



Emergency Routing Service for the US Data Sheet

911 Enable's Emergency Routing Service (ERS) provides organizations with E911 call routing to over 5,500 Public Safety Answering Points (PSAPs) across the United States. Using a single SIP or PSTN connection, the ERS ensures that the caller's location information is delivered to the appropriate PSAP.



Compliance with all E911 Regulations
Standards-based call routing conforms to all state and FCC regulations, and follows NENA i2 standards, helping organizations to meet or exceed their E911 obligations.

Largest E911 Coverage
Provides 100% nationwide 911 coverage across the US and E911 access to over 5,500 PSAPs, ensuring reliable emergency service is available to users in all regions.

Superior Network Reliability
With carrier-grade redundant data centers and 100% up-time since 2005, the ERS delivers continuous E911 call routing service 24/7/365.

National ALI Database
Serves as a central repository for all user records and offers advanced real-time provisioning capabilities.

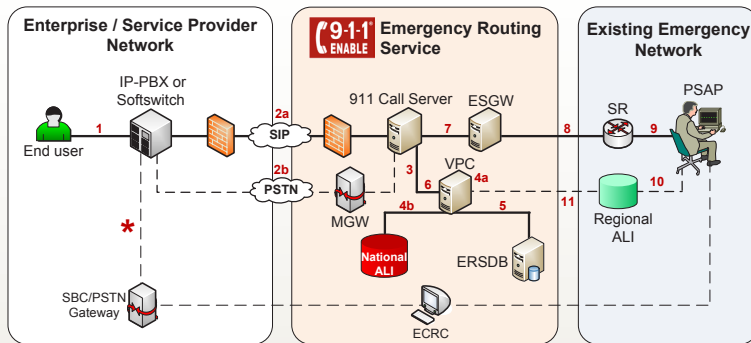
MSAG Validation
Locations are pre-validated using the Master Street Address Guide (MSAG) and any errors are automatically returned in real-time, along with suggested alternatives. This ensures locations are civic-valid and properly formatted to display at the PSAP.

Security Desk Routing and Notification
Delivers 911 calls and custom email alerts to on-site security personnel, notifying them of the emergency and providing them with the caller's precise location information.

Simple to Deploy and Manage
Offers quick and easy implementation in as little as 24 hours. The user-friendly web-based management interface includes an administrative Dashboard and SOAP API.

How it Works

The following diagram illustrates how 911 Enable's ERS routes a NENA i2 E911 call.



1. An emergency call is placed by an end user.
2. The IP-PBX/softswitch sends the emergency call to the ERS 911 Call Server
 - a Using session initiation protocol (SIP).
 - b Using PSTN, via a media gateway (MGW).
The IP-PBX/softswitch also delivers the caller's civic address either embedded in the SIP header or via an endpoint identifier. An endpoint identifier is a DID or extension that references a civic address already provisioned in the national ALI database.
3. The 911 Call Server sends the civic address or endpoint identifier to the VPC.
4.
 - a If a civic address is received, it is immediately cached in the VPC.
 - b If an endpoint identifier is received, the VPC queries the National ALI to retrieve the pre-provisioned civic address. The civic address is then cached in the VPC.
5. The VPC uses the civic address to retrieve the appropriate PSAP routing numbers from the Emergency Routing Service Database (ERSDB).
6. The VPC assigns an Emergency Service Query Key (ESQK) to the call. An ESQK references the associated civic address cached in the VPC. The VPC then delivers the ESQK and PSAP routing numbers to the 911 Call Server.**
7. The 911 Call Server receives the ESQK and PSAP routing numbers, and sends the call, ESQK, and routing numbers to the Emergency Services Gateway (ESGW).
8. The ESGW uses the ESQK and PSAP routing numbers to determine the selective router (SR) to which the call and ESQK should be delivered.
9. The SR receives the call and ESQK, and delivers them to the appropriate PSAP.
10. The PSAP receives the call and ESQK, which it uses to request ALI location information from the regional ALI database.
11. The regional ALI recognizes the ESQK, and requests the location information from the VPC based on the ESQK. The VPC returns the cached civic address associated with the current emergency caller back through the regional ALI, to the PSAP.

* In a failover scenario, the call is routed to the Emergency Call Response Center (ECRC) via an SBC/PSTN gateway. The ECRC is staffed 24/7/365 by professionally trained personnel who obtain the caller's location information, and deliver the call and location information to the appropriate PSAP.

** In an i1 call, the VPC delivers a contingency routing number (CRN) to the 911 Call Server. The ERS routes the call to the PSAP using PSTN. Location information is not automatically displayed at the PSAP. Steps 7-11 only apply to i2 call routing.

ERS Components

VoIP Positioning Center (VPC)	<ul style="list-style-type: none"> Stages ESQK for proper ALI retrieval by the PSAP Delivers routing instructions to the 911 Call Server Provides the caller's location and callback number to the PSAP National ALI Steering agreement with various carriers
National ALI Database (nALI)	<ul style="list-style-type: none"> Supports location, endpoint, and subscriber records Accepts records from all 50 states Real-time Master Street Address Guide (MSAG) validation Provides instantaneous corrections and alternatives
Emergency Routing Service Database (ERSDB)	<ul style="list-style-type: none"> Maintains Emergency Services Number (ESN) polygon boundaries for VoIP Geo-codes addresses based on street-level look-up of submitted address Determines the physical PSAP for call routing based on caller's coordinates Includes street-level GIS data and information provided by the 911 authority Two commercial, industry-recognized datasets are used to geo-code street-level information
Emergency Services Gateway (ESGW)	<ul style="list-style-type: none"> Signaling and media interworking point between the IP domain and the conventional selective routing trunks Connected using redundant SS7 or CAMA trunks to each regional selective router Converts calls from IP to Public Switched Telephone Network (PSTN) Uses routing information provided by the VPC to deliver the call to the appropriate selective router
911 Call Server	<ul style="list-style-type: none"> Handles 911 calls Receives routing instructions from the VPC Forwards calls to the appropriate ESGW
Media Gateway (MGW)	<ul style="list-style-type: none"> Used for PSTN call delivery only Signaling and media interworking point between the IP domain and the conventional ISDN/PRI trunks Converts calls from IP to PSTN Uses routing information provided by the VPC to deliver calls to the appropriate destination
Emergency Call Response Center (ECRC)	<ul style="list-style-type: none"> Used for unprovisioned callers and as a failover Ability to reroute user to appropriate PSAP as an enhanced 911 call Operated 24/7/365 APCO trained and certified staff

Connectivity

Call Delivery	<ul style="list-style-type: none"> Connectivity options <ul style="list-style-type: none"> PSTN via access number Public internet VPN MPLS Cross connect Protocols <ul style="list-style-type: none"> SIP/UDP SIP/TCP RTP/UDP, G.711
Provisioning	<ul style="list-style-type: none"> Web-based administrative Dashboard Real-time SOAP/XML interface SSL encryption 128 bit crypto key
Enhanced 911 Coverage	<ul style="list-style-type: none"> 5,500 Public Safety Answering Points (PSAPs) across the US Delivers basic 911 calls to PSAPs in NENA i1 coverage areas
911 Enable Emergency Gateway	<ul style="list-style-type: none"> SIP connection for organizations using the Emergency Gateway appliance

Maintenance and Support

Technical Support Center (TSC)	<ul style="list-style-type: none"> Customer support and troubleshooting 24/7/365 Emergency number Email and Web support
Network Operation Center (NOC)	<ul style="list-style-type: none"> 24/7/365 Network monitoring

Other

Administrative Dashboard	<ul style="list-style-type: none"> Used to administer E911 service Audit data View reports View Call Detail Records (CDRs)
Data Centers	<ul style="list-style-type: none"> Carrier grade, fully redundant 60 Hudson Street, New York City, NY 1 Wilshire Blvd, Los Angeles, CA
Security Desk Routing and Alerting	<ul style="list-style-type: none"> Direct call delivery to security desk Three-way call monitoring Email alerts to designated distribution list
Product Number	<ul style="list-style-type: none"> EN911-LOCMRC (Enterprise Location) EN911-EPOMRC (Enterprise Endpoint) RE911-SUBMRC (Residential Subscriber)
Licensing	<ul style="list-style-type: none"> Monthly subscription service Based on the number of records provisioned
Documentation	<ul style="list-style-type: none"> ERS Standard Operating Procedures ERS Support Policies Dashboard Manual ERS Networking Interface Description
Regulatory Compliance	<ul style="list-style-type: none"> All state legislations FCC regulations (Title 47, Section 20.18)
Standards Compliance	<ul style="list-style-type: none"> NENA i2 (08-001) RFC <ul style="list-style-type: none"> SIP: 2543, 3261, 2976, 3265, 3262, 3325, 3863, 4119, 5139 RTSP: 2326 RTP: 1889 SOAP: 3902 PIDF-LO: 5139 SSL 3.0 Protocol Specification
Solution Applicability	<ul style="list-style-type: none"> Enterprises Small and Medium Businesses VoIP Service Providers Hosted PBX Video Relay Service