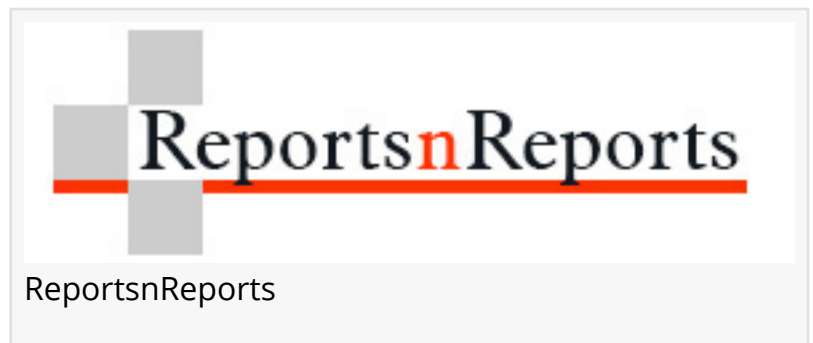


Public Safety LTE & 5G Market 2022 Key Players, Growth, Demands, Subscriptions/Service Revenue and Forecasts to 2030

PUNE, INDIA, December 19, 2022

/EINPresswire.com/ -- The "[Public Safety LTE & 5G Market](#): 2022 – 2030 –

Opportunities, Challenges, Strategies & Forecasts" report presents an in-depth assessment of the public safety LTE and 5G market, including the value chain, market drivers, barriers to uptake, enabling technologies, operational models, application scenarios, key trends, future roadmap, standardization, spectrum availability/allocation, regulatory landscape, case studies, ecosystem player profiles and strategies. The report also presents global and regional market size forecasts from 2022 till 2030, covering public safety LTE/5G infrastructure, terminal equipment, applications, systems integration and management solutions, as well as subscriptions and service revenue.



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The report comes with an associated Excel datasheet suite covering quantitative data from all numeric forecasts presented in the report, as well as a list and associated details of over 1,150 global public safety LTE/5G engagements – as of Q4'2022.

SNS Telecom & IT estimates that annual investments in public safety LTE and 5G infrastructure will reach nearly \$1.6 Billion by the end of 2022, driven by both new build-outs and the expansion of existing dedicated, hybrid government-commercial and secure MVNO/MOCN networks. Complemented by a rapidly expanding ecosystem of public safety-grade LTE/5G devices, the market will further grow at a CAGR of approximately 13% between 2022 and 2025, eventually accounting for more than \$2.3 Billion by the end of 2025. Despite the positive outlook, a number of significant challenges continue to plague the market. The most noticeable pain point is the lack of a D2D communications capability.

Topics Covered

The report covers the following topics:

- Introduction to public safety LTE and 5G Market
- Value chain and ecosystem structure
- Market drivers and challenges
- System architecture and key elements of public safety LTE and 5G networks
- Operational models for public safety LTE and 5G networks, including fully dedicated, shared core, hybrid government-commercial, secure MVNO/MOCN, commercial and sliced private networks
- PPPs (Public-Private Partnerships) and other common approaches to financing and delivering dedicated nationwide public safety broadband networks
- Enabling technologies and concepts, including 3GPP-defined MCX, HPUE, IOPS, 5G MBS, ProSe and sidelink for D2D communications, rapidly deployable LTE/5G systems, QPP (QoS, Priority & Preemption), network slicing, end-to-end security, high-precision positioning, ATG/A2G (Air-to-Ground), and satellite-based NTN (Non-Terrestrial Network) integration
- Analysis of public safety broadband application scenarios and use cases, ranging from mission-critical group communications and real-time video transmission to 5G era applications centered upon MCX services in high-density environments, massive-scale UHD video surveillance and analytics, AR/VR/MR (Augmented, Virtual & Mixed Reality), drones and robotics
- Key trends such as the growing prevalence of nationwide hybrid government-commercial broadband networks, production-grade deployments of 3GPP standards-compliant MCX services, LMR-based interim solutions for off-network communications, deployable LTE network assets for wildfire fighting and other disaster relief operations, and 5G NR-equipped portable networks supporting high-bandwidth, low-latency emergency communications.
- Future roadmap for the public safety LTE and 5G market
- Review of public safety LTE/5G engagements worldwide, including a detailed assessment of 15 nationwide public safety broadband projects and additional case studies of 50 dedicated, hybrid, secure MVNO/MOCN and commercial operator-supplied systems
- Spectrum availability, allocation and usage across the global, regional and national domains
- Standardization, regulatory and collaborative initiatives
- Profiles and strategies of 1,700 ecosystem players, including LTE/5G equipment suppliers and public safety-domain specialists
- Strategic recommendations for public safety and government agencies, LTE/5G infrastructure, device and chipset suppliers, LMR vendors, system integrators, and mobile operators
- Market analysis and forecasts from 2022 till 2030

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Forecast Segmentation

Market forecasts are provided for each of the following submarkets and their subcategories:

Public Safety LTE & 5G Network Infrastructure

Submarkets

- RAN (Radio Access Network)
- Mobile Core
- Backhaul & Transport

Technology Generations

- LTE
- 5G NR

Mobility Categories

- Fixed Base Stations & Infrastructure
- Deployable Network Assets

Deployable Network Asset Form Factors

- NIB (Network-in-a-Box)
- Vehicular COWs (Cells-on-Wheels)
- Aerial Cell Sites
- Maritime Platforms

RAN Base Station (eNB/gNB) Cell Sizes

- Macrocells
- Small Cells

Backhaul & Transport Network Transmission Mediums

- Fiber & Wireline
- Microwave
- Satellite

Public Safety LTE & 5G Terminal Equipment

Technology Generations

- LTE
- 5G NR

Form Factors

- Smartphones & Handportable Terminals
- Mobile & Vehicular Routers
- Fixed CPEs (Customer Premises Equipment)
- Tablets & Notebook PCs
- Smart Wearables
- IoT Modules, Dongles & Others

Public Safety LTE & 5G Subscriptions/Service Revenue

Technology Generations

- LTE
- 5G NR

Network Types

- Dedicated & Hybrid Government-Commercial Networks
- Secure MVNO & MOCN Networks
- Sliced & Commercial Mobile Networks

Public Safety LTE & 5G Systems Integration & Management Solutions Submarkets

- Network Integration & Testing

- Device Management & User Services
- Managed Services, Operations & Maintenance
- Cybersecurity

Public Safety Broadband Applications

Submarkets

- Mission-Critical Voice & Group Communications
- Real-Time Video Transmission
- Messaging, File Transfer & Presence Services
- Mobile Office & Field Applications
- Location Services & Mapping
- Situational Awareness
- Command & Control
- AR/VR/MR (Augmented, Virtual & Mixed Reality)

Regional Markets

- North America
- Asia Pacific
- Europe
- Middle East & Africa
- Latin & Central America

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Key Questions Answered

The report provides answers to the following key questions:

- How big is the public safety LTE and 5G opportunity?
- What trends, drivers and challenges are influencing its growth?
- What will the market size be in 2025, and at what rate will it grow?
- Which submarkets and regions will see the highest percentage of growth?
- What are the operational models and application scenarios of LTE and 5G for first responders?
- What are the existing and candidate frequency bands for the operation of PPDR broadband systems?
- How can public safety stakeholders leverage excess spectrum capacity to ensure the economic viability of purpose-built LTE and 5G NR infrastructure?
- When will MCX, HPUE, IOPS, 5G MBS, 5G NR sidelink, NTN connectivity and other 3GPP-defined critical communications features be widely employed?
- What is the status of fully dedicated, hybrid government-commercial and secure MVNO/MOCN-based public safety broadband networks worldwide?
- When will FirstNet, Safe-Net, ESN, RRF, SIRDEE, VIRVE 2.0 and other nationwide public safety broadband networks replace existing digital LMR systems?
- What opportunities exist for commercial mobile operators and critical communications service providers?

- What are the future prospects of NIB (Network-in-a-Box), COW (Cell-on-Wheels), aerial cell sites and other rapidly deployable LTE and 5G NR-equipped network systems for incident command and emergency response needs?
- How will 5G enable advanced features such as MCX services in high-density environments, UE-to-network and UE-to-UE relaying for coverage expansion, satellite-assisted NR access, high-precision positioning, and network slicing-based dynamic QoS guarantees and isolation?
- Who are the key ecosystem players, and what are their strategies?
- What strategies should LTE/5G infrastructure suppliers, LMR vendors, system integrators and mobile operators adopt to remain competitive?

Key Findings

The report has the following key findings:

- SNS Telecom & IT estimates that annual investments in public safety LTE and 5G infrastructure will reach nearly \$1.6 Billion by the end of 2022, driven by both new build-outs and the expansion of existing dedicated, hybrid government-commercial and secure MVNO/MOCN networks. Complemented by a rapidly expanding ecosystem of public safety-grade LTE/5G devices, the market will further grow at a CAGR of approximately 13% between 2022 and 2025, eventually accounting for more than \$2.3 Billion by the end of 2025.
- In addition to the high-profile FirstNet, South Korea's Safe-Net and Britain's ESN nationwide public safety broadband projects, many additional national-level programs are making considerable headway in moving from field trials to wider scale deployments – most notably, France's RRF, Spain's SIRDEE mission-critical broadband network, Finland's VIRVE 2.0 broadband service, Sweden's Rakel G2 secure broadband system and Hungary's EDR 2.0/3.0 broadband network.
- Other operational and planned deployments include but are not limited to the Halton-Peel region PSBN in Canada's Ontario province, China's city and district-wide Band 45 (1.4 GHz) LTE networks for police forces, Royal Thai Police's Band 26 (800 MHz) LTE network, Qatar MOI (Ministry of Interior), ROP (Royal Oman Police) and Nedaa's mission-critical LTE networks in the oil-rich GCC region, Brazil's state-wide Band 28 (700 MHz) networks for both civil and military police agencies, Barbados' Band 14 (700 MHz) LTE-based connectivity service platform, and Zambia's 400 MHz broadband trunking system.
- Production-grade deployments of 3GPP standards-compliant MCX services – beginning with MCPTT – are continuing to accelerate over both commercial and public safety broadband networks. Early adopters range from Safe-Net, FirstNet and ESN to mobile operators such as Verizon, Southern Linc, Telus, SFR, KPN, Swisscom, Telia, Føroya Tele and STC (Saudi Telecom Company).
- Even though critical public safety-related 5G NR capabilities defined in the 3GPP's Release 17 specifications are yet to be commercialized, public safety agencies have already begun experimenting with 5G for applications that can benefit from the technology's high-bandwidth and low-latency characteristics. For example, the Lishui Municipal Emergency Management Bureau is using a 5G-enabled closed-loop system for integrated emergency visualization and natural disaster management.
- As 5G implementations become well-established in the 2020s, MCX services in high-density

environments, real-time UHD video transmission through coordinated fleets of drones, 5G-connected autonomous police robots, smart ambulances, AR (Augmented Reality) firefighting helmets and other sophisticated public safety broadband applications will become a common sight.

- Over the last two years, COWs (Cells-on-Wheels), COLTs (Cells-on-Light Trucks) and other deployable LTE network assets have played a pivotal role in facilitating mission-critical communications, real-time transmission of video footage, and improved situational awareness for incident command and emergency response needs – for instance, the mobilization of FirstNet deployables during the wildfire seasons of 2021 and 2022 in the United States.
- 5G NR-equipped portable network systems are also beginning to emerge. For example, Taiwan's Hsinchu City Fire Department is using an emergency response vehicle – which features a satellite-backhauled private 5G network based on Open RAN standards – to establish high-bandwidth, low-latency emergency communications in disaster zones. Between 2022 and 2025, SNS Telecom & IT expects cumulative spending on deployable assets for public safety broadband to exceed \$700 Million.
- Although much of the public safety spectrum debate is centered around low-band frequencies in the sub-1 GHz range, a number of PPDR stakeholders have started eyeing up mmWave spectrum reservation to be able to support advanced use cases in the coming years. For example, the Hungarian Ministry of Interior has specifically requested access to a 200 MHz block of Band n258 (26 GHz) spectrum for future 5G applications.
- In addition, first responder agencies in Germany, Japan and several other markets are beginning to utilize mid-band and mmWave spectrum available for local area licensing to deploy portable and small-scale 5G NPNs (Non-Public Networks) to support applications such as UHD video surveillance and control of unmanned firefighting vehicles, reconnaissance robots and drones.
- In the near future, we also expect to see rollouts of localized 5G NR systems for incident scene management and related use cases, potentially using up to 50 MHz of Band n79 spectrum in the 4.9 GHz frequency range (4,940-4,990 MHz), which has been designated for public safety use in multiple countries including but not limited to the United States, Canada, Australia, Malaysia and Qatar.
- The ProSe chipset ecosystem has failed to materialize in the LTE era due to limited support from chipmakers and terminal OEMs. However, the 5G NR sidelink interface offers a clean slate opportunity to introduce direct mode, D2D communications for public safety broadband users, as well as coverage expansion in both on-network and off-network scenarios using UE-to-network and UE-to-UE relays respectively.
- Another barrier impeding the market is the non-availability of cost-optimized COTS RAN equipment and terminals that support operation in certain frequency bands such as Band 68 (698-703 MHz / 753-758 MHz), which has been allocated for PPDR broadband systems in multiple European countries.

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List of Companies Mentioned

- 10T Tech
- 1NCE
- 1oT
- 3GPP (Third Generation Partnership Project)
- 450 MHz Alliance
- 4K Solutions
- 4RF
- 5GCT (5G Catalyst Technologies)
- 6Harmonics/6WiLInk
- 6WIND
- 7Layers
- 7P (Seven Principles)
- A Beep/Diga-Talk+
- A1 Telekom Austria Group
- A10 Networks
- A5G Networks
- AAEON Technology
- Aarna Networks
- ABEL Mobilfunk
- ABiT Corporation
- ABS
- Abside Networks
- Abu Dhabi Police
- Accedian
- AccelerComm
- Accelink Technologies
- Accelleran
- Accenture
- ACCESS CO.
- ACCF (Australasian Critical Communications Forum)
- Accton Technology Corporation
- Accuver
- ACE Technologies
- AceAxis
- AceTel (Ace Solutions)
- Achronix Semiconductor Corporation
- ACMA (Australian Communications and Media Authority)
- ACOME
- Actelis Networks
- Action Technologies (Shenzhen Action Technologies)
- Actiontec Electronics
- Active911
- Actus Networks

- Adax
- ADCOM911 (Adams County Communications Center)
- Adcor Magnet Systems
- ADF (Australian Defence Force)
- ADI (Analog Devices, Inc.)
- ADLINK Technology
- ADRF (Advanced RF Technologies)
- ADT
- ADTRAN
- ADVA
- Advanced Energy Industries
- AdvanceTec Industries
- Advantech
- Advantech Wireless Technologies
- Aegex Technologies
- Aerial Applications
- Aeris
- Aero Wireless Group
- Aerostar International
- AeroVironment
- AERTEC
- Aethertek
- Affarii Technologies
- Affirmed Networks
- AFL Global
- AFRY
- AGCOM (Communications Regulatory Authority, Italy)
- Agile (Agile Interoperable Solutions)
- AGIS (Advanced Ground Information Systems)
- AGM Mobile
- AH NET (MVM NET)
- AI-LINK
- AINA Wireless
- Airbus
- Airfide Networks
- Airgain
- AirHop Communications
- Airlinq
- Air-Lynx (Atos)
- Airspan Networks
- Airtower Networks
- Airwave Solutions
- Airwavz Solutions

- AIS (Advanced Info Service)
- Aisan Technology
- AiVader
- Ajman Police
- Akamai Technologies
- AKOS (Agency for Communication Networks and Services of the Republic of Slovenia)
- Akoustis Technologies
- Akquinet
- Alaxala Networks Corporation
- ALBEDO Telecom
- albis-elcon
- Alcadis
- Alcobendas City Council
- Alea
- Alef (Alef Edge)
- Alepo
- Alestra
- Alestra (Axtel)
- Alibaba Group
- Aliniant
- Allbesmart
- Allen Vanguard Wireless
- Allerio
- Allied Telesis
- Allot
- Alpha Networks
- Alpha Wireless
- Alphabet
- Alsatis Réseaux
- ALSOK (Sohgo Security Services)
- Altaeros
- Altair Semiconductor (Sony Semiconductor Israel)
- ALTÁN Redes
- Altice Group
- Altice Labs
- Altice Portugal
- Altiostar
- ALVIS (Argentina)
- AM Telecom
- Amantya Technologies
- Amarisoft
- Amazon
- Ambra Solutions

- Ambulance Victoria
- Ambulancezorg Groningen
- AMD (Advanced Micro Devices)
- Amdocs
- América Móvil
- American Tower Corporation
- AMI (American Megatrends International)
- AMIT Wireless
- AMN (Africa Mobile Networks)
- Ampere Computing
- Amphenol Corporation
- Ampleon
- Amtele Communication
- An Garda Síochána (Irish National Police Service)
- ANACOM (National Communications Authority, Portugal)
- Ananki
- Anatel (National Telecommunications Agency, Brazil)
- ANCOM (National Authority for Management and Regulation in Communications, Romania)
- Andesat
- ANDEX

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