

# NORDIC MOMENTS THAT MATTER

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DEPLOYABLE LTE "TACTICAL BUBBLE"  
SOLUTIONS

OCTOBER 12<sup>TH</sup> 2021

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# AGENDA

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## Introduction - 15:00

**Laust Michaelsen**

Senior Account Executive

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## DEPLOYABLE LTE "TACTICAL BUBBLE" SOLUTIONS - 15:05

**Clayton Payne**

Sr. Product Manager, Private Broadband

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## Q&A - 15:25



# WE HELP PEOPLE BE THEIR BEST IN THE MOMENTS THAT MATTER

We provide the solutions that connect those in need to those who can help.  
To find efficiencies, prevent crises, save lives.



# MISSION-CRITICAL ECOSYSTEM

Video Cameras, Recorders, Encoders  
Body Worn Cameras  
In-Car Video  
Access Control  
Unusual Motion Detection  
Appearance Search  
License Plate Recognition

LMR  
MISSION CRITICAL  
COMMUNICATIONS

CUSTOMERS  
CITIZENS

VIDEO  
SECURITY &  
ACCESS CONTROL

COMMAND  
CENTER  
SOFTWARE

MANAGED &  
SUPPORT SERVICES

24/7 Network Ops Management  
Cybersecurity Monitoring  
Service Continuity  
Risk Management  
Multi-technology Integration  
Comprehensive Disaster Preparedness  
Outcome-based Service Levels

TETRA  
APCO P25  
Digital Mobile Radio  
Public Safety LTE Networks  
Purpose-built Broadband Devices  
Broadband Push-to-X  
LMR/LTE Interoperability

Emergency Call Management  
Voice and Computer Aided Dispatch  
Command & Control  
Field Response & Reporting  
Records and Evidence Management  
Analysis and Investigations  
Community Engagement



# DEPLOYABLE LTE SOLUTIONS

# OUR CUSTOMERS ARE SAYING: WE NEED BROADBAND COMMON REQUESTS AND CHALLENGES

## TYPICAL REQUESTS

- **Faster** response with **real time data** access at the edge
- **Interoperability** between agencies
- Expanded **coverage** and reliability
- Dedicated network bandwidth (**Capacity**) with priority and preemption (**QoS**)
- Integrated applications for real time situational awareness (**video, IoT, drones, analytics, AI**)
- Data privacy and **security**
- Network **Control**
- Evidence collection

## THE CHALLENGES

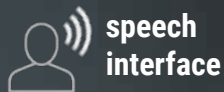
- **Spectrum**
- **Funding (costs)**
- **Partnerships**
- **Standardization** (MCPTT, MCDATA, IOP with legacy networks, DMO)
- **Governance/Planning/Policies** (**Operating procedures**)
- **User Training**
- **Testing and deployment timeline**

# NEXT GENERATION PUBLIC SAFETY

## CONNECTED FIRST RESPONDER



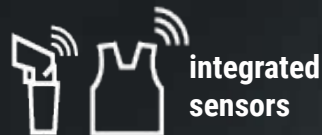
MC voice



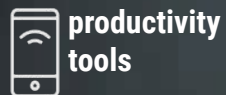
speech interface



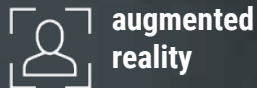
location



integrated sensors



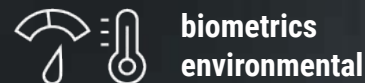
productivity tools



augmented reality



camera



biometrics environmental

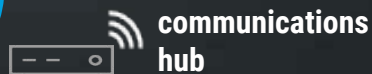
## CONNECTED VEHICLE



location



camera



communications hub



ANPR



telematics

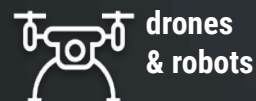


MC IoT



location

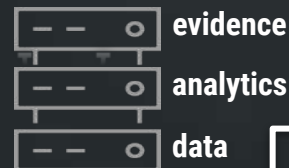
## CONTROL ROOM



drones & robots



bulk video



evidence

analytics

data

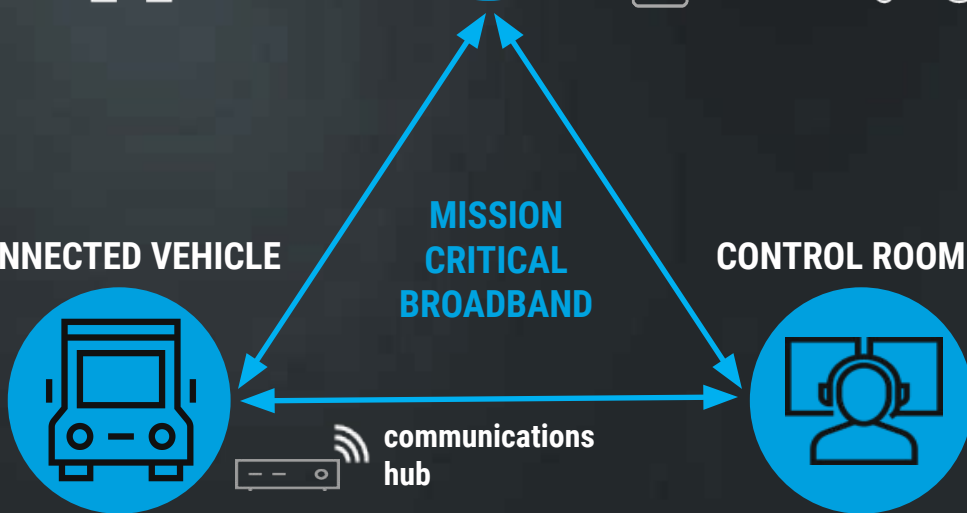


social media

Internet

email

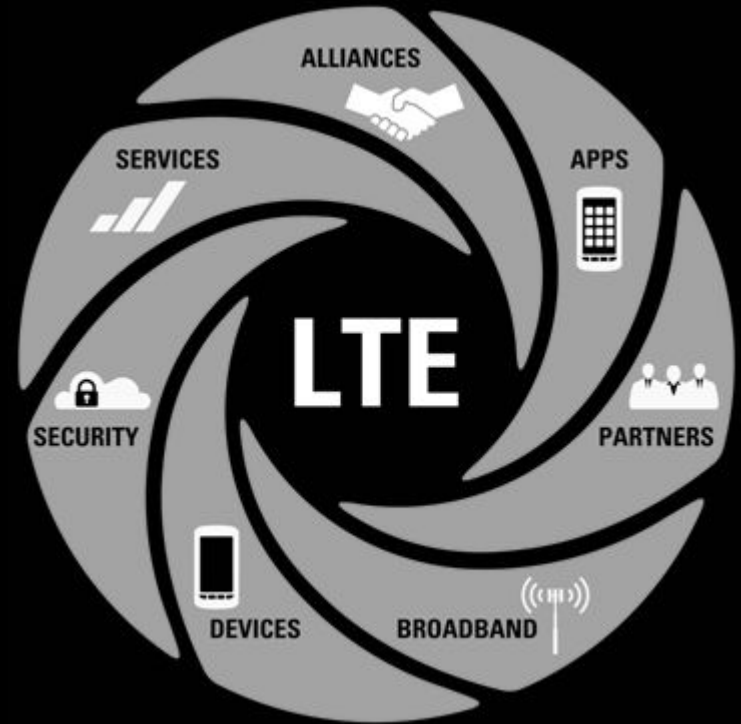
MISSION  
CRITICAL  
BROADBAND





# MSI BROADBAND INVESTMENT

- ★ 10+ YEARS OF PRIVATE BROADBAND INVESTMENT
- ★ INVESTMENT IN NETWORK, APPLICATION, AND DEVICE SOLUTIONS
- ★ ACQUIRED 3GPP CORE SOFTWARE COMPANY - ENABLES MSI OWNED 4G/5G CORE OFFERING
- ★ ULTRA PORTABLE SOLUTION
- ★ DEVELOPED A COMMERCIAL MARKETS FOCUSED OFFERING: NITRO CLOUD CORE & RAN
- ★ DEVELOPING A CRITICAL INFRASTRUCTURE BROADBAND FOCUSED SOLUTION: MULTI RAN SUPPORT





# BROADBAND VERTICALS

## Military/Defense

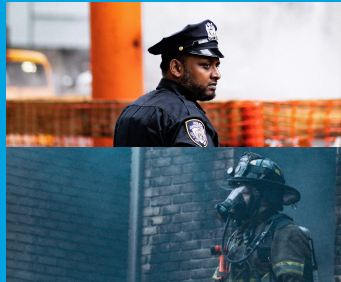
MoD / DoD  
MoI  
Special Forces  
National Security  
Border Security



**Deployable Solutions:**  
COW's, SOW's, Backpack  
Secure and Resilient  
Purpose Built Devices

## Public Safety

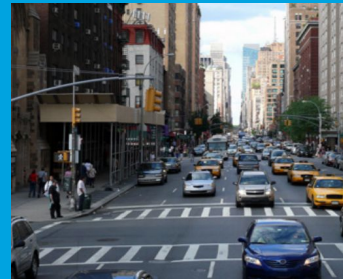
Police  
Fire  
EMS  
Provinces  
Municipalities



**Flexible Deployment Model**  
Purpose Built Devices and  
Applications  
Secure and Resilient

## Public Services

Public Works  
Utilities  
City Surveillance  
Critical Infrastructure



**Flexible Deployment Model**  
Secure and Resilient  
Devices and Applications

## Private Enterprise

Transportation  
Mining  
Oil and Gas



**Flexible Business Model**  
Secure and Resilient  
Devices and Applications

# PRIVATE BROADBAND TRIALS AND SUCCESS CASES



## MIDDLE EAST CUSTOMER

(CURRENT TETRA LMR)



## HALTON/PEEL REGION CANADA

(CURRENT ASTRO P25 LMR)



## MIDDLE EAST CUSTOMER

(NEW TETRA LMR)



## HOME OFFICE UNITED KINGDOM

(CURRENT TETRA LMR)



## FIRSTNET UNITED STATES

(CURRENT ASTRO P25 LMR)



## LACR MOD

(CURRENT ASTRO LMR)



## UNITED NATIONS

(CURRENT MOTOTRBO & LMR)



## APAC MOD

(CURRENT TETRA LMR)



## XCEL ENERGY

(CURRENT ASTRO P25 LMR)

# LXN CORE PORTFOLIO SEGMENTATION

## BROADBAND INFRASTRUCTURE FOR ANY SEGMENT

### ULTRA PORTABLE



- Localized "Bubble" Of Coverage
- Network in a box
- Single eNodeB, 100 users
- Fast Setup, Compact Design And Versatility
- IP65 Resiliency



LXN 505

### ENTRY LEVEL SYSTEM



- Affordable entry level full system
- Full Geographic Redundancy
- Operation Support System
- Scalable and Versatile



LXN 7100

### DEPLOYABLE



- Macro Range, Expanded Coverage, Disaster Recovery
- Up to 50 sites and 2000 users
- System on Wheel (SOW)
- Cell on Wheel (COW)
- Cell on Light Truck(COLT)



LXN 6000

### MACRO SYSTEM



- Regional and nationwide System
- Virtualized, Scalable sites and users
- Managed Services
- Link Level Redundancy
- Full Geographic Redundancy



LXN 7100

Users capacity based on standardized call model

# THE CHALLENGE

ACCESS TO HIGH SPEED, REAL-TIME DATA WHEREVER YOU ARE



REMOTE FOREST FIRE



SPORTING EVENTS



MULTI-AGENCY RESPONSE



MILITARY TEAM



DISASTER



GAP COVERAGE

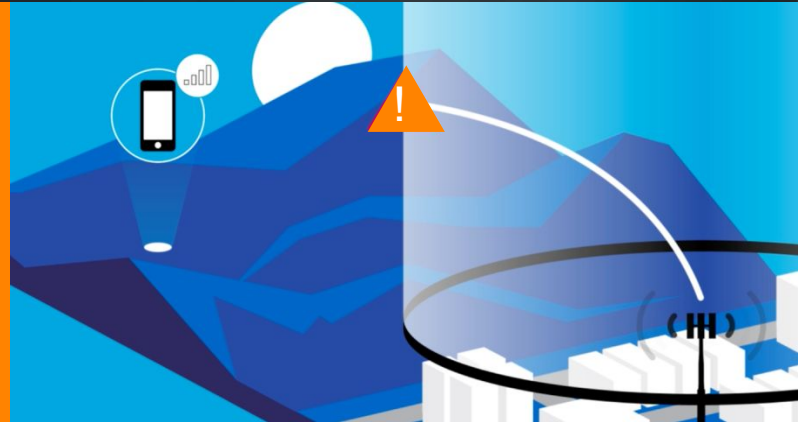


DEDICATED NETWORK

LIMITED COVERAGE AND OR CAPACITY

## THE RESULT?

POOR SERVICE  
OR NO SERVICE AT ALL





# LXN 505 - TAKE THE NETWORK WITH YOU AND BE READY FOR WHAT'S HAPPENING NOW AND WHAT HAPPENS NEXT

## ALL-IN-ONE SYSTEM

Ultra Portable LTE system with B28 eNodeB, Evolved Packet Core, and optional applications.

## FAST AND EASY SETUP

Create an almost instant LTE network for you and your team. From power on - to operational in under 5 minutes.

## COVERAGE AND CAPACITY

Create an on-demand LTE bubble up to 2.5 kilometers\* radius for up to 100 subscribers.

## VERSATILITY

Deploy a variety of form factors - backpack, tactical pelicase, vehicular or fixed to a pole or building.

## DESIGNED FOR HARSH ENVIRONMENTS

The IP65, solid-state, fanless, ruggedised design withstands heat, cold, rain, humidity, dust and vibration.

## APPLICATION HOSTING

The embedded application server can host optional PTT and whiteboarding applications locally for situations where backhaul cannot be established.

## MINIATURIZED AND PORTABLE

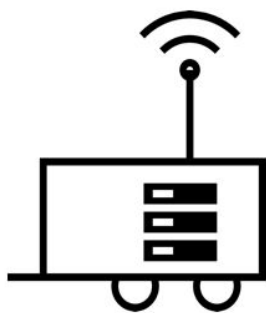
The compact size is perfectly suited for bringing the network with you to establish LTE broadband connectivity anytime, anywhere.



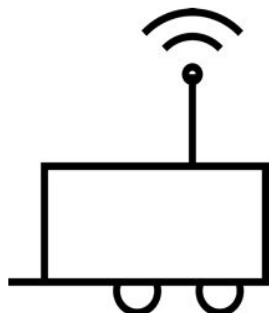
CE Type accepted

# LXN 6000

DEPLOYABLE LTE SOLUTION FOR FAST CONNECTIVITY WHERE AND WHEN YOU NEED IT



**SYSTEM ON WHEELS (SOW)**



**CELL ON WHEELS (COW)**

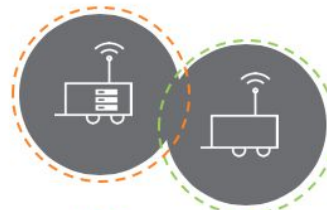
**EQUIPMENT**

Base station, evolved packet core, applications, connection capabilities for backhaul, antenna and ancillaries.

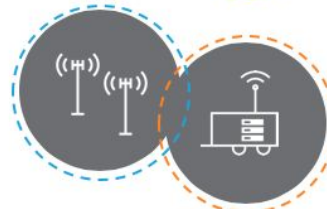
Base station, connection capabilities for backhaul, antenna and ancillaries.



**System on Wheels (SOW)** provides standalone broadband

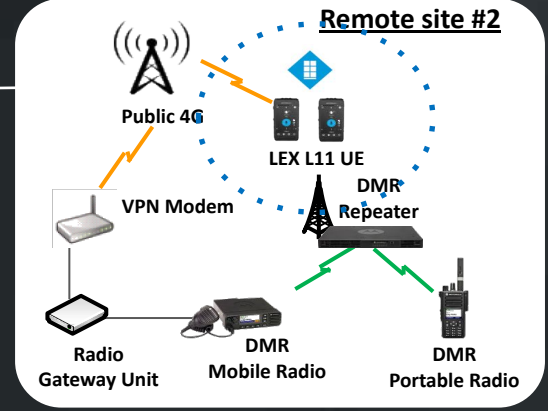
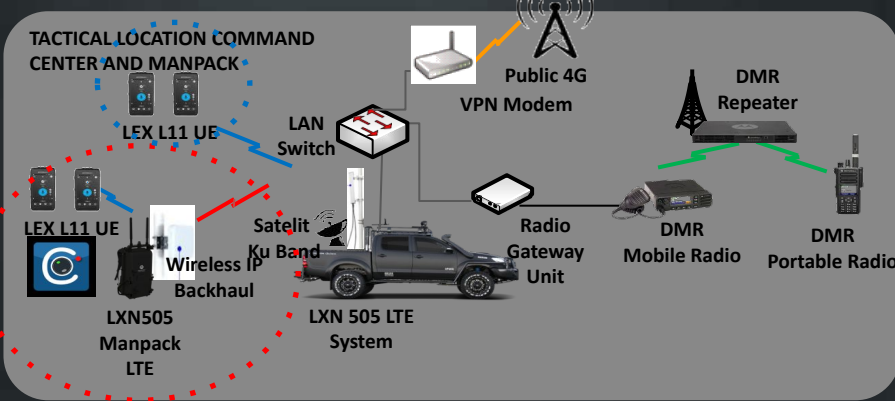
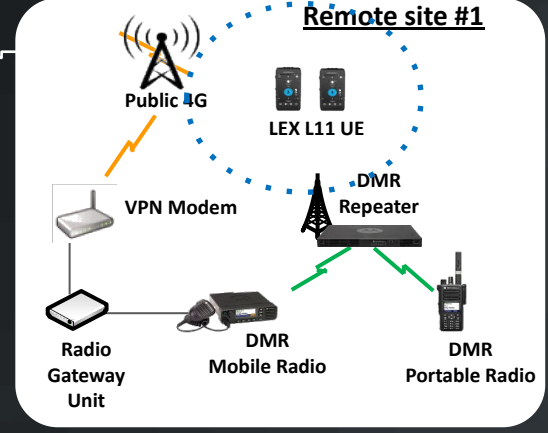
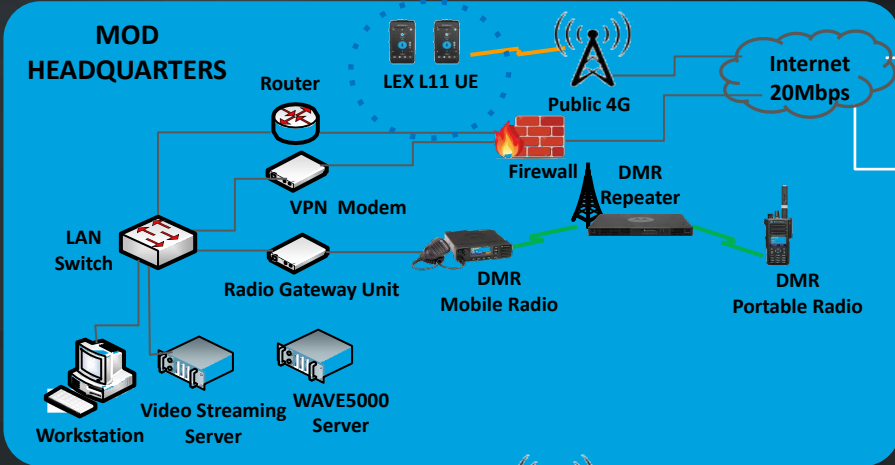


**Cell on Wheels (COW)** connected to SOW enhanced LTE broadband coverage and capacity



**SOW connected to fixed LTE network** to increase broadband coverage and capacity

# CASE STUDY: APAC MOD LMR IOP & VIDEO STREAMING



# 5G EVOLUTION



Bulk video



Augmented reality



Drones and robots



Pervasive IoT

## 100x THROUGHPUT

4G: ~100 Mbit/sec

5G: ~10 Gbit/sec

## 10x DEVICE DENSITY

4G: ~100,000/km<sup>2</sup>

5G: ~1,000,000/km<sup>2</sup>

## 10x LESS LATENCY

4G: ~10 ms

5G: ~1 ms

## HIGHER FREQUENCIES



4G: 700 MHz

5G: 3.5 - 35 GHz

## SMALLER FOOTPRINT



4G: Street, block, neighborhood

5G: Building, venue, corner, room

## EDGE COMPUTING



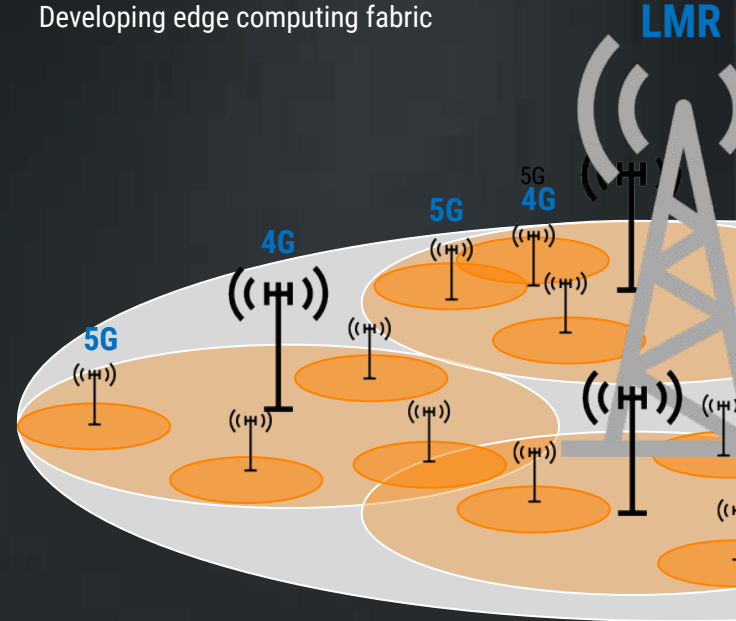
Code and data located closer to the edge

## FORESEEABLE FUTURE

5G coexisting with 4G and LMR

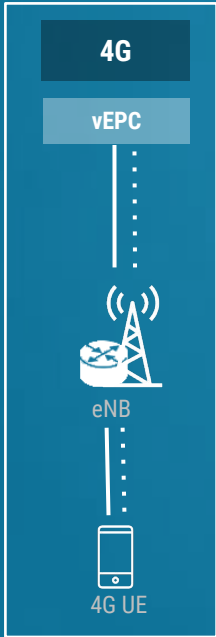
Pockets of 5G coverage, with 4G underneath

Developing edge computing fabric

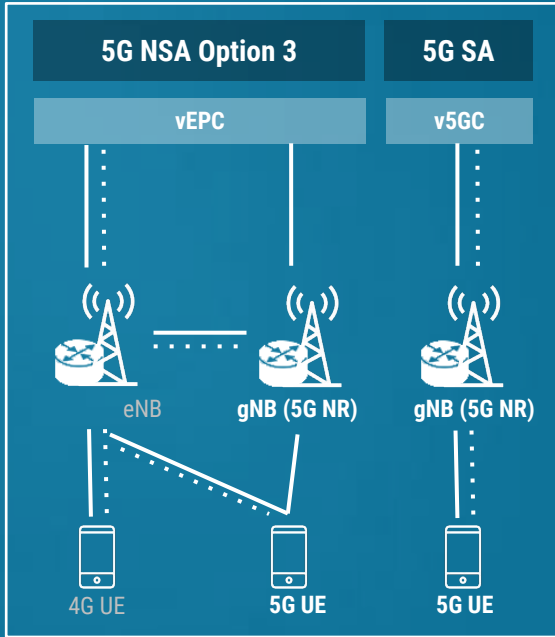




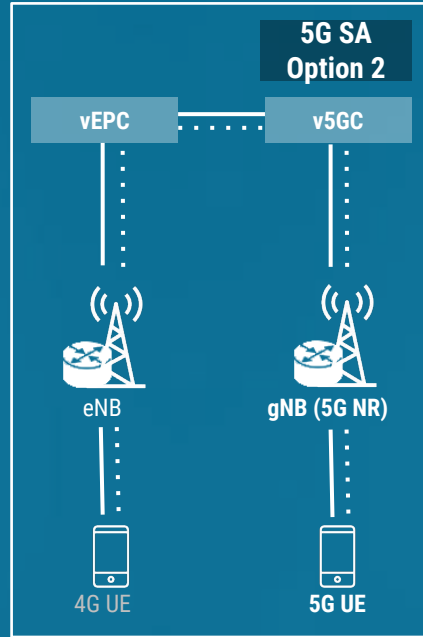
# 5G PRODUCT STRATEGY & OPTIONS OVERVIEW



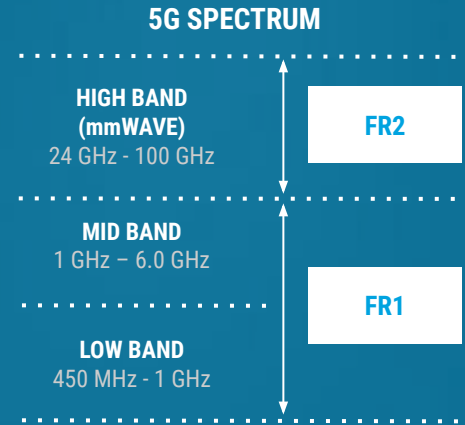
EXPAND 2021 +



NEAR TERM (2021-2022): Lab/Field Pilots



Future



A close-up photograph of a person wearing tactical gear, including a black vest with an American flag patch and a Motorola radio. The person is wearing black tactical gloves and holding the radio. The background is blurred, showing an outdoor setting with buildings and trees.

# Thank You!

## Questions & Answers



EVERYTHING WE DO COMES  
BACK TO OUR PROMISE

**WE INNOVATE TO  
MOBILIZE AND  
CONNECT PEOPLE  
IN THE MOMENTS  
THAT MATTER**

# PREVIOUS SESSIONS IN NORDIC MOMENTS THAT MATTER

- MAKE THE RADIO WORK FOR YOU - **MXP600 ACCESSORIES**
- **VIDEO** IN THE MISSION CRITICAL ECOSYSTEM
- **TETRA AND MISSION CRITICAL BROADBAND** ON COLLABORATION AND EVOLUTION
- THE **CONNECTED** FIRST RESPONDER
- NEXT GENERATION **CONTROL ROOMS**
- APPLIED **BODY-WORN VIDEO**
- **VIDEO ANALYTICS**, IT'S NOT ALWAYS ABOUT CAMERAS
- **MANAGED SERVICES** - NØDNETT UNWRAPPED
- **WAVE PTX BROADBAND PTT** & **EVOLVE** LTE HANDHELD
- **CAD & CONTROL ROOM SOLUTIONS**
- **WAVE PTX APPLICATIONS**

REPLAYS AVAILABLE ON THE NORDIC MOMENTS THAT MATTER WEBSITE

[https://www.motorolasolutions.com/en\\_xu/communications/nordic\\_moments.html](https://www.motorolasolutions.com/en_xu/communications/nordic_moments.html)

Hosted by Laust Michaelsen and Anders Ljunggren

Operated by Amanda Clifford

Design, production and promotion by Matthew Hetherington, Oliver Zuber and Jerry Nachmann