

# CREALOG<sup>9</sup>

MORE THAN 30 YEARS  
FOR SUCCESSFUL CONNECTIONS

**NG 112**

**EMERGENCY**

SERVICES







## APPLICATIONS FOR CRITICAL EMERGENCY SERVICES

The foundations of today's emergency call infrastructure were laid over 20 years ago with fixed networks in mind. The main objective was to reliably connect a caller from a fixed telephone to a Public Safety Answering Point (PSAP) and to provide the emergency services with the subscriber's address from a dedicated database.

With the advent of mobile networks, the challenge of providing location information became more complex and was consequently addressed using triangulated data from the mobile operator's network infrastructure.

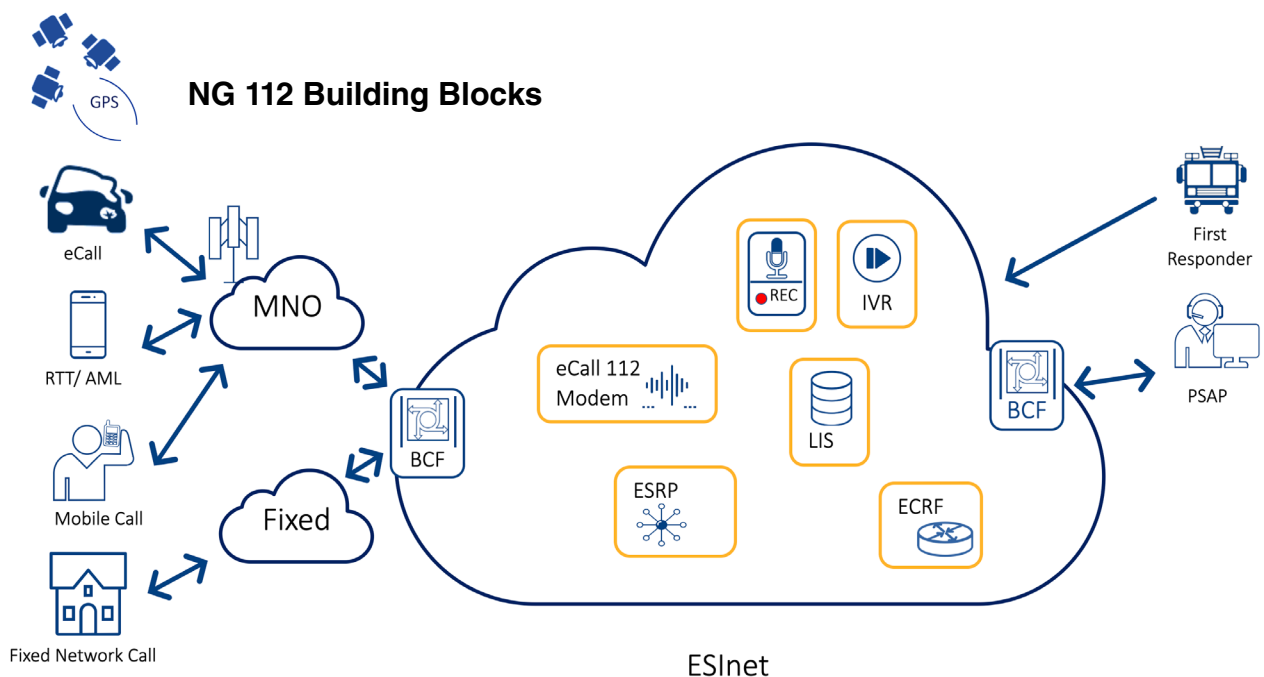
Technology has evolved and new capabilities have been introduced with the evolution of telecom networks to IMS with IP protocol based signalling and VOIP. Today, smartphones offer very precise GPS location information and new ways of communicating via video or text.

In addition, every new car must now have built-in eCall capabilities to call for help in the event of an accident.

The new European NG 112 standards, defined by the European Emergency Number Association (EENA), now provide a transnational framework that encompasses the technical capabilities of all IP networks, smartphones and devices, as well as common communication methods.

### BUILDING BLOCKS

The NG 112 standard initiative provides nationwide, unique and centralised specifications for the implementation of state-of-the-art, next-generation 112 call services within communications networks. CreaLog helps you plan and deploy your NG112 solution with field-proven technology.



## IMPROVED EMERGENCY CALL ROUTING

The CreaLog NG112 Emergency Call Routing solution is designed to help you modernise your emergency network and support multimedia communications to comply with the new NG112 standards. Our IP routing solution allows you to create an ESInet network that bypasses your core network without compromising the availability and reliability of the network that is essential to support emergency calls.

Maximum availability and improved accessibility are the key objectives of the system to support a wider range of emergency call traffic, from traditional voice calls to SMS and video calls.

NG112 call routing takes advantage of the centralised LIS server to retrieve the geolocation of eCalls from vehicles, mobile subscribers and

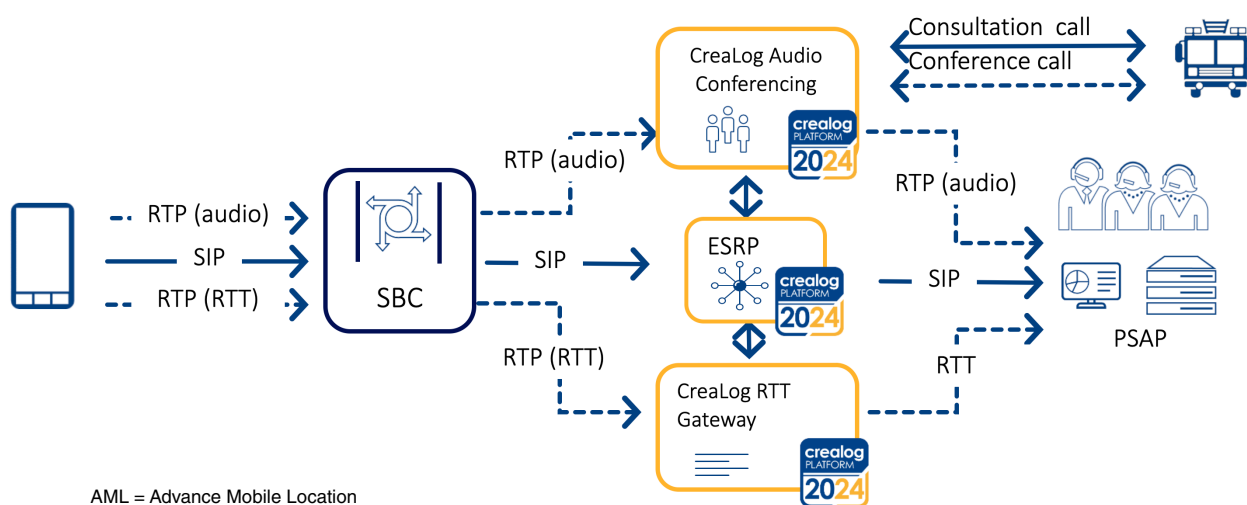
fixed phones. It matches the caller's location to polygon boundaries of PSAP areas (or service boundaries) using the LoST (Location to Service Translation) protocol to accurately route the call to the appropriate PSAP (Public Safety Answering Point).

For each incoming emergency call, the technical and organisational availability of the nearest relevant PSAP is first checked and calls are routed without loss of information.

Predefined criteria take into account both predictable and unpredictable events to avoid network congestion. If a PSAP is unavailable or overloaded, the call is re-routed to one or more alternative PSAPs that meet the criteria of the emergency call, based on policy.

Greetings can be used to play IVR announcements and proactively inform callers of known major incidents. Standard greetings reduce the number of unwanted calls.

## RTT Support Systems



AML = Advance Mobile Location  
 eCall = emergency Call  
 ESInet = Emergency Service IP Network  
 ESRP = Emergency Service Routing Proxy  
 PSAP = Public Safety Answering Point  
 RTP= RealTime Protocol  
 RTT = RealTime Text  
 SBC= Session Border Controller  
 SIP= Session Initiation Protocol

## RTT SESSION ROUTING & CONFERENCING SERVER

The CreaLog NG112 solution provides emergency services with accessibility for the deaf, deafblind and hard of hearing. The standards-based Real-Time Text (RTT) protocol enables text chat for the hearing impaired while maintaining the voice call. This results in advanced routing capabilities of the ESRP to support RTP with RTT and voice in the same call session. In addition, a dedicated conference bridge provides consultation calls with first responders.

## NET-CENTRIC ECALL MODEM

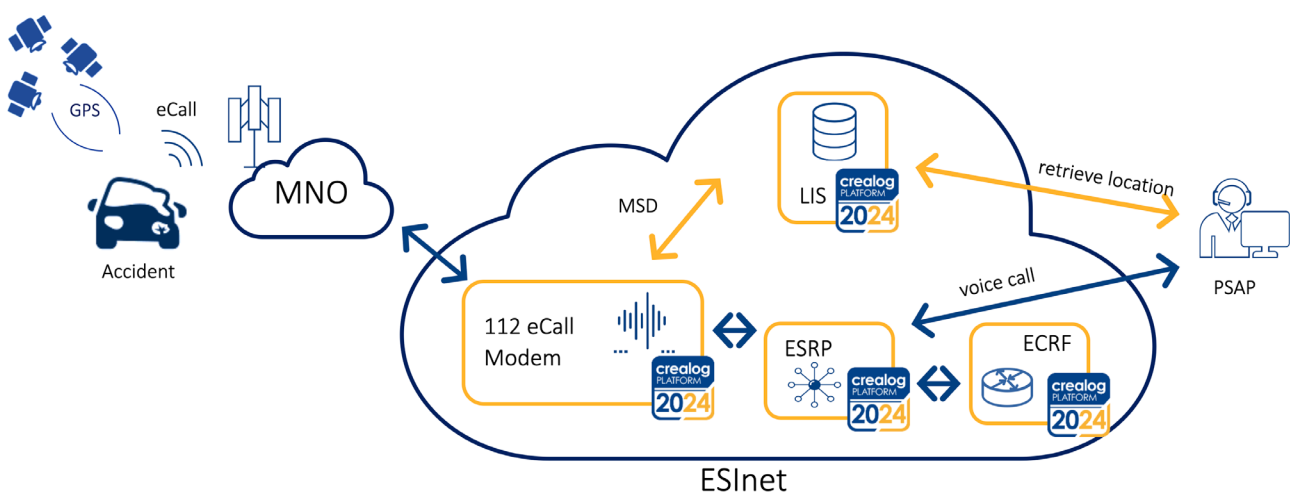
Traditionally, an eCall is activated automatically (or manually) by a car's In-Vehicle System (IVS) when sensors inside the car detect a serious accident. The Minimum Set of Data (MSD) information transmitted includes not

only the location of the caller, but also additional data such as car model, direction of travel and more, which is decoded by the eCall modem.

CreaLog's Net-Centric eCall Modem is designed to receive all eCalls within an MNO (Mobile Network Operator) network and off-loads the communication with the IVS from the regional PSAP. It stores the MSD (Minimum Set of Data) in the LIS (Location Information Server). The eCall is then routed as a voice call to the relevant PSAP. The location information and the MSD can then be retrieved in the PSAP either via LbyR (Location by Reference) or via the phone number of the car's in-vehicle system.

The network-centric eCall modem, as part of ESInet, provides advanced eCall handling and routing capabilities, eliminating the need for a local eCall modem at each PSAP.

## Net-Centric eCall Modem



## CENTRALISED LIS SERVER

The Location Information Server, or LIS, is a network node in the NG112 network architecture that stores the location data of the emergency caller for retrieval by the PSAP.

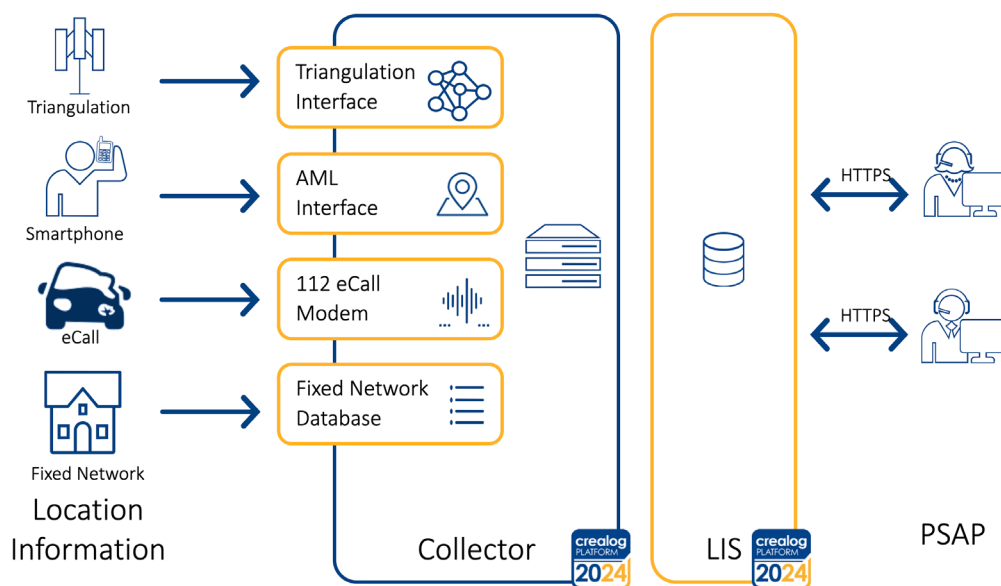
The LIS overcomes the historical limitations of location information only being transmitted via call signalling. It is a central server within the ESInet that unifies geolocation data from different sources, such as eCall 112, Advanced Mobile Location (AML) and the fixed network location database. It uses the PIDF-LO

protocol and supports HTTP-Enabled Location Delivery (HELD) to provide geolocation details.

AML is a built-in feature on iOS and Android smartphones. When a user initiates an emergency call, the location data is automatically sent via SMS or HTTPS, providing either GPS or WiFi information.

As location is the critical element for emergency calls, we enable PSAPs to retrieve location and all other call information from the location service via web services.

## Location Information Server (LIS)



## NET-CENTRIC CALL RECORDING

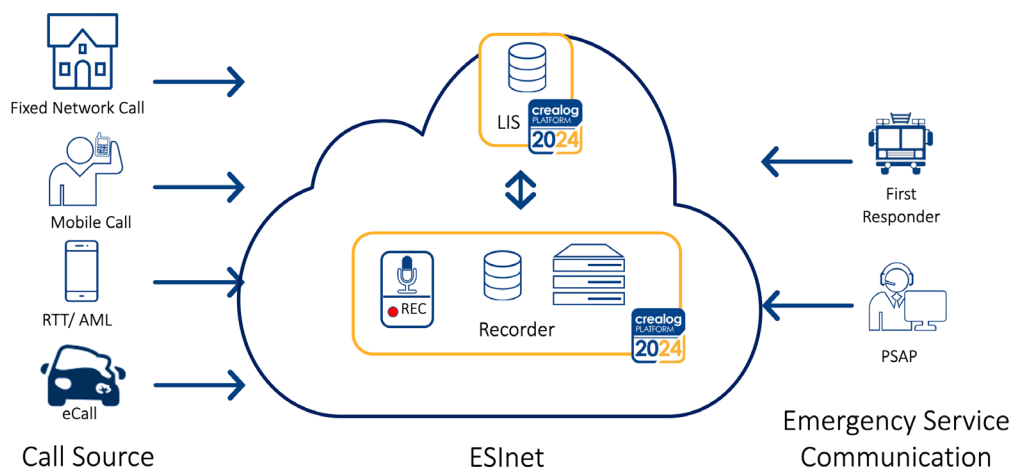
With the CreaLog Net-Centric Call Recording solution, the entire emergency call communication can be recorded, securely encrypted and forwarded to a designated PSAP without the need for a separate recording instance at each location.

The CreaLog Net-Centric Recorder helps you to keep track of all NG112 communications. As a central component of ESInet, it provides session recording and voice transcription for analysis and automated incident reconstruction. The CreaLog

system securely records 112 calls, radio, text, location and other multimedia communications and data, including CAD screens and other software used by the dispatcher during the call. By centralising data collection, it removes the barriers of data silos and manual intervention.

CreaLog Emergency Call solutions support a wide range of interfaces to carry traffic from multiple services and applications, allowing new functionality to be added as new technologies emerge.

### Net-Centric Call Recording



## ADVANTAGES FOR EMERGENCY ORGANIZATIONS

The CreaLog NG112 emergency call building blocks are designed to help you modernise your emergency call network and support multimedia communications to comply with the new NG112 standards set by the European Emergency Number Association (EENA). Our IP solution is designed to meet the following network availability and reliability requirements

Maximum availability of the NG112 service and improved accessibility are the main objectives of the system to support a wider range of emergency call traffic, from traditional voice calls to text messages, video calls, etc.

CreaLog Emergency Call solutions support a wide range of interfaces to carry traffic from

multiple services and applications, adding new functionality as new technologies emerge.

The flexible routing options offered by our advanced emergency call routing ensure fast call response times and prevent lost calls due to non-availability or PSAP overload.

### BENEFITS FOR NETWORK OPERATORS

Routing eCalls and 112 calls is transformed from a necessity into a billable value-added service, enhancing the CSP's reputation as a reliable partner for any communications solution.



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