

Critical Communications at Scale

Optimizing Mission Critical and Private Networks



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ENENSYS Critical Communications Solution brings end-to-end multicast technology, allowing first responders and other critical users to communicate at scale.

During emergencies, first responders are constantly exchanging information. Legacy TETRA and P25 solutions provide excellent push-to-talk and short data capabilities. However, public safety personnel increasingly need to use new tools such as drones and cameras for improved situational awareness.

By default, mobile networks use one-to-one (unicast) communications to exchange information. **Multicast (one-to-many) delivery means the message is delivered just once to all participants at exactly the same time.** Multicast can equally be applied to video, data and any future multimedia format.

ENENSYS' Critical Communications solution, based on 3GPP eMBMS standards, enables multicast delivery for all critical communications, including public safety and private networks.



Verticals

- Public Safety
- Transportation (Railways, Maritime, Logistics,...)
- Utilities (Electricity, Gas, Water,...)
- Extractive Industries (Mining, Oil & Gas,...)
- Private Networks (Industry, Enterprise,...)

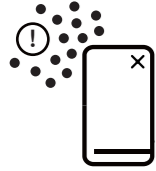
Applications

- 3GPP Mission Critical Services (MCX) suite:
 - MCPTT
 - MCDATA
 - MCVideo
- Real-time messaging
- Video surveillance camera broadcast
- IoT
- Drones, Automated Guided Vehicles
- Enhanced situational awareness

Benefits

- **Extreme Scalability:** eMBMS serves thousands of users in a dedicated area
- **Highly reliability:** eMBMS coordinates hundreds of devices across multiple cells improving coverage, signal strength and message delivery
- **Synchronized Delivery:** all devices receive the same message at exactly the same time
- **Cost-effective solutions:** Multicast reduces the need for additional network resources and allows a wider range of devices to be used
- **Lower energy usage:** Sending the same message once to a large number of devices is a much greener solution
- **Future-proof:** eMBMS is a 3GPP standard which will continue to evolve to serve critical users' needs

How ENENSYS' Critical Communications at Scale solves key issues faced by Critical Users



No Service due to Massive Use of Network

Your organization manages a critical communication network. Everything runs perfectly well as long as there is no major event.

But what happens when a major issue occurs? Network saturation, denial of service, delays in safety group arrival? Human lives are at stake when using a unicast technology unable to handle a large number of simultaneous users in a group call.



To avoid catastrophic outcomes, ENENSYS has easy-to-deploy solutions that support an unlimited number of users in a group call without having to oversize your network.



Voice-only Group Calls, Without Photos or Videos

Having the most accurate information as soon as possible is key in critical communications. We all know a picture is worth a thousand words, and a video many, many more.

It can take fewer than a dozen people in a video group call to make the network become saturated or even collapse. How can you share valuable information (pictures, maps or videos) to improve service and citizen protection.



ENENSYS has solutions to optimize the network and use the bandwidth for messages enriched with pictures and even video, without adding CAPEX in the network itself.



Messages that are Out-Of-Sync

Nowadays, even small incidents imply large groups of first responders: Police, Fire Departments, ambulances, and possibly gas or electricity companies, and more. But the network size and dimensioning was fixed years ago.

The more people that are in the group call, the greater the time lag between the first person receiving the message and the last. This lag creates unnecessary alerts, limiting the number of responders for other incidents, or requiring over-investment.



ENENSYS CubeAgent™ helps to deliver critical messages simultaneously to all first responders so they can act accordingly and provide the right level of service.



Too expensive to deploy key Quality of Service measures

Network SLAs and KPIs for mission-critical voice services are native to legacy narrowband technologies such as TETRA and P25. 3GPP standards-based networks include additional network functions such as PCRF (Policy and Charging Rules Function) to guarantee real-time Quality of Service for critical users such as public safety.

Mobile network operators are reluctant to take on burdensome SLAs and KPIs from Governments to guarantee public safety operations as this is likely to lead to a significant increase in the number of PCRFs in the network, making such operations more expensive.



ENENSYS' multicast solution optimizes the mobile broadband network for group calls, reducing the amount of mission-critical traffic required and therefore allowing operators to meet their obligations to this sector without increasing the number of PCRFs.



Overpriced Ruggedized Smartphones

Nowadays, all public organizations must focus on spending taxpayers' money in the most appropriate way. Equipping all first responders with ruggedized business devices can be extremely expensive.

How can cost-conscious agencies hand out different types of devices to different types of users and still guarantee the same level of critical communications services?



Using ENENSYS CubeAgent™, it is possible to equip only those first responders requiring ruggedized terminals (firemen, police officers) and all the others (paramedics, nurses, logistics) with commercial smartphones without compromising on quality of experience.



Multiple Validation of Apps on Different Phones

Your critical service agents are equipped with a large array of phones, bought year on year, including different brands and generations. On top of this, they also use a large number of apps, that may not be interoperable with each other.

How can a unified service be achieved without having to reset everything every 3 months or so?



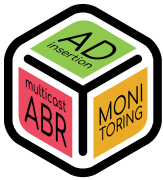
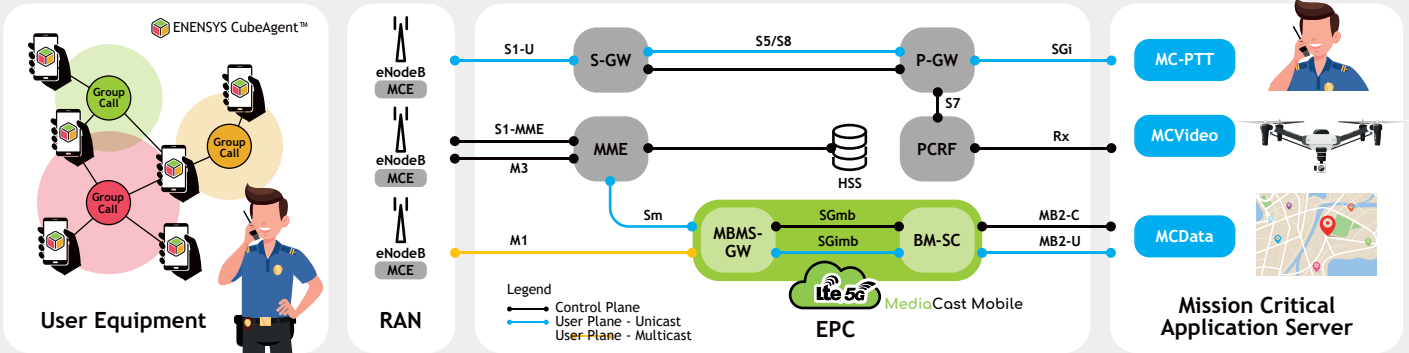
Thanks to ENENSYS CubeAgent™, you can rely on a unique Middleware that allows you to use the same application on all your phones, whether they are Ruggedized Devices or commercial smartphones (e.g. Samsung S21, S22...).

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MediaCast Mobile

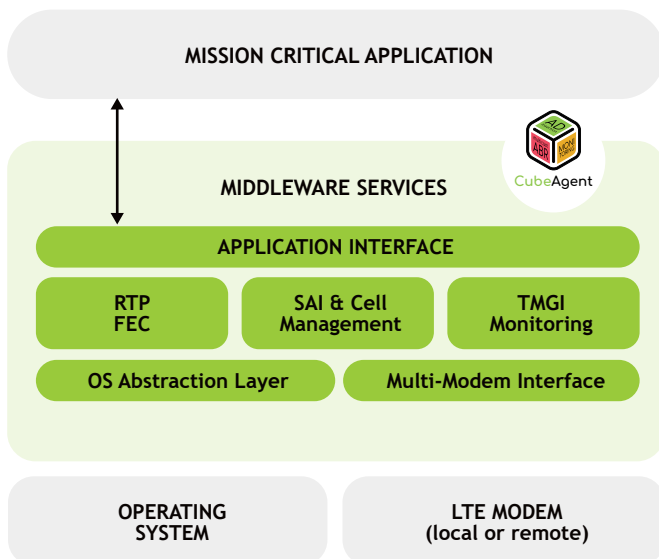
- ✓ Standard 3GPP BM-SC (Broadcast Multicast Service Centre) and MBMS-GW functions operating in the core network (EPC)
- ✓ Monitors and controls eMBMS bearer created by the MCS application
- ✓ Group call data traffic is converted into multicast and sent over the network
- ✓ Provides interfaces to application server, core & radio network and end-user devices



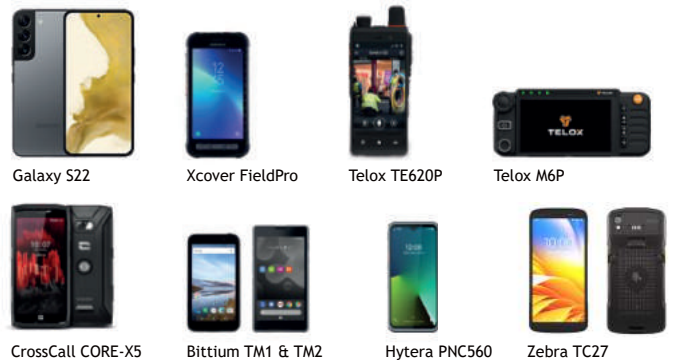
CubeAgent

- ✓ Standard 3GPP Middleware to be installed in 4G/5G smartphones
- ✓ Controls and Monitors eMBMS Bearers
- ✓ Manages Modem & Metadata
- ✓ Interfaces GCS-AS Front End

CubeAgent CC Architecture



A non-exhaustive selection of smartphones integrated with CubeAgent



ENENSYS Technologies
 4A rue des buttes | CS37734 | 35577 CESSON-SEVIGNE | FRANCE
 Tel: +33 (1) 70 72 51 70 | Email: sales@enensys.com

