

LTE & 5G for Critical Communications Market Demands, Key Players, Size, Challenges, Business Growth and Forecast to 2030

PUNE, MAHARASHTRA, INDIA, October 4, 2021 /EINPresswire.com/ -- [LTE & 5G for Critical Communications](#) Market 2020 - 2030 - Opportunities, Challenges, Strategies & Forecasts Research report added to ReportsnReports research database. For nearly a century, the critical communications industry has relied on narrowband LMR (Land Mobile Radio) networks for mission-critical voice and low-speed data services. Over time, these systems have evolved from relatively basic analog radios to digital communications technologies, such as P25 (Project 25) and TETRA, to provide superior voice quality, end-to-end encryption and other advanced features. However, due to their inherent bandwidth and design limitations, even the most sophisticated digital LMR networks are unable to support mobile broadband and data-driven industrial IoT applications that have become vital for public safety, military, utilities, transportation, oil and gas, mining and other segments of the critical communications industry.

The 3GPP-defined LTE and 5G NR standards have emerged as the leading candidates to fill this void. Over the last decade, a plethora of dedicated, hybrid commercial-private and MVNO-based 3GPP networks have been deployed to deliver critical communications broadband capabilities – in addition to the use of commercial mobile operator networks – for application scenarios as diverse as PTT group communications, real-time mobile video surveillance, AR/VR (Augmented & Virtual Reality), wirelessly connected robotics, and automation in industrial environments. These networks range from nationwide public safety broadband platforms such as the United States' FirstNet (First Responder Network), South Korea's Safe-Net (National Disaster Safety Communications Network) and Britain's ESN (Emergency Services Network) to regional cellular networks covering the service footprint of utility companies and localized wireless systems in settings such as railroads, airports, maritime ports, oil and gas production facilities, remote mining sites, factories and warehouses.

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At present, most critical communications user organizations employ LTE and 5G NR as complementary technologies to augment existing voice-centric LMR networks with broadband capabilities. However, with the standardization and commercial availability of MCX (Mission-Critical PTT, Video & Data), IOPS (Isolated Operation for Public Safety), HPUE (High-Power User Equipment) and other 3GPP-defined critical communications features, LTE and 5G NR networks

are increasingly gaining recognition as an all-inclusive critical communications platform for the delivery of mobile broadband and industrial IoT capabilities, as well as MCPTT (Mission-Critical PTT) voice functionality comparable to that offered by traditional LMR systems.

Despite the economic slowdown due to the COVID-19 pandemic and other challenges, SNS Telecom & IT estimates that global investments in LTE and 5G network infrastructure for critical communications will surpass \$3 Billion by the end of 2020. The market is further expected to grow at a CAGR of approximately 13% between 2020 and 2023, eventually accounting for nearly \$5 Billion by 2023.

Spanning over 2,000 pages, the "LTE & 5G for Critical Communications: 2020 – 2030 – Opportunities, Challenges, Strategies & Forecasts" report package encompasses two comprehensive reports covering the use of LTE and 5G NR networks for critical communications.

- The Private LTE & 5G Network Ecosystem: 2020 – 2030 – Opportunities, Challenges, Strategies, Industry Verticals & Forecasts
- The Public Safety LTE & 5G Market: 2020 – 2030 – Opportunities, Challenges, Strategies & Forecasts

This report package provides an in-depth assessment of LTE and 5G for critical communications including the value chain, market drivers, barriers to uptake, enabling technologies, key trends, future roadmap, vertical sectors, application scenarios, standardization, spectrum availability/allocation, regulatory landscape, case studies, ecosystem player profiles and strategies, as well as LTE and 5G network infrastructure investment forecasts from 2020 till 2030.

The report package comes with an associated Excel datasheet suite covering quantitative data from all numeric forecasts presented in both reports.

Topics Covered

The report package covers the following topics:

Report 1: The Private LTE & 5G Network Ecosystem: 2020 – 2030 – Opportunities, Challenges, Strategies, Industry Verticals & Forecasts

- Private LTE and 5G network ecosystem
- Market drivers and barriers
- System architecture and key elements of private LTE and 5G networks
- Analysis of vertical markets and applications – ranging from mobile broadband and mission-critical voice to domain-specific applications such as CBTC (Communications-Based Train Control) and connected robotics for factory automation
- Operational models for private LTE and 5G networks including independent, managed, shared core, hybrid commercial-private and private MVNO networks
- Mission-critical PTT/video/data services, deployable LTE/5G systems, cellular IoT, TSN (Time

Sensitive Networking), URLLC (Ultra-Reliable Low-Latency Communications) techniques, quantum cryptography, unlicensed/shared spectrum, neutral-host/multi-operator small cells, network slicing, MEC (Multi-Access Edge Computing) and other enabling technologies

- Key trends including the adoption of local and shared spectrum licensing, commercial readiness of private 5G systems for Industry 4.0, nationwide and city-wide public safety broadband network build-outs, regional mission/business-critical LTE networks for utilities and energy companies, localized private LTE/5G networks for railway infrastructure, ports, airports, mines, factories, warehouses, buildings, campuses and public venues, and pioneering neutral-host business models for enterprise and public wireless connectivity.
- Review of private LTE and 5G network engagements worldwide, including case studies of more than 40 live networks
- Spectrum availability, allocation and usage for private LTE and 5G networks across the global, regional and national regulatory domains
- Standardization, regulatory and collaborative initiatives
- Future roadmap and value chain
- Profiles and strategies of over 600 ecosystem players including LTE/5G network infrastructure suppliers and vertical-domain specialists
- Strategic recommendations for end users, LTE/5G network infrastructure suppliers, system integrators and commercial/private mobile operators
- Market analysis and forecasts from 2020 till 2030

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Report 2: The Public Safety LTE & 5G Market: 2020 – 2030 – Opportunities, Challenges, Strategies & Forecasts

- Public safety LTE and 5G ecosystem
- Market drivers and barriers
- System architecture and key elements of public safety LTE and 5G systems
- 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 UHD (Ultra High Definition Video), AR/VR/MR (Augmented, Virtual & Mixed Reality), drones and robotics
- Operational models for public safety LTE and 5G networks including commercial, independent, managed, shared core, hybrid commercial-private and secure MVNO networks
- BPPs (Public-Private Partnerships) and other common approaches to financing and delivering dedicated public safety LTE and 5G networks
- MCX (Mission-Critical PTT, Video & Data), IOPS (Isolated Operation for Public Safety), deployable LTE/5G systems, ProSe (Proximity Services) for D2D (Device-to-Device) communications, HPUE (High Power User Equipment), QPP (QoS, Priority & Preemption), network slicing, end-to-end security, high-precision positioning, 3GPP access over satellite/NTN (Non-Terrestrial Networking) platforms and other enabling technologies
- Key trends including hybrid RAN (Radio Access Network) implementations for nationwide

public safety broadband networks, local and city-level LTE deployments to support police forces in developing countries, adoption of sub-500 MHz spectrum for mission-critical LTE networks, commercial readiness of 3GPP-compliant MCX functionality, LMR-based interim solutions for off-network communications, secure MVNO solutions with cross-border roaming, mobile operator-branded critical communications broadband platforms, 5G NR connectivity for applications requiring higher data rates and lower latencies, and localized 5G NR networks for incident scene management

- Review of public safety LTE/5G engagements worldwide including a detailed assessment of 10 nationwide public safety broadband projects and additional case studies of over 40 dedicated, hybrid, MVNO and commercial operator-supplied systems
- Spectrum availability, allocation and usage for public safety LTE and 5G networks across the global, regional and national regulatory domains
- Standardization, regulatory and collaborative initiatives
- Future roadmap and value chain
- Profiles and strategies of 1,100 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 commercial/private mobile operators
- Market analysis and forecasts from 2020 till 2030

Key Questions Answered

The report package provides answers to the following key questions:

- How big is the opportunity for LTE and 5G in the critical communications industry?
- What trends, drivers and barriers are influencing its growth?
- How is the ecosystem evolving by segment and region?
- What will the market size be in 2023, and at what rate will it grow?
- Which vertical markets and regions will see the highest percentage of growth?
- What is the status of dedicated, hybrid commercial-private and secure MVNO-based critical communications broadband networks worldwide?
- What are the existing and candidate licensed, unlicensed and shared spectrum bands for the operation of private LTE and 5G networks?
- What opportunities exist for commercial mobile operators in the critical communications domain?
- What are the key applications of LTE and 5G for public safety, military, utilities, transportation, oil and gas, mining and other verticals?
- Will FirstNet, Safe-Net, ESN and other nationwide public safety broadband networks eventually replace existing digital LMR networks?
- When will LTE and 5G supersede GSM-R as the predominant radio bearer for railway communications?
- How does standardization impact the adoption of LTE and 5G for critical communications and industrial IoT?
- When will MCX, IOPS, HPUE and other 3GPP-defined critical communications features be

widely employed in LTE and 5G networks?

- How will the integration of TSN enable 5G networks to deliver reliable, low-latency connectivity across a broad range of time-critical industrial IoT applications?
- Who are the key ecosystem players, and what are their strategies?
- What strategies should LTE/5G equipment suppliers, system integrators, vertical-domain specialists and mobile operators adopt to remain competitive?

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List of Companies Mentioned :

3GPP (Third Generation Partnership Project), 450 MHz Alliance, 450connect, 4K Solutions, 5G PPP (5G Infrastructure Public Private Partnership), 5GAA (5G Automotive Association), 5G-ACIA (5G Alliance for Connected Industries and Automation), 5G-IA (5G Infrastructure Association), 6Harmonics/6WiLink, 7Layers, A Beep/Diga-Talk+, A1 Telekom Austria Group, A10 Networks, Aaeon Technology, AAR (American Association of Railroad), ABB, ABS, Abside Networks, Abu Dhabi Police, AccelerComm, Accelleran, Accenture, ACCF (Australasian Critical Communications Forum), Accton Technology Corporation, Accuver, Ace Technologies Corporation, AceAxis, AceTel (Ace Solutions), Achronix Semiconductor Corporation, ACMA (Australian Communications and Media Authority), ACPDR (Administration of the Republic of Slovenia for Civil Protection and Disaster Relief), Action Technologies (Shenzhen Action Technologies), Active911, Adax, ADCOM911 (Adams County Communications Center), Adcor Magnet Systems, Addis Ababa Light Rail, ADF (Australian Defence Force), ADI (Analog Devices Inc.), ADLINK Technology, ADNOC (Abu Dhabi National Oil Company), ADR (Aeroporti di Roma), ADRF (Advanced RF Technologies), ADT, ADTRAN, ADVA Optical Networking, AdvanceTec Industries, Advantech, Advantech Wireless Technologies, Aegex Technologies, AEP Renewables, Aerial Applications, AeroMobile Communications, AeroVironment, Affarii Technologies, Affirmed Networks, AGCOM (Autorità per le Garanzie nelle Comunicazioni), Agile (Agile Interoperable Solutions), AGIS (Advanced Ground Information Systems), AGM Mobile, Agnico Eagle, AGURRE (Association of Major Users of Operational Radio Networks, France), AINA Wireless, Air France, Airbus, Airgain, Air-Lynx, Airrays, Airspan Networks, Airwave Solutions, Airwavz Solutions, Ajman Police, AKOS (Agency for Communication Networks and Services of the Republic of Slovenia), Akoustis Technologies, Alcobendas City Council, Alcom (Alands Telecommunications), Alea/Talkway, Alepo, Alga Microwave, Alibaba Group, Allen Vanguard Wireless, Allerio, Alliander, Allied Telesis, Allot, Alpha Networks, Alpha Technologies, Alphabet, Alstom, Altaeros, Altair Semiconductor, ALTÁN Redes, Altice Europe, Altice France, Altice Labs, Altice USA, Altiostar Networks, Altran, Alvarion Technologies, AM Telecom, Amaggi, Amarisoft, Amazon, Ambra Solutions, Ambulance Victoria, Amdocs, Ameren Corporation, América Móvil, American Tower Corporation, Amit Wireless, AMN (Africa Mobile Networks), Amphenol Corporation, Amtele Communication, An Garda Síochána (Irish National Police Service), ANACOM (National Communications Authority, Portugal), Anatel (Agencia Nacional de Telecomunicacoes), ANCOM (National Authority for Management and Regulation in Communications, Romania), Angolan Ministry of Interior, Anktion (Fujian) Technology, Anokiwave, Anritsu Corporation, ANS (Advanced Network Services), ANSI (American

National Standards Institute), Antenna Company, Anterix (pdvWireless), Antna Antenna Technology, APCO (Association of Public-Safety Communications Officials) International, APD Communications, API (American Petroleum Institute), APPA (American Public Power Association), Apple, APSTAR (APT Satellite Company), APT (Asia-Pacific Telecommunity), Aptel (Association of Proprietary Infrastructure and Private Telecommunications Systems Companies, Brazil), Aptica, Aqura Technologies (Veris), Arabsat, Arcadyan Technology Corporation, ARCEP (Autorité de Régulation des Communications Électroniques), Archos, ARCIA (Australian Radio and Communications Industry Association), Arete M, AREU (Azienda Regionale Emergenza Urgenza), Argela/Netsia, Argentine Federal Police, ArgoNET, ARIB (Association of Radio Industries and Businesses, Japan), Arista Networks, ARM, Armasuisse (Federal Office for Defense Procurement, Switzerland), Armour Communications, Arqiva, ArrayComm, ARRIS International, Arrow Energy, Artemis Networks, Artesyn Embedded Computing, Artiza Networks, Aruba Networks, Arukona, Asavie, ASELSAN, AsialInfo Technologies, AsiaSat (Asia Satellite Telecommunications Company), Asiatelco Technologies, Askey Computer Corporation, ASMG (Arab Spectrum Management Group), ASOCS, Aspire Technology, Assured Wireless Corporation, Astellia, ASTRI (Hong Kong Applied Science and Technology Research Institute), ASTRID, Astronics Corporation, ASUS (ASUSTeK Computer), Asylon, AT&T, Atel Antennas, Athonet, ATIS (Alliance for Telecommunications Industry Solutions), AtlantiCare Regional Medical Center, Atlas Telecom, ATN International, Atos, ATT (Telecommunications and Transportation Regulation and Control Authority, Bolivia), AttoCore, ATU (African Telecommunications Union), Auckland Westpac Rescue Helicopter, Auden Techno, Aurora Flight Sciences, Ausgrid, Avanti Communications Group, AVI, Aviat Networks, AVM, AVX Corporation, AW2S (Advanced Wireless Solutions and Services), AWWA (American Water Works Association), Axians, Axione, Axis Communications, Axon, Axtel, Axxcelera Broadband Wireless, Axxcss Wireless Solutions, Azcom Technology, Azetti Networks, B+B SmartWorx, BABS/FOCP (Federal Office for Civil Protection, Switzerland), BAE Systems, and Other company profiles.

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