



NLV-100: Vehicle installed LTE Command Center

LTE system that offers advanced data services on the move, installed on a vehicle.

Overview

Ensuring communication among first responders, especially during a crisis situation, is a major challenge for public safety agencies. NYBSYS LTE Vehicle (NLV) is a mobile communication center that is designed to establish interoperable communications in emergency situations. The NLV is command vehicle designed to respond natural disasters and other catastrophes when normal communications infrastructure has been degraded or destroyed.



Ready for 5G and IoT

NLV-100 solution is based on 3GPP 4G LTE by design but is ready for the upcoming 5G standard which will be finalized in the near future. The LTE standard also already supports NB-IoT and LTE-M capabilities, that make the solution ready to answer Internet of Objects problematics. Both wideband and narrowband networks can be combined for a full range of use cases.

Specifications

Standard	3GPP release 14
Available Bands	Band 20, Full band 28, band 38
Power	2X20 WATT
LTE Security	AES, SNOW, ZUC Integrity and cyphering support, standard Milenage and TUAK authentication support, Cyphered HSS
I/Q CONNECTIVITY	2 CPRI V6.0
Users	1000 actives on average call profile
Range	up to 2km
Lightweight	20KG
Power Supply	24VDC Batteries
POWER Consumption	240 W
MAX .Nb CARRIERS PER TX/RX	2 (1,4 , 3 , 5 , 10 , 15 , 20MHz)



LTE at the Command

With the adoption of LTE mobile broadband technology, teams can benefit from the advantages of fast and reliable broadband data and real-time video services, opening up new communications possibilities for critical missions and disaster situations.

Why an LTE network?

•**International standard** LTE is the basic brick needed to build a 4G / 5G radio network. This is an international standard normalized by the 3GPP consortium that brings a lot of advantages.

•**Large ecosystem** LTE is then adopted by a large ecosystem both at the level of infrastructure, services and terminal. As it is a purely IP-based application technology it gives it a highly simplified implementation.

•**Quality of service** The technology provides users with high application rates, depending on spectrum and bandwidth availability, as well as the environment. LTE supports a professional QoS, it has been adapted to mission-critical and real-time services. Connection times and transit times have become equivalent to fixed networks and thus offer the possibility of supporting new services, such as real-time critical data exchanges.

Why a private network?

•**Resource guarantee, at any time** No problem to guarantee the availability of the network, it is YOUR network, with your dedicated resources

•**You control the network** No waiting for commissioning, it's your network. You totally control who has access and when.

•**No dependence with a public operator** You are your own operator and therefore decide at any time when and where to start your network.

•**Resilience in a crisis** You can secure your own network with another system to set up a resilient configuration.

Main features

•**Extreme compactness** that makes the system one of the easiest to deploy in the market

•**Lightweight.** Less than

•**Easy and fast deployment:** less than 90sec to start

•**Broadband network** that allows high-speed rate connections up to 100 Mbit/s

•**Range:** up to 2 km

•**Comprehensive security mechanisms** for protected streams and encryption.

•**Native integration** of all communication functions suitable users: Push To Talk, Video multicast, group call functions, geolocation, point-to-point telephony...

Key features

- Range of up to 2 km
- Encrypted audio , video and data comms
- 1200 Mbps DL and 150 Mbps UL
- AES encryption
- Built-in PTT and COM Interop
- Situational dispatch system
- SATCOM Uplinks
- A complete LTE system with eNodeB base station (with software -defined core),
- Wideband Radiohead and ePC core network all in one.
- The NMS function allows the administration of all system parameters from a single console.
- Full Mission-Critical Services set: Push-to-Talk,
- group communication,
- geolocation and associated mapping
- push-to-share group communication
- VoIP telephony, messaging, pre-emptive emergency call
- Video multi-cast (eMBMS).
- USB 3.0 access allowing data transfers if necessary.
- Gigabit Ethernet access
- 2 (MIMO) antenna connectors + 1 GNSS antenna connector
- 1 power connection



Mobile Command functions

The NLV offers next generation command vehicle for first responders, military and other organizations that have been affected by a catastrophic event and require mission-critical networking to recover normal operations. For any disaster response missions, system is ready to connect all communication systems using supported gateways and offers high speed data bandwidth and analytical system for continuous operations of the communication and collaboration without impacting already challenged resources. The system offers seamless operation with police, fire, emergency medical services and other responders within an incident command system or unified command structure. The system can be an effective tool for variety of incidents, including hurricanes, tornadoes, floods, earthquakes, wildfires and man-made disasters.

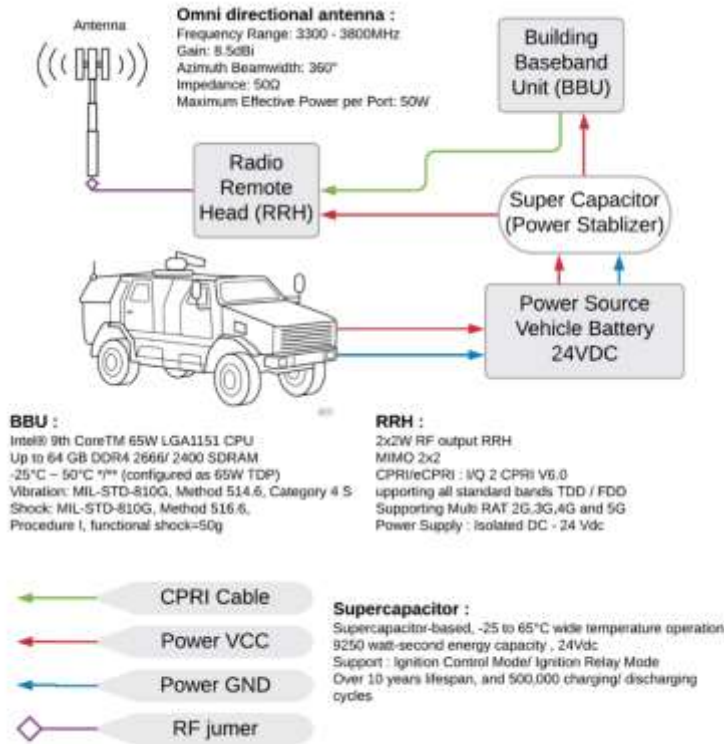


Field dispatch functions

The NLV utilizes Sentra Comm interoperability and dispatch system with push to talk mobile applications, a range of interoperable communications beyond traditional push-to-talk (PTT) radio. The system offers to:

- Engage and employ all resources on scene, regardless of where those resources geographically reside
- Interoperate with existing communications systems while providing a path to emerging network-centric communications systems
- Offers complete radio integration with DMR/TETRA / P25 radio systems and integrates with LTE based eMBMS protocol supported PTT functions together with voice and video calling features in the entire coverage area.
- Additional manpacks can be deployed to extend the coverage and system offers complete handover from manpack to vehicle deployed system





Connectivity

The Nybsys NLV has multiple options for Internet connectivity, including satellite, cellular, and landline. It can be configured to failover from one connectivity source to another, providing a high level of fault tolerance and the most efficient use of bandwidth.

- The 1.8 meter satellite dish provides high throughput satellite (HTS) bandwidth for voice, video, and data applications that require access to the Internet or other remote networks. It delivers these advantages:
- Auto-acquire capability of the control unit which eliminates the need for the vehicle crew to manually point the dish to the correct azimuth and elevation
- Dual-satellite operation for look-angle diversity and true network redundancy.

Radio and Voice Interoperability

Responders often struggle with different frequency bands and proprietary radio protocols. NybSys Sentra PTT uses the Land Mobile Radio (LMR) feature set in Cisco IOS software and the numerous radio systems on the NLV to enable radio interoperability across all existing radio technologies.

Nybsys Servello Video Analytics

Video surveillance increases the situational awareness of field personnel and commanders by enabling them to observe nearby activities. The NybSys AI based Servello video analytics solution encompasses a suite of rules that can incorporate IP-based cameras to offer face detection, object tracking, loitering detection, entry /exit counts, stationary objects, even social distancing rules execution strategies.

Servello 1.0 is the AI-based security monitoring system which will help to take pre-active decisions just on time. It takes real-time feed from the camera and does exactly what it was directed to do. It can send direct notifications to you when any hazardous situation is there, it also can turn automatic alert systems on as well as



it can differentiate between the situations. So, the time to always keep an eye has ended. You tell what to do, our system will do the rest for you 24/7.



Modules/Products

- Face Recognition System (NybFace)
- Theft Detection System (TDS)
- Illegal Parking Detection (IPD)
- Crowd Monitoring System (CMS)
- Traffic Monitoring System (TMS)
- Suspicious Person Detection (SPD)
- Media Monitoring System (MMS)