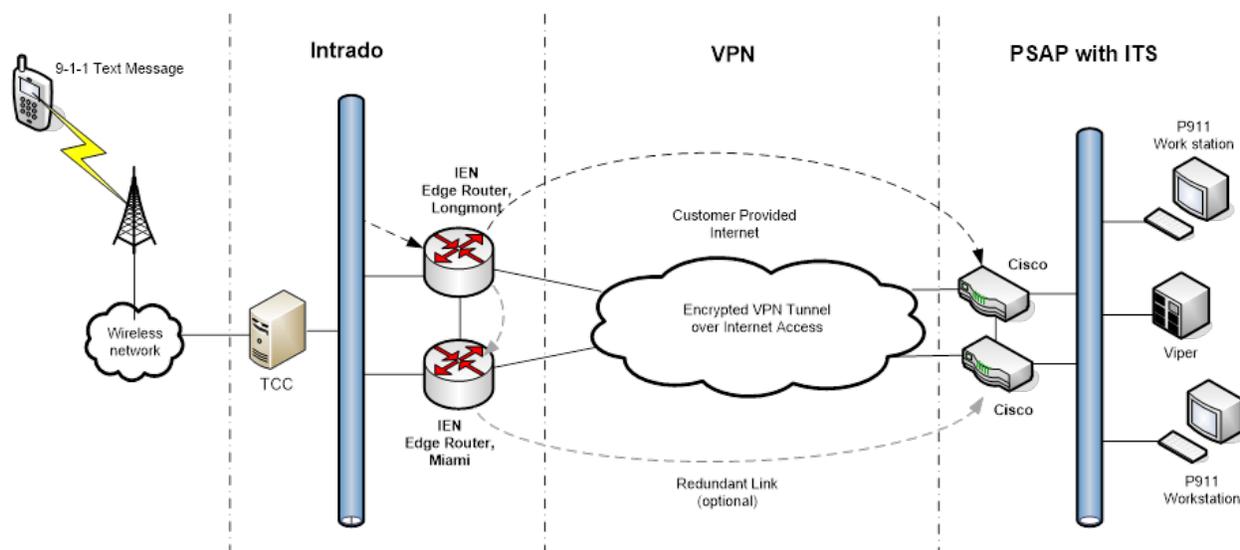


Figure 1: TXT29-1-1: High Level Diagram

ITS is deployed in one of three configurations:

- Host-Remote/Multi-node/ESInet
- Standalone PSAP with shared use public IP connection (non-Isolated)
- Standalone PSAP with dedicated public IP connection (Isolated)

### 2.4.1. Service Use Cases

The only supported use case for ITS is the Intrado Service.

### 2.4.2. Host-Remote/Multi-node/ESInet Requirements

The Host-Remote/Multi-node/ESInet architecture is suited for PSAPs or host sites which are part of larger deployments (host/remote, multi-node, etc.). Use this option when ITS routers will be deployed at multiple sites within Customer's PSAP network/ESInet and dynamic cross-site failover is required. This design requires Customer to purchase routers/firewalls if they do not have them already (they should have them if they are running a host/remote or multi-node setup). This option also meets i3 best practices (assuming Customer-managed router/firewall serves as a BCF device).

In this design, routing between ITS routers and Customer-managed routers/firewalls is dynamic (to support cross-site failover).

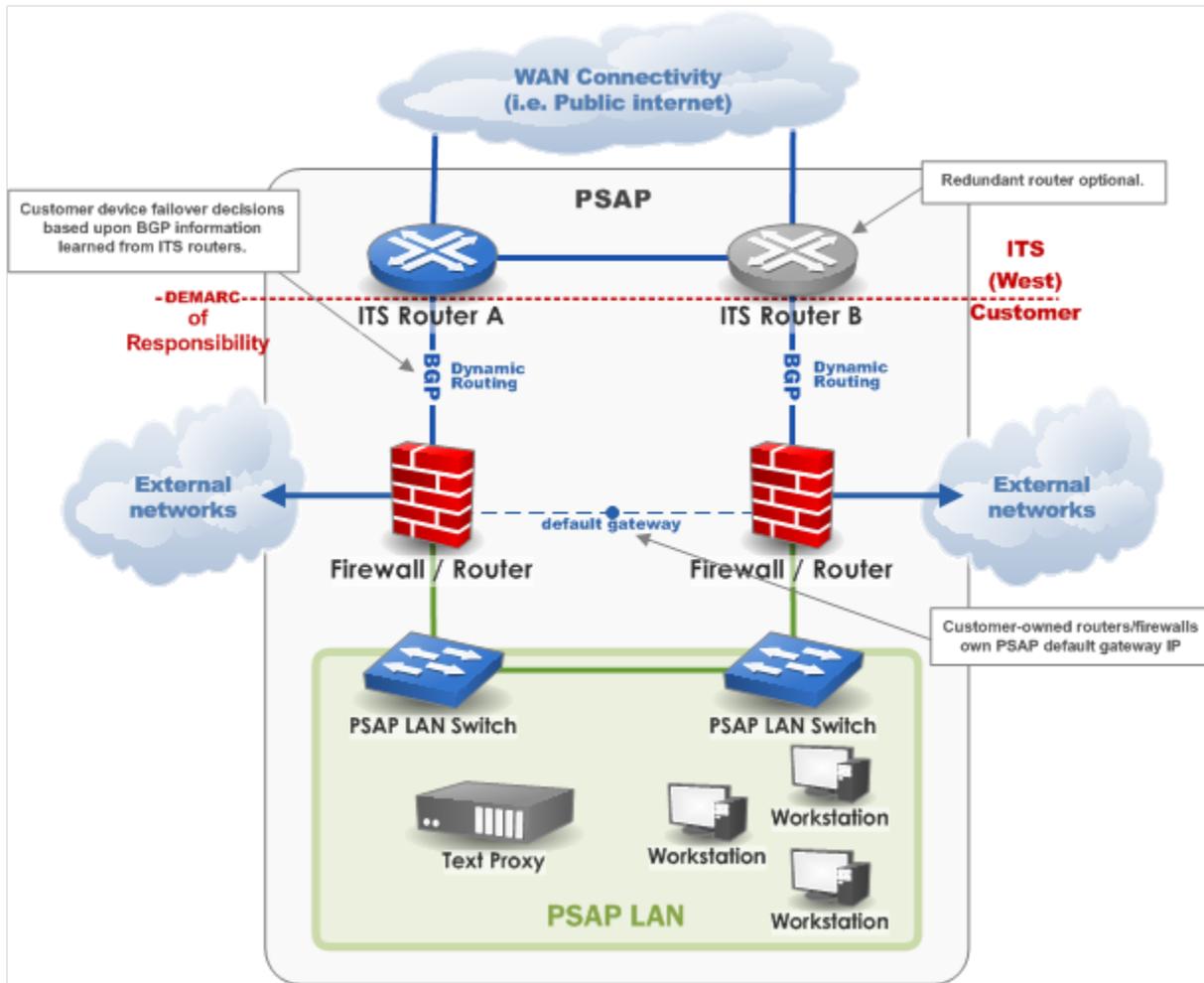


Figure 2: Host-Remote/Multi-node/ESInet Architecture

#### 2.4.2.1. Host-Remote/Multi-node/ESInet PSAP Requirements

- Site is part of a host/remote or multi-node deployment.
- Customer must maintain routers & firewalls to interconnect with ITS routers.
- Customer router/firewalls must support the BGP routing protocol.
- Customer router/firewalls must have one free port per ITS router.
- Uplinks to ITS routers must be Ethernet patch cables.
- Uplinks to ITS routers must be set to 100Mb/full-duplex.

#### 2.4.3. Standalone non-Isolated PSAP

The standalone non-isolated PSAP architecture is suited for simple standalone PSAPs that currently have or will require connectivity to other (non-Intrado) networks. In this design, ITS routers connect to Customer-managed routers or firewalls to reach the PSAP LAN. This option also meets i3 best practices (assuming Customer-managed router/firewall serves as a BCF device). This design requires that Customer purchase routers/firewalls if they do not have them already (they should have them if they are routing to external networks).

In this design, routing between ITS routers and Customer-managed routers/firewalls is static.

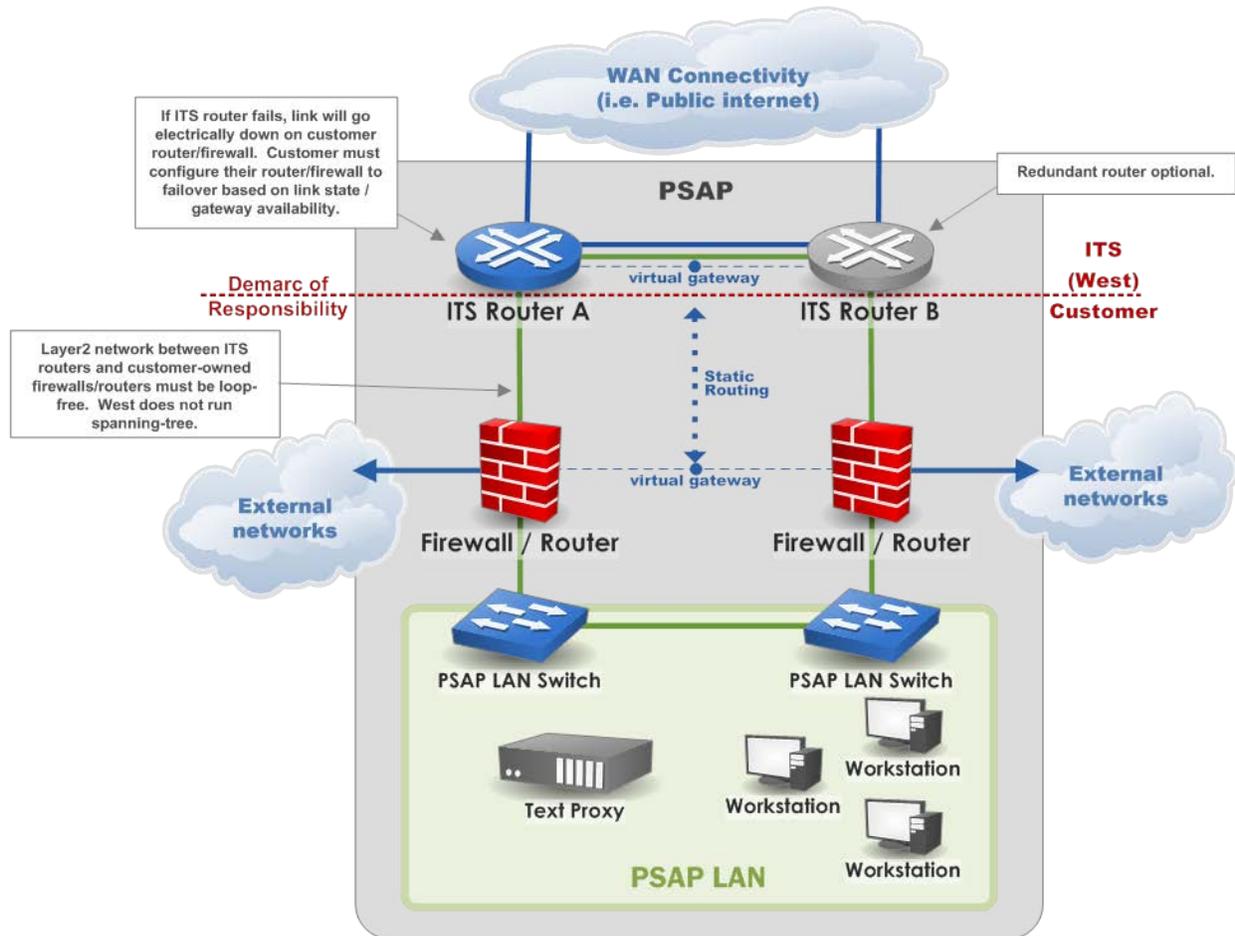


Figure 3: Standalone non-Isolated PSAP ITS Architecture

#### 2.4.3.1. Standalone non-Isolated PSAP Requirements

- PSAP is not part of a host/remote or multi-node deployment.
- Customer must maintain routers & firewalls to interconnect with ITS routers.
- If Customer routers/firewalls are redundant, they must be clustered/stacked, or use a first-hop reachability protocol such as HSRP/VRRP.
- Customer router/firewalls must have one free port per ITS router.
- Uplinks to ITS routers must be Ethernet patch cables.
- Uplinks to ITS routers must be set to 100Mb/full-duplex.

#### 2.4.4. Standalone Isolated PSAP

In a standalone isolated PSAP configuration, the ITS router takes over the PSAP LAN gateway, which makes this option the fastest and least complex to implement. However, it requires that the existing PSAP LAN has no routing whatsoever to external networks. This option does not use a BCF between Customer network and ITS routers. If Customer requirements call for a BCF, either the standalone non-isolated PSAP or the Host-Remote/Multi-node/ESInet architecture solution must be provided.

Figure 4 illustrates the LAN connectivity model for standalone PSAPs that do not have external network connectivity.

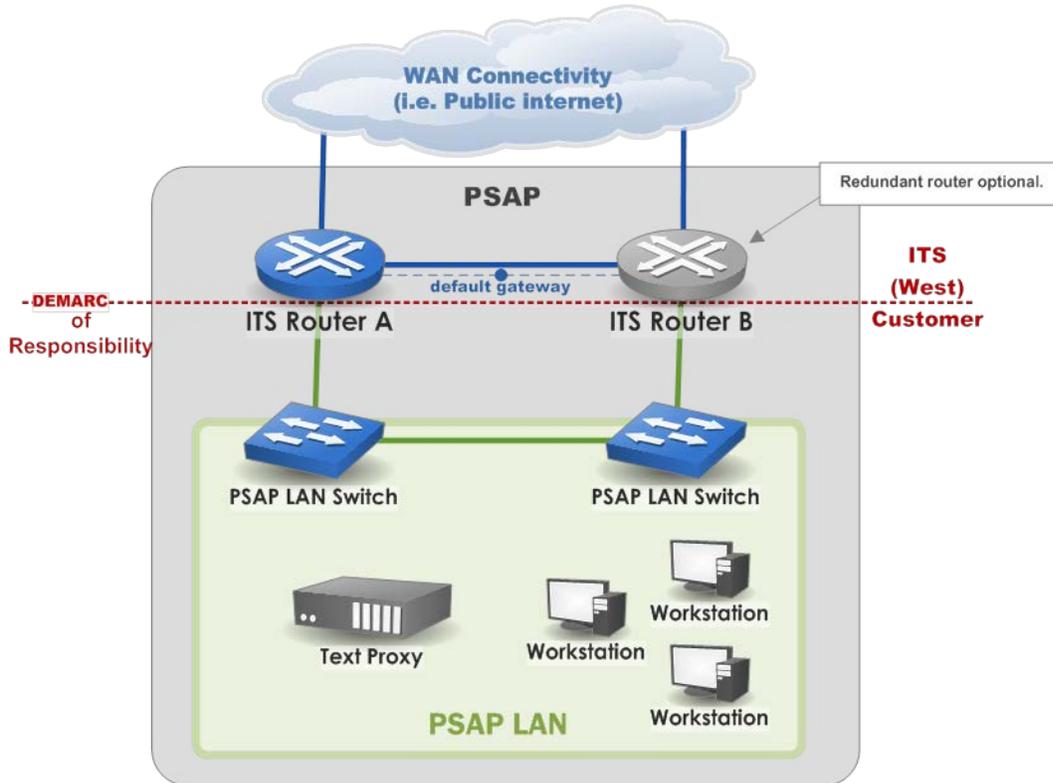


Figure 4: Standalone Isolated PSAP ITS Architecture

#### 2.4.4.1. Standalone Isolated PSAP Requirements

- PSAP must be completely isolated from other IP networks, and is not part of a host/remote or multi-node deployment.
- ITS routers will take over the PSAP LAN default gateway IP.
- PSAP LAN switches must have one free port per ITS router.
- Uplinks to ITS routers must be Ethernet crossover cables.
- Uplinks to ITS routers must be set to 100Mb/full-duplex.

## 2.5. Customer Provided Public Internet

Customer provided public Internet access is required for establishment of VPN transport from the Intrado Data Center to the PSAP. The public Internet bandwidth will be dependent upon the agreements established by the PSAP and its Internet Service Provider ("ISP"). Intrado cannot make any guarantees on bandwidth for this transport path. Given a heartbeat of 1 check per minute, 3 Mbps of bandwidth will be consumed as an ITS baseline with expected bursts of 8192 Bps for the text application.

The following are the requirements and method of handoff to facilitate proper connectivity between the Intrado ESInet and ITS routers co-located at Customer:

Customer must provide internet connectivity via an Ethernet handoff to the ITS router. This link must be hard-set for 100Mb/full-duplex. If the handoff is from a router, the Ethernet cable must be a cross-over cable.

Customer must provide ITS router with an IP via DHCP (preferred), or by static assignment. If static, Customer must provide an IP, subnet mask, and gateway.

Each ITS router requires a separate internet connection.

Internet connections should be plugged into GE 0/1 port on the ITS router.

Communication between the ITS routers and the following IP addresses/ports/protocols must be permitted.

IP addresses	Ports/Protocols
64.58.49.24	ICMP
64.58.49.25	UDP 500
64.58.49.26	UDP 4500
64.58.51.56	IP Protocol 50
64.58.51.57	

Customer is responsible for managing its ISP(s), and all infrastructure up to (but not including) the ITS router port.

## 2.6. TXT29-1-1 Failover Protection

Failover protection for TXT29-1-1 is provided for solutions that purchase a second (redundant) ITS. With a redundant ITS there are two forms of failover support for Service-ITS failover (network layer), TXT29-1-1 alternate routing (application layer).

Network Layer Failover: For standalone non-isolated PSAPs, ITS failover is accomplished via link state/gateway availability failure detection by the ITS' firewall/router. For host-remote/multi-node/ESInet architectures failover is accomplished via BGP routing. In both cases failover is accomplished in the matter of a few seconds.

Application Layer Failover: In cases where the routing to the primary PSAP TXT29-1-1 Serving Area User Agent ("SAUA") has failed, the TXT29-1-1 TCC can be configured to route to an alternate SAUA. The alternate SAUA must be a separate physical facility and have its own primary NENA PSAP ID ([FCC 9-1-1 Master Registry](#)). This failover capability only exists for host-remote/multi-node/ESInet solutions where the primary and secondary PSAPs each has its own primary PSAP NENA IDs. This failover occurs 30 seconds after the Intrado TCC fails to connect to the primary SAUA. Establishment of the alternate SAUA is associated with the provision of Service.

## 3. Severity Levels

Intrado will address all service issues, whether identified by Intrado or by Customer, according to the Intrado-confirmed Severity Level. Severity Levels determine the appropriate contact procedure and the actions that will be taken by Intrado for initial notification time, status update time, and incident management.

Following are service disruption definitions and procedures for each Severity Level and the response time goals for each Severity Level:

### 3.1. Severity Level 1

Severity Level 1 is only covers Voice and ALI delivery. It does not apply Service.

### 3.2. Severity Level 2

Intrado systems supporting Service are completely inoperative or severely impacted, resulting in complete loss in delivery of Service.

Resolution Procedure: Intrado will apply immediate and sustained effort until a resolution is in place. If a resolution cannot be readily identified, Intrado will initiate internal escalation procedures to assure resources are appropriately assigned for problem resolution efforts. Systems supporting Service are impaired, where major functions are operative but functioning at limited capacity or critical elements are no longer redundant.

### 3.3. Severity Level 3

Intrado systems supporting Service are impaired, where major functions are operative but functioning at limited capacity or critical elements are no longer redundant.

Resolution Procedure: Intrado will correct Service disruption or provide a procedure for the PSAP to bypass or work around such disruption in order to continue operations if possible. If a bypass procedure is utilized, Intrado will provide PSAP with an action plan for the development of the final resolution, and Intrado will continue resolution activity until full service is restored to PSAP.

### 3.4. Severity Level 4

Intrado systems supporting Service are impaired and some functions are not operating, but those functions are not mandatory or critical to 9-1-1 text delivery or are considered minor or cosmetic and have only a minor impact on usability.

Resolution Procedure: Intrado will address via standard maintenance procedures during Intrado normal business hours. If a software fix is required, Intrado will provide a fix during the next scheduled software release.

### 3.5. Onsite Response Time Goals

The on-site response time goals are stated in the chart below. On-site response times will apply if Intrado determines it is necessary to go on-site to repair a problem with Service.

Severity Level	On-Site Response Time Goal
1	Not Applicable
2	12 hours

## 4. Responsibility Matrix

The following matrix outlines the typical responsibilities of each party for the implementation and ongoing provision of Service. Where both parties have been listed, additional detail on the responsibilities of each party is included in the sections below. Failure of a party to satisfactorily complete a required task could materially impair Intrado's ability to provide Service.

Task	Responsibility
<b>Project Implementation</b>	
Project Management	Intrado/Customer
Develop Intrado Methods and Procedures	Intrado
PSAP Facilities	Customer
PSAP Facility Site Preparation (floor space, power, etc.)	Customer
PSAP Data Collection	Customer
Text Routing Cell Sector Data	Intrado
Non-Intrado PSAP Equipment Note: This may be legacy equipment or new equipment purchased under another Customer agreement and or non-Intrado PSAP equipment, such as CAD system, voice recording equipment, and radio system; if applicable	Customer
End to End Testing of Service Prior to Production	Intrado/Customer

Task	Responsibility
Production Turn-up of Service	Intrado/Customer
<b>Ongoing Responsibilities</b>	
TCC Log Storage and Backups	Intrado
TCC Network Maintenance	Intrado
TCC Network Monitoring	Intrado
ITS Network and System Maintenance	Intrado
Data Transport	Intrado/Customer
Public Internet Service Maintenance (where applicable)	Customer
Text Application Upgrades	Intrado
Text Log Storage and Backups	Intrado
Maintain Intrado Methods and Procedures	Intrado
Problem Reporting, Triage and Resolution	Intrado/Customer

Table 1: Responsibility Matrix

#### 4.1. Intrado Responsibilities

Intrado will provide and maintain geographically redundant TCC systems.

Intrado will interconnect with Wireless Carrier SMS hubs to route SMS generated by the participating Wireless Carrier subscribers to Customer. Only 9-1-1 text traffic originating from the participating Wireless Carrier subscribers will be routed to Customer.

Intrado will monitor and alarm the Intrado Network to proactively detect any hardware application failures.

Intrado will perform monitoring of communications between the VIPER® and the Intrado Network.

When Intrado detects a service affecting event, or upon request by Customer, Intrado will perform troubleshooting for issues that are within the direct control of Intrado for IP connectivity to the SMS hub provider. Intrado will contact the SMS hub provider, as necessary, for support issues related to SMS hub network.

#### 4.2. Customer Responsibilities

Customer will provide personnel to participate and help execute the end-to-end system acceptance test plan. Customer participation includes providing call takers to receive and process test text messages at pre-scheduled timeframes.

Customer will ensure that the workstations have been upgraded to current versions of software supporting the required VIPER and Power functionality.

Customer will provide Internet access conforming to minimum requirements as specified in Section 2.5 above.

Customer will provide rack space for the Intrado communications equipment (routers/switches and remote power/console servers) in Customer's equipment room within 100 feet of the communications demarcation point. The Intrado communications equipment requires one rack unit slot per router and will come with brackets to support installation in a standard 19-inch equipment rack. Customer will ensure the equipment rack that houses the Intrado communications equipment is adequately grounded and anchored (to the floor, ceiling or adjacent racks). Customer will also provide commercially reasonable physical security for Intrado provided communications equipment. Intrado recommends that Customer-provided rack space be in a

location that receives limited building traffic. Customer will also provide an AC power feed (110v/1.5A) for the Intrado communication equipment.

Note: This activity may include coordination between Intrado and Customer's appropriate technical and operational groups to assure a solid understanding of the network architecture, data exchange procedures, PSAP needs, standard operational procedures, and services as designed for Customer.

Customer will not impair or prevent Intrado's ability to provide Service. If such occurs and is not remedied within 90 days of Intrado's request to proceed and with all parties acting in good faith, then Customer will be obligated to compensate Intrado for services rendered and/or for cost incurred to put the infrastructure in place to attempt to render Service.

## 5. Service Limitations and Disclaimers

The following service limitations and disclaimers apply:

- Service cannot be enabled until Customer has modified its network to route to the Intrado TCC.
- PSAP billing will begin upon completion of deployment and text readiness delivery from Intrado to the PSAP. Completion is defined as the PSAP being able to accept text messages.
- Intrado interconnects with third party TCC's, however the performance of the third party TCC is not the responsibility of Intrado.
- Intrado's responsibility for text message routing and processing begins when text messages have been delivered to the Intrado TCC and is limited to the routing and delivery of text messages from Intrado to the identified Customer's End-User. Intrado is not responsible for the delivery or timing of SMS Request for Assistance text messages through the carrier networks.
- Network failures could result in Service being temporarily unavailable. Due to the SMS network and/or wireless carrier servers, new and in-process text dialogues could be delayed or lost.
- End-User cannot initiate a text session with a caller.
- TXT29-1-1 interface will not bid the ALI system nor receive an ALI response for text messages. No ALI-like data will be provided for text messages.
- Service is an emerging technology and is not a replacement for established landline and wireless 9-1-1 services. Service relies on industry SMS infrastructure which is not built to public safety standards, and may include increased latency and the potential for dropped messages.
- Service requires that mobile phones must be text-enabled and be capable of sending properly formatted text messages.
- Intrado has no control over the truncating and sequence delivery of SMS messages.
- Intrado has no control over the character count limitations per device and/or carrier network.
- Intrado has no control or authority to mandate the content of bounce back messages.
- Intrado has no control of routing messages that do not come to the Intrado TCC.
- Intrado has no control over improper routing of SMS messages from third party TCC providers.
- Intrado Outage Notification is limited to Intrado systems and will not include carrier network specific information.
- ITS is not an option to support voice 9-1-1 calls or ALI services.
- Intrado's responsibility for service performance is limited to its equipment and Intrado-provided network.
- Customer understands and accepts that the overall service availability of Customer-provided Internet path will be impacted by the reliability of the Internet connection provided by Customer. Customer takes sole responsibility to restore the Internet connection with its selected ISP.
- Equipment charges will be assessed upon delivery of equipment.
- Solutions where the TXT29-1-1 solution requires transport to remote PSAPs will require use of Customer WAN solution connecting the PSAPs. Unless provided by Intrado, Customer understands and accepts that the overall service availability impacted by outages on Customer WAN. Unless provided by Intrado, Customer takes sole responsibility to restore the Internet connectivity between its geographically dispersed locations.
- After installation of ITS circuit, Customer has three days to acknowledge acceptance of Service or acceptance will be assumed and monthly billing for the ITS will commence.

- A transfer initiated must be initiated from a PSAP using the Intrado TCC. However the transfer can be destined for a non-Intrado TCC PSAP.
- Transfers delivery may be limited to the primary PSAP designated within a circle shape file. The shape file is determined by the PSAPs TCC provider.
- Airbus Vesta CPE PSAPs can use the external transfer capability.
- Backup/Failover is an optional feature.
- Backup/Failover feature will allow auto failover to the designated secondary PSAP after 30 seconds of the text not being answered at the primary PSAP.
- Intrado is limited to providing updated location information based on what is provided from the carriers commercial location servers.
- Intrado is not responsible for the delivery of MMS to the TCC.
- Intrado will only email the MMS to the pre-configured email addresses provided by the PSAP.
- MMS will only be delivered to a PSAP that requests MMS delivery.