WEBINAR:
The data-centric future of Public Safety communications - Mission Critical IoT

European Market Assessment

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21|11|2023

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Based in London, Ildefonso is the lead analyst for the Critical Communications (LMR & Broadband) group, providing market data and strategic insights into the evolution of the international landscape of critical communication solutions for government public safety and private industrial connectivity.

The Internet of Things – definition

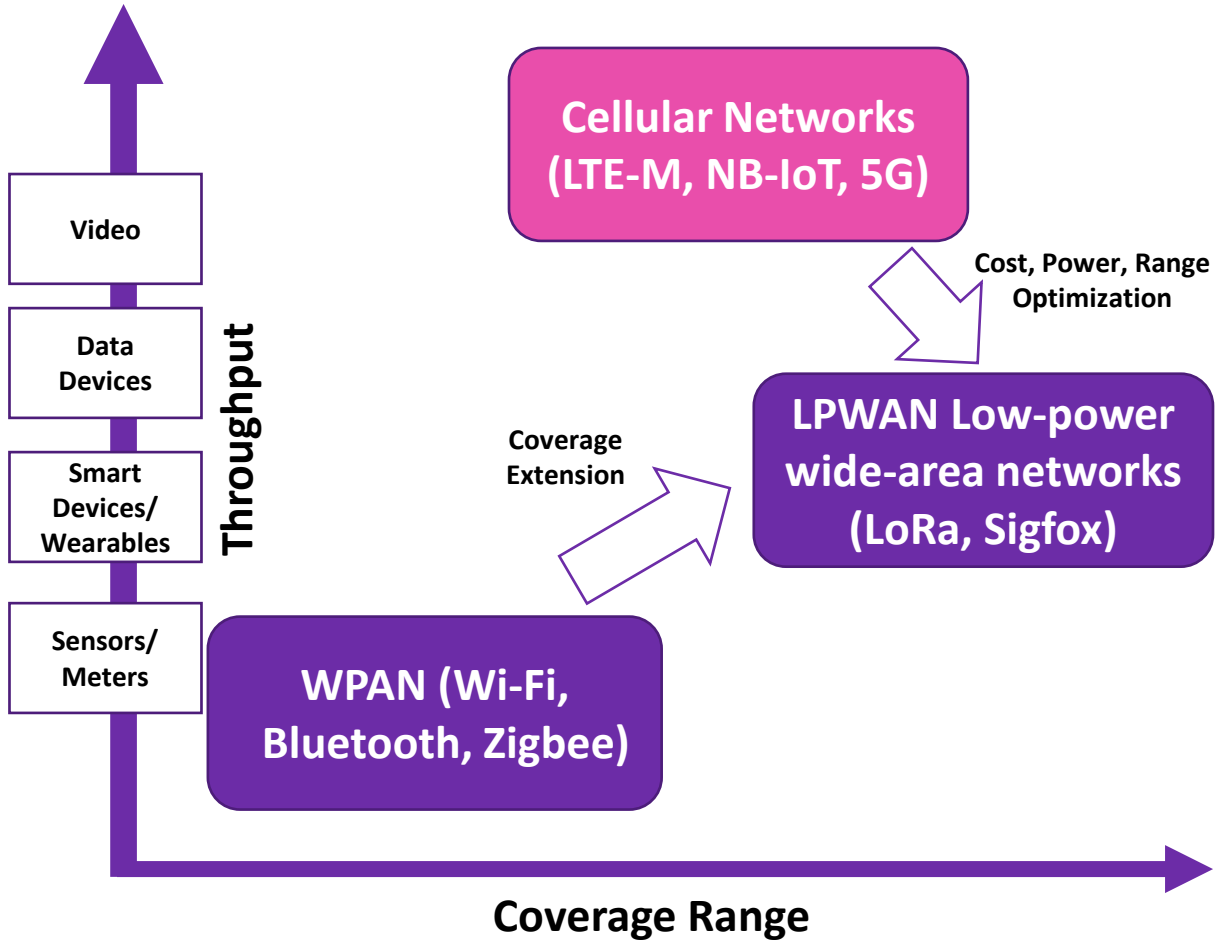
This study defines an IoT device as a device that has some form of embedded connectivity that allows the device to be directly connected to the internet (i.e., IP-addressable). These devices can include a range of sensors as well as some type of user interface (UI), but sensors or a user interface are not required under this definition.

For this Mission Critical IoT study- **Only devices independently connected to the broadband network were accounted for in this study.** While some definitions include those devices allowed to connect (tether) to an IP-addressable device, Tethered devices using protocols like Wi-Fi , Zigbee or Bluetooth were out of scope.

The Internet of Things technologies

Wireless technologies suitable for IoT connectivity:

- **Wireless Private Networks (WPAN)** Typical IoT technologies in this category are Zigbee, z-Wave and Bluetooth. Currently, most of the commercially available wearables rely on WPAN technologies.
- **Low Power Wide Area Networks (LPWAN)** are a cost optimization approach to IoT connectivity for wider coverage range and lower power consumption. These technologies use low-frequency spectrum bands like LoRA and Sigfox and TETRA connectivity.
- **Wide Area Networks (WAN)** are for larger geographical distances. Here we can find all Cellular IoT connectivity covered in this study (LTE-M, NB-IoT, 5G Cellular IoT)



Mission Critical IoT in Public Safety

Europe (excluding Russia)

- Western Europe
- Eastern Europe (excluding Russia)

Geography

Public Safety and Security:

- Law Enforcement
- Fire & Rescue
- Emergency Medical Services

Verticals

Cellular IoT systems:

- This study focuses on cellular IoT protocols which have higher data rates and lower latency than other Low Power Wide Area Networks (LPWAN) like NB-IoT and supports mobility.

Technology

Mission Critical IoT adoption drivers for Public Safety

Improved first responder safety 01

Shorter crisis response time 02

Operations efficiency or productivity gains 03

04 Cost saving

05 Greater insights into operation status

06 Improved sustainability

Forecasting methodology

Wearables

Installed base of PPDR users by European country (total wearable installed base)

Estimated penetration coverage by country to 2030 (project based)

Estimated average number of unique connected devices per user

Output: Installed base of wearable IoT connectivity chips in PPDR applications

Vehicles

Installed base of police, fire and ambulance vehicles by European country (total vehicle installed base)

Estimated penetration coverage by country to 2030 (project based)

Assumed one connectivity chip per vehicle

Output: Installed base of vehicle IoT connectivity chips in PPDR applications

Surveillance

Installed base of safe city cameras and drones by European country (total installed base)

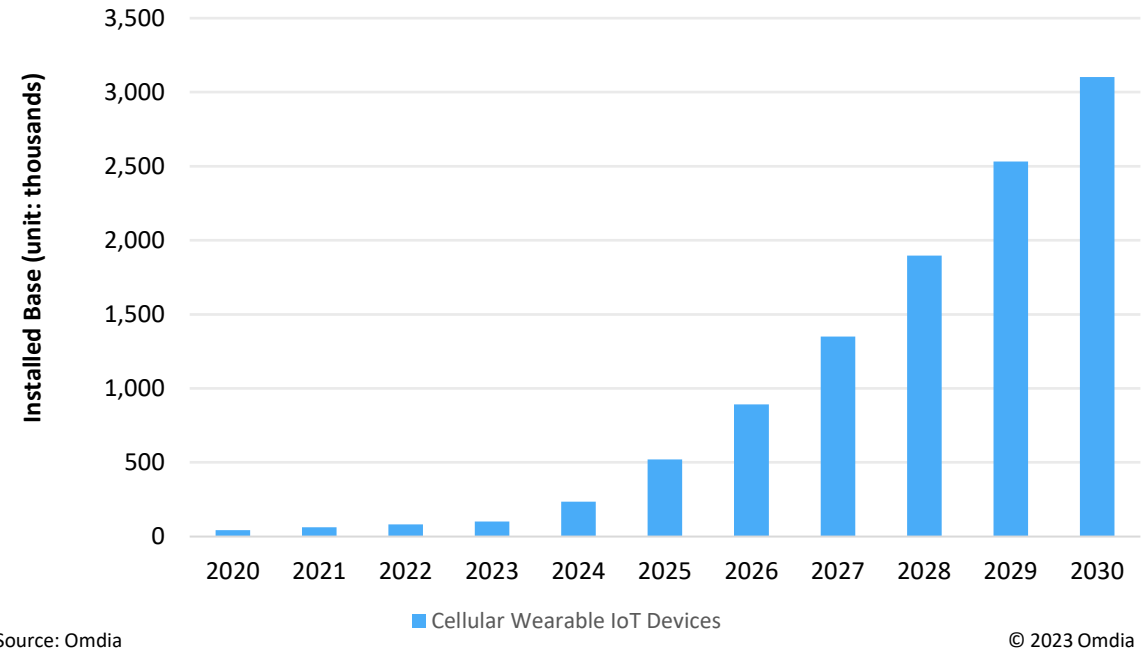
Estimated penetration coverage by country to 2030 (project based)

Assumed penetration of cellular cameras with live-streaming capabilities

Output: Installed base of IoT connectivity chips in surveillance applications

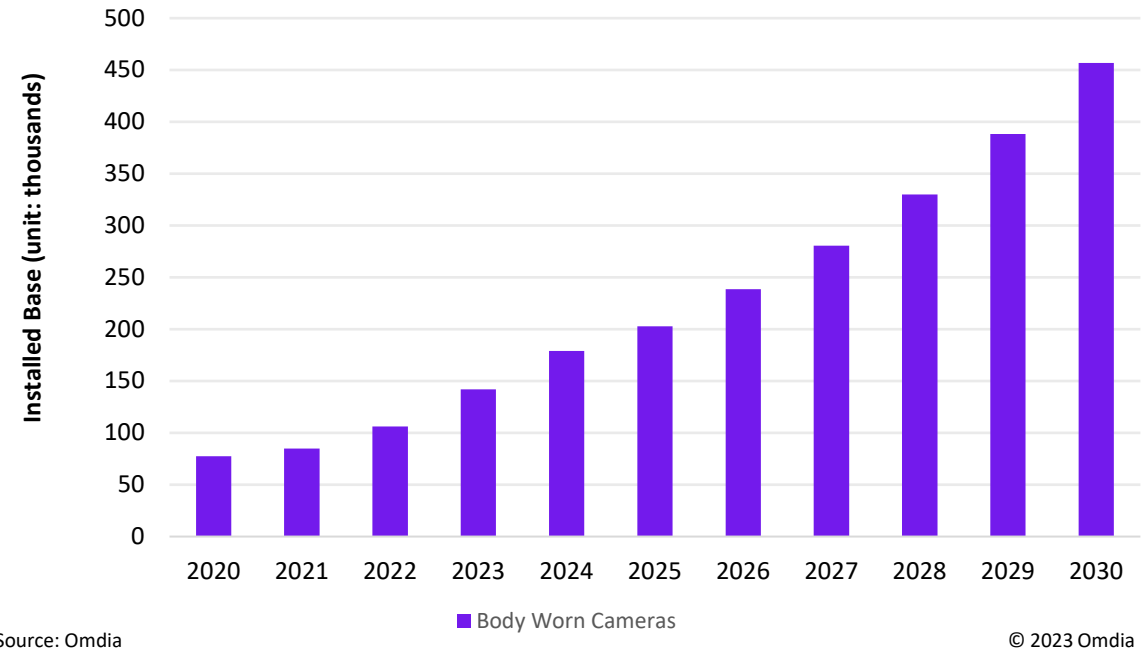
Mission Critical IoT systems in Europe

Cellular Wearables: Europe - Public Safety



Source: Omdia

Cellular-Enabled Body-Worn Cameras: Europe - Public Safety



Source: Omdia

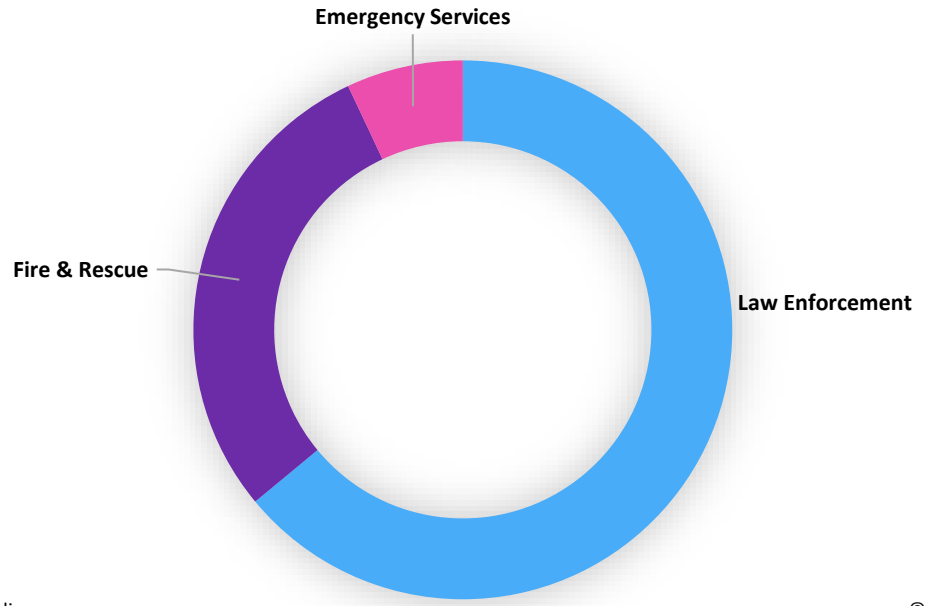
- The adoption of wearables will be linked to the development of critical communication broadband projects. Omdia foresees the adoption to be gradual and subject to trials and proofs-of-concept to justify ROI of necessary investments.

- Body-worn cameras (BWC) with live-streaming cellular capability have positive adoption potential in the market. The largest adopter of BWC in Europe is the United Kingdom, accounting for 27% of the European body-worn camera market, followed by France and Germany.

Mission Critical IoT European market – Public Safety

While Law enforcement represent the most connected public safety agency, Fire & Rescue users are individually the most connected with the largest number of connected devices.

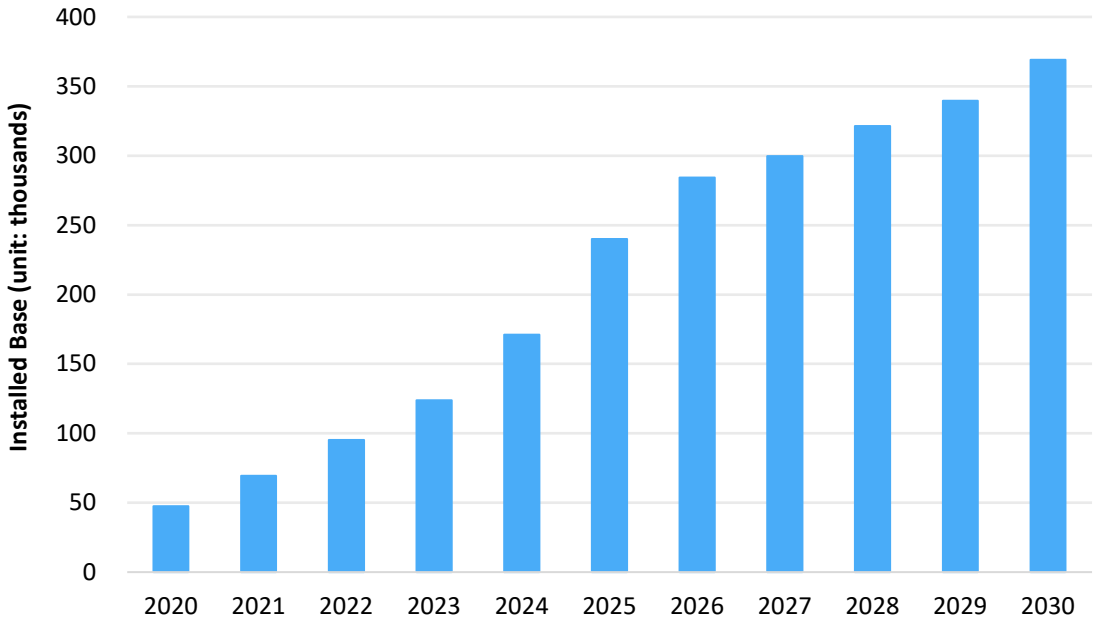
Public Agency Breakdown – 2030 Cellular IoT Connections



Source: Omdia

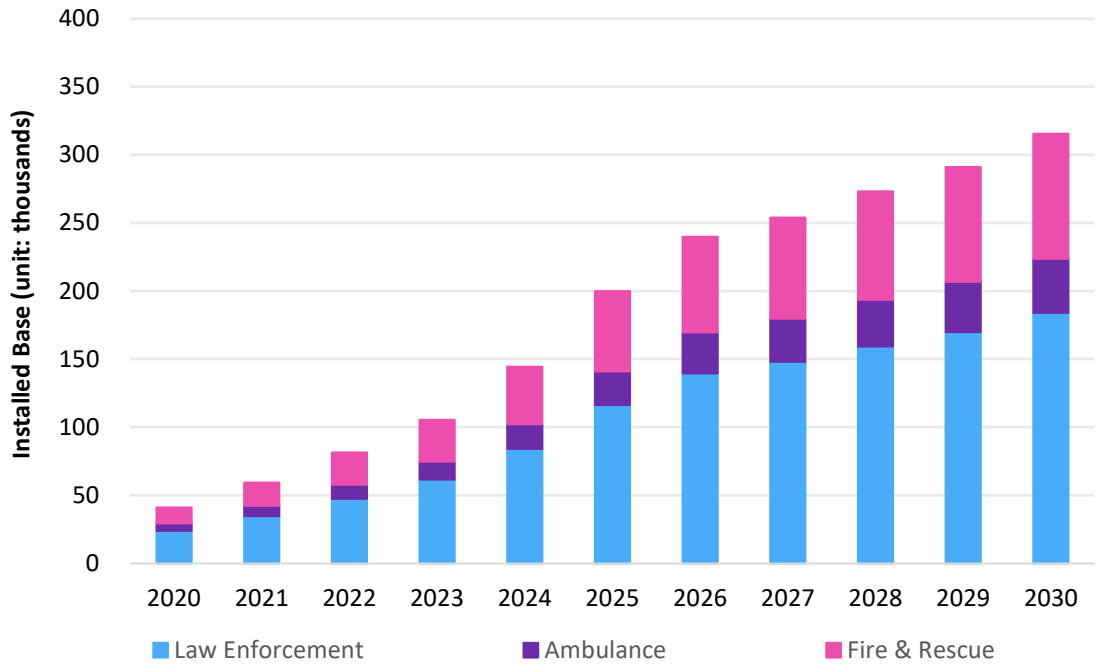
Mission Critical IoT in Europe – connected vehicles

European IoT Connected Vehicles



Source: Omdia

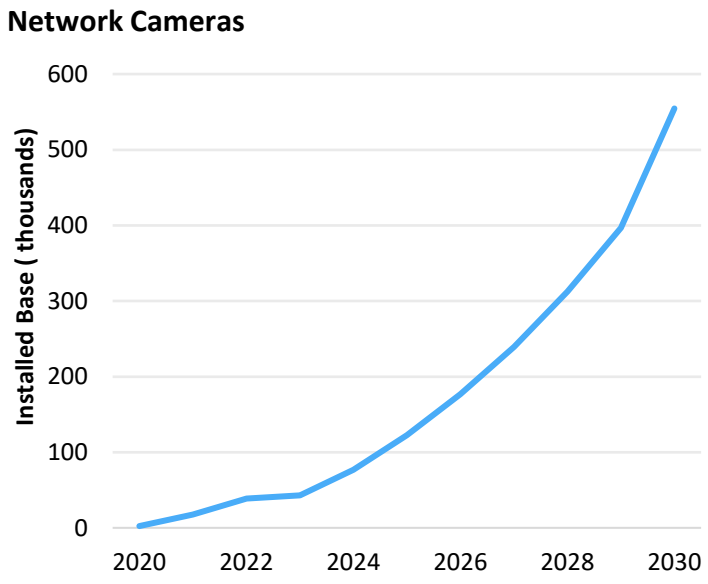
Connected Vehicle - Western Europe



Source: Omdia

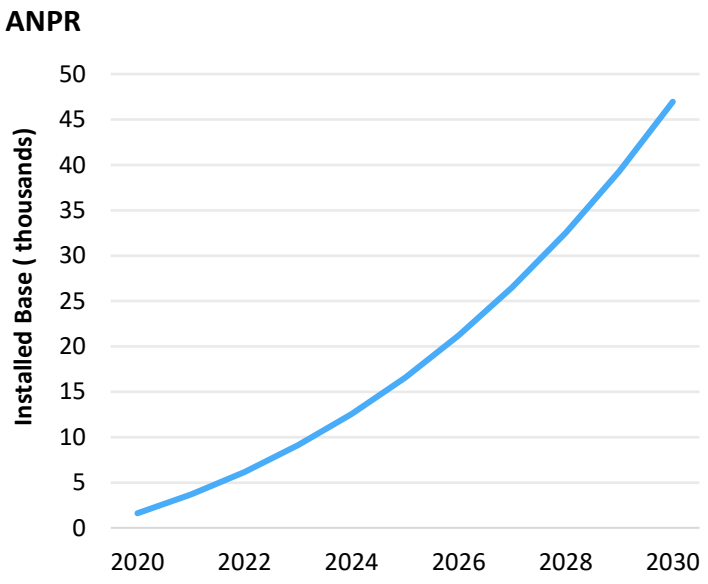
Mission Critical IoT in Europe – video surveillance

Network Cameras



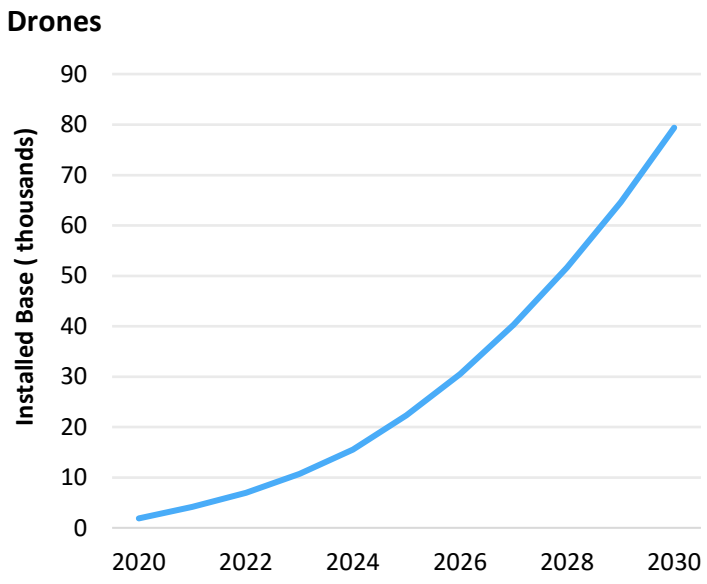
Source: Omdia

ANPR



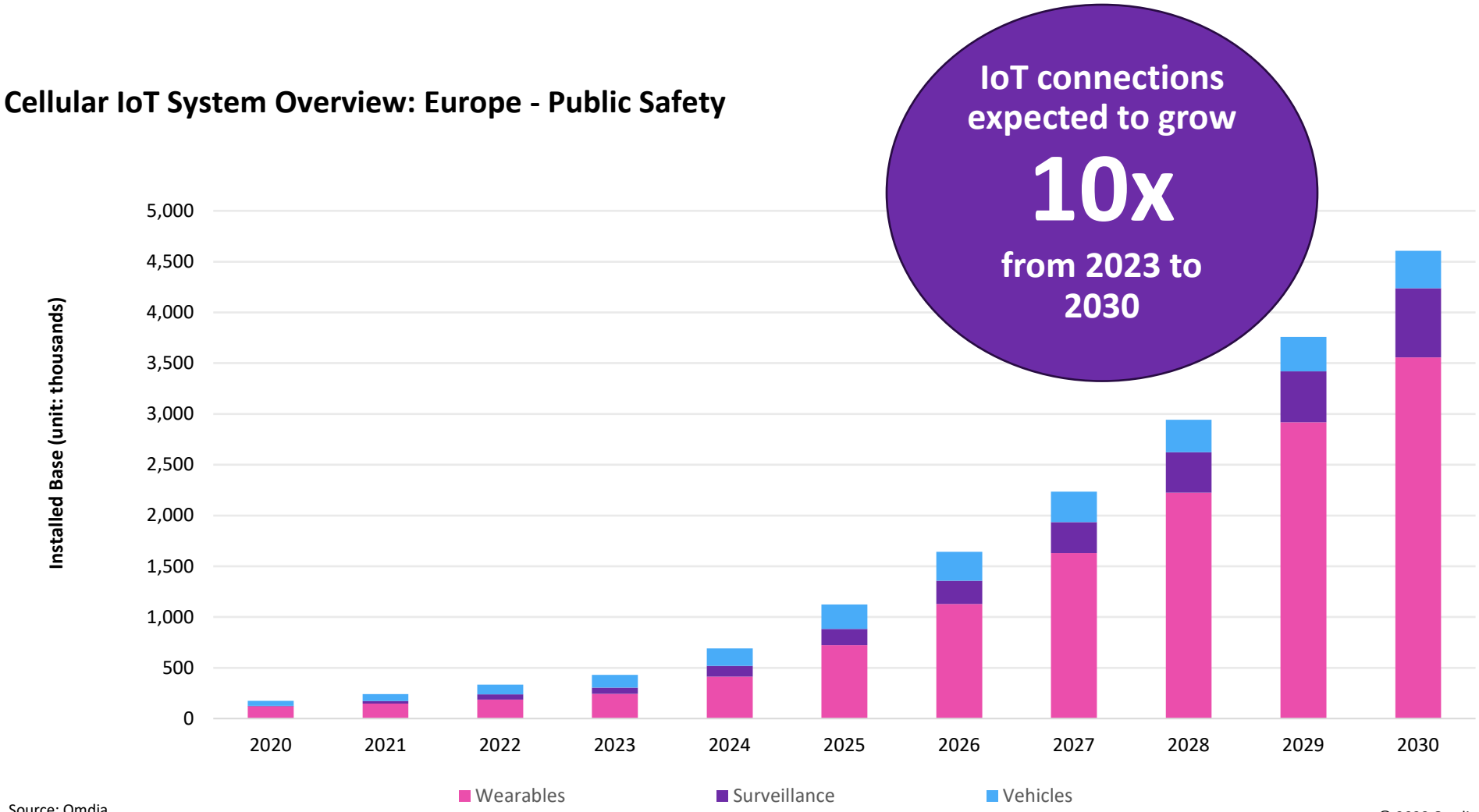
Source: Omdia

Drones



Source: Omdia

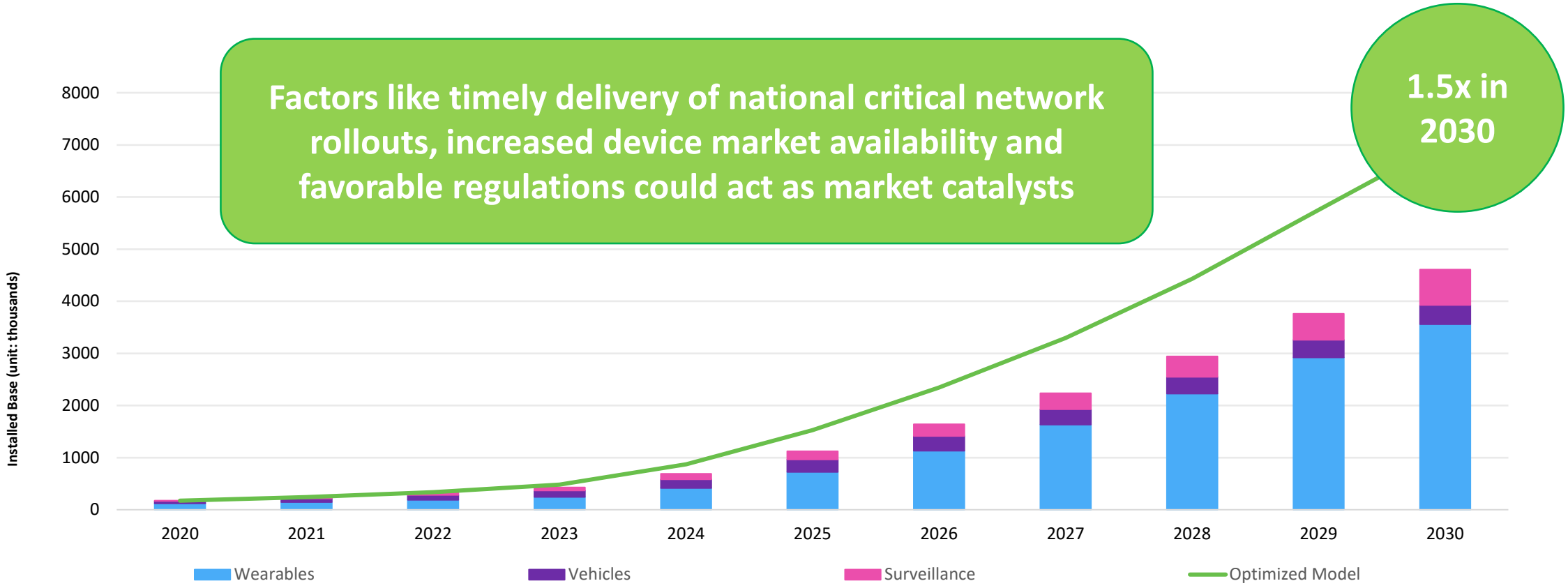
Mission Critical IoT market – European forecast



Source: Omdia

Mission Critical IoT market – accelerated adoption

Cellular IoT System Overview: Europe - Public Safety (Optimized Model)



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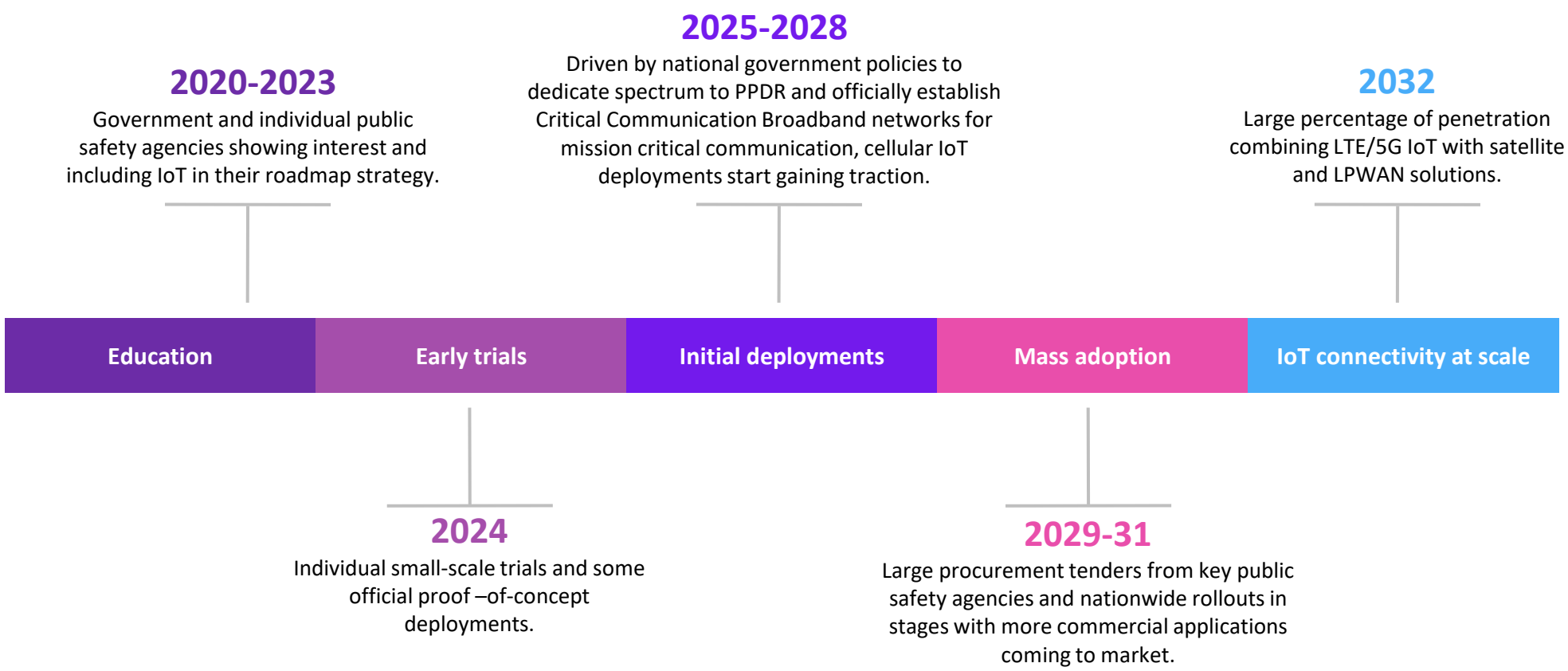
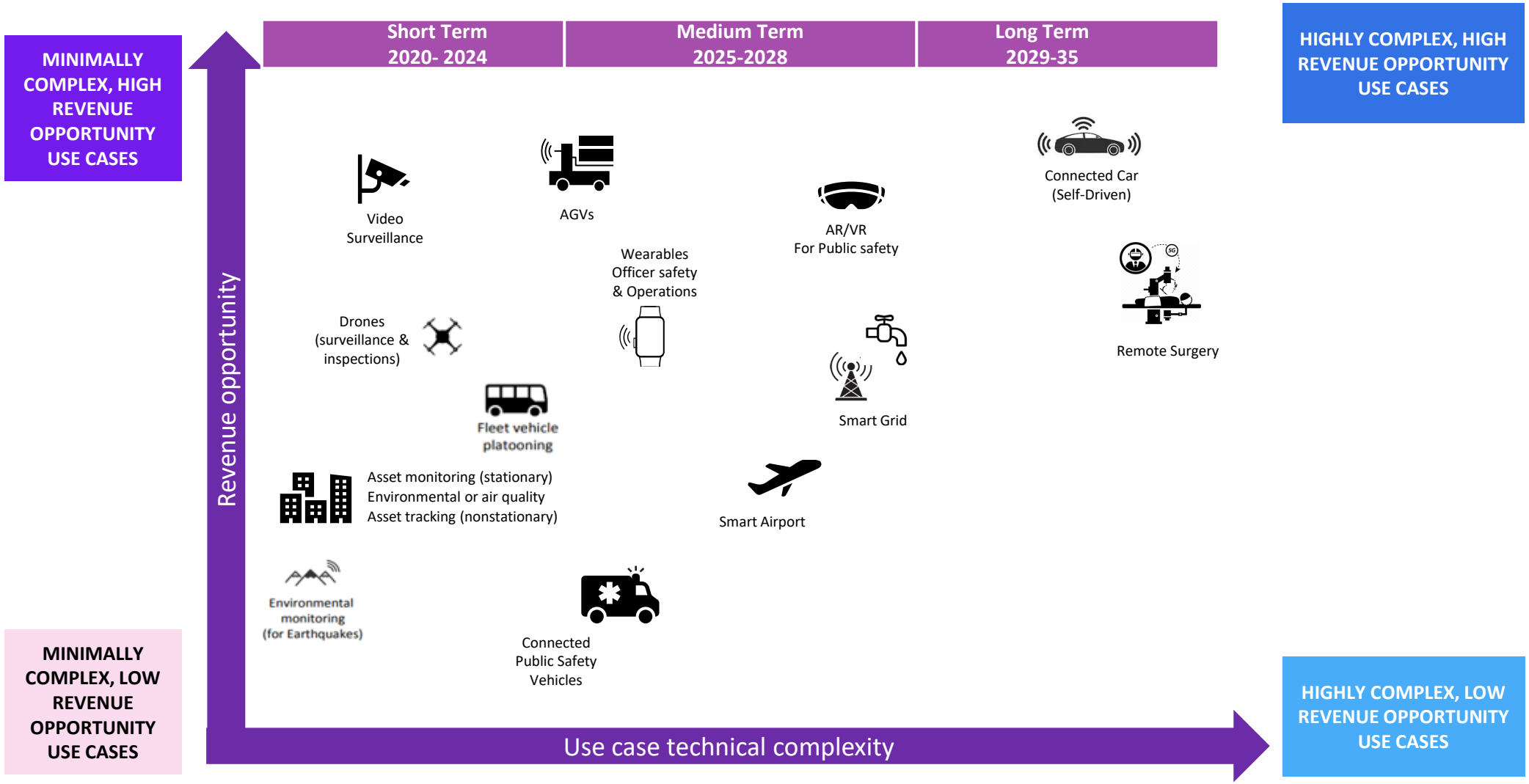
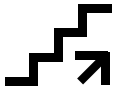
Adoption timeline



Mission Critical IoT - use case examples



Take-away messages from the webinar



- The adoption of Internet-of-Things (IoT) technology dedicated to the needs of mission critical users (in particular, public safety agencies in the context of connected officers) is a growing market that will surpass 4 million active connections by 2030 driven by the implementation of data-centric transformation of PPDR operations.
- Timely delivery of national critical network rollouts, increased device market availability and favorable regulations could act as market catalysts increasing the installed base up to 1.5 times surpassing 7 mission active IoT connections.

- The availability of spectrum resource dedicated to public safety operations will act as a catalyst to the adoption of video-centric IoT surveillance. Omdia estimates the fastest growth will be experienced in the video camera market at a 60.7% CAGR (Compound Annual Growth Rate) from 2020 to 2030.

- The concept of the “connected- officer” empowering first responders with real-time data feeds and automated sensing/trigger capabilities will represent the largest proportion of cellular mission critical IoT systems in public safety networks.

- Law enforcement is expected to be the “most connected” critical agency collectively: 64% of active cellular IoT connections will be in this category.

- Drones are expected to take a more prominent role in public protection and disaster relief operations (47.3% CAGR growth from 2020 to 2030).

Thank you!

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