

Mission Critical IoT market assessment – Europe

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The logo for OMDIA, featuring the letters 'O', 'M', 'D', 'I', and 'A' in a bold, sans-serif font. The 'O' is stylized with a dot on its left side, and the 'M' has a dot on its right side. The 'D', 'I', and 'A' are solid black.

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Introduction

Introduction

- Mission Critical Communications are in constant evolution to support their users under the most strenuous circumstances. Stakeholders in this industry definitely benefit from robust market data insights when making crucial decisions regarding the adoption of innovative technologies like the Internet of Things for Public Protection and Disaster Relief (PPDR) purposes. TCCA has decided to champion a comprehensive assessment on the IoT hardware, services and software market ecosystem that will shape the mission critical communications industry. This is within the context of strategic planning and to support strategic product and country initiatives.
- TCCA leads the global development and promotion of standardised critical communications solutions for professional users. TCCA provides the forum for governments, regulators, manufacturers, operators, end-users – for any and every stakeholder in the critical communications sector – to discuss, debate, deliver and evolve the market for the benefit of all.
- Similarly, at the OMDIA critical comms team, we empower our Mission Critical clients to make the best-informed decisions, utilizing decades of industry-leading expertise, proprietary data, tools, and strategies. Access unparalleled primary research resources and industry leader interviews With in-depth analysis, trends and forecasts, navigate the current technology markets and lead the transformation.
- The goal of this report is to analyse and forecast the size of the cellular IoT market that will support the mission critical needs of public safety agencies in Europe.
- Interested parties should reach out to TCCA or the author directly to collaborate in the expansion of this market analysis effort. Every voice from stakeholders will provide a valuable angle that will help create the balance in the ecosystem of how we plan for future demand, how we create the incentive for the industry to generate commercially viable solutions, and how we make sure that in the very near future first responders are enabled with data centric IoT devices and applications.

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

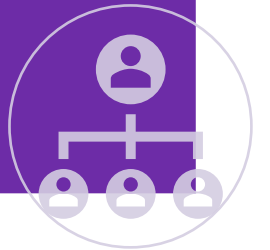
Verticals



Cellular IoT systems:

- This study focuses on cellular IoT protocols (4G and 5G) which have higher data rates and lower latency than other Low Power Wide Area Networks (LPWAN).

Technology



Regional Coverage

- **Europe:** Western Europe and Eastern Europe (excludes Russia).
- **Western Europe:** Austria, Benelux (Belgium, Netherlands, Luxembourg), Nordics (Denmark, Finland, Sweden, Norway), France, Germany, Greece, Ireland, Italy, Portugal, Spain, Switzerland, and United Kingdom.
- **Eastern Europe:** Albania, Armenia, Belarus, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia, and Ukraine.

Definitions

- **Internet of Things (IoT)** The IoT is not a specific device or technology. It is a conceptual framework, driven by the idea of embedding connectivity and intelligence in a wide range of devices. Omdia 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.
- **Connectable device** A connectable or IoT device is a device with some form of embedded connectivity that allows the device to be directly connected to the internet (i.e., IP-addressable), or allows the device to connect (tether) to an IP-addressable device.
- **IoT installed base** The cumulative installed base of IoT devices.
- **IoT wearable** Device capable of tracking biometric data, other type of sensing and actuators with cellular broadband capabilities. Tethered devices are excluded from this tracker.
- **Bodyworn camera** Any body worn camera that is specifically-designed to record video as a primary function. Usually the video is recorded for evidential, liability or safety purposes with cellular live-streaming capability. Multifunction devices such as mobile radio / body worn cameras may be included in this category.
- **Public Safety Drone** Professional unmanned aerial vehicle belonging to a public safety agency capable of collecting data and share it through a cellular connection.
- **Connected Vehicle** Public Safety vehicle (Police Car, Fire Engine, Ambulance, etc.) with broadband module enabling cellular connectivity.
- **IoT Network Camera** Video cameras developed specifically for use in security and related applications with cellular connectivity.
- **ANPR camera** Automatic Number Plate Recognition (ANPR) cameras must be explicitly designed for ANPR in order to be included in either the integrated or non-integrated device categories. These cameras are distinguished from standard video surveillance cameras due to their ability to read and digitalize vehicles' number plates in real time.

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 active connection 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



Market Forecast

Mission Critical Cellular IoT Forecast – European market overview

Mission Critical Cellular IoT Systems: European Market, 2020-2030

Installed Base (thousands)

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	CAGR ('20-'30)
Wearable Cellular IoT	43.0	62.1	81.5	101.0	234.6	519.3	890.9	1,349.5	1,895.9	2,531.3	3,101.6	47.3%
Body Worn Cameras	77.5	84.9	106.1	141.8	179.1	202.7	238.4	280.5	329.9	388.1	456.7	19.4%
Wearables	120.4	146.9	187.5	242.8	413.7	722.0	1,129.3	1,630.0	2,225.8	2,919.4	3,558.3	40.3%
Vehicles - Law Enforcement	27.7	40.5	55.6	72.3	99.8	140.0	166.0	175.0	187.7	198.5	215.7	22.8%
Vehicles - EMS (Ambulance)	5.8	8.5	11.6	15.1	20.6	28.5	34.2	36.2	39.0	41.5	45.0	22.6%
Vehicles - Fire & Rescue	13.8	20.3	27.9	36.5	50.6	71.6	84.2	88.4	94.7	99.6	108.6	22.9%
Vehicles	47.4	69.3	95.2	123.8	171.0	240.0	284.3	299.7	321.4	339.6	369.2	22.8%
Surveillance	5.9	25.5	52.2	62.8	105.3	161.4	228.7	306.1	396.9	501.0	680.9	60.7%
TOTAL	173.8	241.7	335.0	429.4	690.0	1,123.4	1,642.4	2,235.7	2,944.0	3,760.0	4,608.5	39%

Source: Omdia

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Mission Critical Cellular IoT Forecast – European regional split

Mission Critical Cellular IoT Wearable Systems: Regional Split - Europe

Installed Base (thousands)

Region	Territory	Category	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Western Europe	Austria & Switzerland	Wearable Cellular IoT	0.7	1.0	1.3	1.6	4.7	10.7	18.9	29.0	41.3	55.9	69.4
		Body Worn Cameras	0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.1	1.3	1.6
	Benelux	Wearable Cellular IoT	4.2	6.3	8.5	10.7	14.3	29.3	48.6	72.6	101.3	134.7	164.6
		Body Worn Cameras	0.6	0.6	0.7	0.9	1.2	1.3	1.6	1.8	2.2	2.6	3.1
	France	Wearable Cellular IoT	4.5	6.6	8.7	10.9	24.9	55.4	95.8	146.2	207.0	278.4	343.8
		Body Worn Cameras	11.7	12.8	15.2	19.4	24.2	27.3	32.6	38.8	46.2	55.0	65.5
	Germany	Wearable Cellular IoT	2.0	2.9	3.7	4.6	29.8	70.8	124.9	192.9	274.6	370.4	457.9
		Body Worn Cameras	7.8	8.5	10.1	12.9	16.1	18.2	21.7	25.9	30.8	36.7	43.7
	Italy & Greece	Wearable Cellular IoT	4.8	6.9	8.8	10.6	20.1	42.0	68.7	99.4	133.1	169.4	197.6
		Body Worn Cameras	2.8	3.0	3.6	4.6	5.8	6.5	7.8	9.2	11.0	13.1	15.6
	Nordics	Wearable Cellular IoT	6.0	9.1	12.4	15.8	21.1	43.8	74.1	112.4	159.1	214.9	266.7
		Body Worn Cameras	1.4	1.5	1.8	2.3	2.9	3.3	3.9	4.6	5.5	6.6	7.8
	Spain & Portugal	Wearable Cellular IoT	2.1	3.0	3.9	4.8	19.3	44.4	77.0	117.3	165.1	220.4	269.6
		Body Worn Cameras	3.3	3.7	4.3	5.5	6.9	7.8	9.3	11.1	13.2	15.7	18.7
	UK & Ireland	Wearable Cellular IoT	7.9	10.9	13.9	16.8	21.4	42.6	69.5	100.9	137.2	178.1	212.6
		Body Worn Cameras	20.0	21.9	28.8	40.9	48.3	53.3	61.9	71.8	83.4	96.8	112.4
Eastern Europe	Eastern Europe	Wearable Cellular IoT	10.8	15.6	20.4	25.3	79.0	180.3	313.3	478.8	677.2	909.1	1,119.3
		Body Worn Cameras	29.7	32.6	41.1	54.8	73.2	84.3	99.0	116.2	136.5	160.3	188.2
Total Cellular Mission Critical Cellular IoT Wearables			120.4	146.9	187.5	242.8	413.7	722.0	1,129.3	1,630.0	2,225.8	2,919.4	3,558.3

Source: Omdia

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Mission Critical Cellular IoT Forecast – Public safety agency split

Mission Critical Cellular IoT Systems: Wearables - Public safety agency split

Installed Base (thousands)

			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Law Enforcement	Western Europe	Wearable	21.6	30.8	40.2	49.6	100.9	219.5	373.7	563.3	788.2	1,049.1	1,281.9
	Eastern Europe	Wearable	7.3	10.3	13.3	16.3	51.0	116.3	202.2	309.0	437.0	586.7	722.3
Fire & Rescue	Western Europe	Wearable	8.9	13.2	17.5	21.9	45.5	99.1	169.0	254.8	356.7	474.7	580.2
	Eastern Europe	Wearable	2.9	4.4	5.9	7.4	23.2	53.0	92.1	140.7	198.9	267.1	328.8
EMS (Ambulance)	Western Europe	Wearable	1.7	2.5	3.4	4.2	9.3	20.4	34.9	52.7	73.8	98.3	120.2
	Eastern Europe	Wearable	0.6	0.9	1.2	1.5	4.8	11.0	19.1	29.2	41.3	55.4	68.2
			43.0	62.1	81.5	101.0	234.6	519.3	890.9	1,349.5	1,895.9	2,531.3	3,101.6

Source: Omdia

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Mission Critical Cellular IoT Systems: Connected Vehicles - Public safety agency split

Installed Base (thousands)

			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Law Enforcement	Western Europe	Vehicles	24.0	34.6	47.4	61.4	84.2	116.3	139.6	148.0	159.2	169.8	183.9
	Eastern Europe	Vehicles	3.8	5.8	8.2	10.9	15.7	23.7	26.4	27.0	28.5	28.7	31.8
Fire & Rescue	Western Europe	Vehicles	11.8	17.2	23.6	30.7	42.3	59.1	70.2	74.2	79.6	84.5	91.8
	Eastern Europe	Vehicles	2.0	3.1	4.3	5.7	8.3	12.5	13.9	14.3	15.1	15.1	16.8
EMS (Ambulance)	Western Europe	Vehicles	5.2	7.6	10.3	13.3	18.1	24.7	29.9	31.8	34.3	36.9	39.8
	Eastern Europe	Vehicles	0.6	0.9	1.3	1.8	2.5	3.8	4.3	4.4	4.6	4.6	5.2
			47.4	69.3	95.2	123.8	171.0	240.0	284.3	299.7	321.4	339.6	369.2

Source: Omdia

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Mission Critical Cellular IoT Forecast – European surveillance overview

Mission Critical Cellular IoT Systems: Surveillance

Installed Base (thousands)

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Drones	1.9	4.2	7.0	10.7	15.5	22.3	30.6	40.3	51.6	64.6	79.4
Automatic Number Plate Recognition (ANPR)	1.6	3.7	6.2	9.1	12.6	16.6	21.2	26.5	32.5	39.3	47.0
Network CCTV Cameras & Other Specialized (Thermal, etc)	2.4	17.6	39.1	43.0	77.2	122.5	176.9	239.3	312.8	397.0	554.6
	5.9	25.5	52.2	62.8	105.3	161.4	228.7	306.1	396.9	501.0	680.9

Source: Omdia

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Mission Critical Cellular IoT Forecast – Accelerated adoption model

The model predictions of accelerated deployments consider factors such as timely delivery of national critical network rollouts, increased device market availability, more favourable regulation, and other market catalysts, but real-world outcomes may vary.

Accelerated Deployment Model: Mission Critical Cellular IoT Systems: European Market, 2020-2030

Installed Base (thousands)

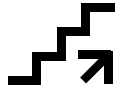
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	CAGR ('20-'30)
Wearable Cellular IoT	43.0	62.1	81.5	151.5	403.9	906.3	1,562.9	2,373.5	3,339.5	4,463.3	5,472.8	62.4%
Body Worn Cameras	77.5	84.9	106.1	141.8	179.1	202.7	238.4	284.1	338.4	411.2	499.8	20.5%
Wearables	120.4	146.9	187.5	293.3	583.0	1,109.0	1,801.3	2,657.5	3,678.0	4,874.5	5,972.6	47.8%
Vehicles - Law Enforcement	27.7	40.5	55.6	72.3	100.8	142.8	174.3	183.8	197.1	208.4	226.5	23.4%
Vehicles - EMS (Ambulances)	5.8	8.5	11.6	15.1	20.8	29.1	35.9	38.0	40.9	43.6	47.2	23.2%
Vehicles - Fire & Rescue	13.8	20.3	27.9	36.5	51.1	73.0	88.4	92.9	99.4	104.6	114.0	23.5%
Vehicles	47.4	69.3	95.2	123.8	172.7	244.8	298.6	314.6	337.4	356.6	387.7	23.4%
Surveillance	5.9	25.5	52.2	62.8	116.5	174.9	244.4	323.8	416.9	523.2	705.5	61.2%
TOTAL	173.8	241.7	335.0	479.9	872.2	1,528.7	2,344.3	3,296.0	4,432.2	5,754.4	7,065.8	45%

Source: Omdia

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Conclusion

Conclusion



- 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 favourable regulations could act as market catalysts increasing the installed base up to 1.5 times surpassing 7 million 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).

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