

Private LTE & 5G Network Ecosystem Market Size, Key Players, Challenges, Strategies, Industry Verticals & Forecasts 2030

PUNE, INDIA, February 9, 2023

/EINPresswire.com/ -- The [Private LTE & 5G Network Ecosystem Market](#) refers to the deployment of private Long-Term Evolution (LTE) and fifth-generation (5G) cellular networks for specific organizations and industries. These networks are designed to provide secure, high-speed, and reliable communication for specific use cases, such as industrial control systems, enterprise communications, and critical infrastructure.



The market for Private LTE & 5G Network Ecosystem has been growing in recent years due to the increasing demand for secure and dedicated communication networks for specific industries and organizations. The advent of 5G technology has brought several new capabilities, such as ultra-fast data speeds, low latency, and increased capacity, which are crucial for private network use cases.

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Key players in the Private LTE & 5G Network Ecosystem market include major telecom operators such as AT&T, Verizon, and T-Mobile, as well as technology providers such as Nokia, Ericsson, and Huawei.

Overall, the Private LTE & 5G Network Ecosystem market is expected to continue growing in the coming years, as industries and organizations increasingly adopt these technologies to improve their communication and control capabilities.

Topics Covered

The report covers the following topics:

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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Forecast Segmentation

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

Submarkets

RAN (Radio Access Network)

Mobile Core

Backhaul & Transport

Air Interface Technologies

LTE

5G

Spectrum Types

Licensed Spectrum

Unlicensed/Shared Spectrum

Unlicensed/Shared Spectrum Frequency Bands

1.9 GHz sXGP/DECT

2.4 GHz

3.5 GHz CBRS

5 GHz

Other Bands

Vertical Markets

Critical Communications & Industrial IoT

□ Public Safety

□ Military

□ Energy

□ Utilities

□ Mining

□ Transportation

□ Factories & Warehouses

□ Others

Enterprise & Campus Environments

Public Venues & Other Neutral Hosts

Regional Markets

Asia Pacific

Eastern Europe

Middle East & Africa

Latin & Central America

North America

Western Europe

Key Questions Answered

The report provides answers to the following key questions:

How big is the private LTE and 5G network opportunity?

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 private LTE and 5G network adoption worldwide, and what are the primary usage scenarios of these networks?

What are the practical applications of private 5G networks – based on early commercial rollouts and pilot deployments?

How are private LTE and 5G networks delivering broadband and IoT connectivity for smart cities in areas such as public safety, transportation, utilities, waste management and environmental monitoring?

What are the existing and candidate licensed, unlicensed and shared spectrum bands for the operation of private LTE and 5G networks?

How will CBRS, sXGP, MulteFire and other unlicensed/shared spectrum access schemes and technologies accelerate the adoption of private LTE and 5G networks in the coming years?

How does standardization impact the adoption of LTE and 5G networks for critical communications and industrial IoT?

When will mission-critical PTT/video/data, 3GPP-LMR interworking, URLLC for industrial IoT, railway/maritime communications and other 3GPP-specified vertical-domain capabilities become commercially mature for implementation?

How will the integration of TSN (Time Sensitive Networking) enable private 5G networks to deliver reliable, low-latency connectivity across a broad range of time-critical industrial applications?

Do IEEE 802.16s, AeroMACS, WiGRID and other technologies pose a threat to private LTE and 5G networks?

What opportunities exist for commercial mobile operators in the private LTE and 5G network ecosystem?

Will FirstNet, Safe-Net, ESN and other nationwide public safety broadband networks eventually replace existing digital LMR networks?

When will private LTE and 5G networks supersede GSM-R as the predominant radio bearer for railway communications?

What are the future prospects of rapidly deployable LTE and 5G systems?

Who are the key ecosystem players, and what are their strategies?

What strategies should LTE/5G infrastructure suppliers, system integrators, vertical-domain specialists and mobile operators adopt to remain competitive?

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Key Findings

The report has the following key findings:

Expected to reach \$4.7 Billion in annual spending by the end of 2020, private LTE and 5G networks are increasingly becoming the preferred approach to deliver wireless connectivity for

critical communications, industrial IoT, enterprise & campus environments, and public venues. The market will further grow at a CAGR of 19% between 2020 and 2023, eventually accounting for nearly \$8 Billion by the end of 2023.

SNS Telecom & IT estimates that as much as 30% of these investments – approximately \$2.5 Billion – will be directed towards the build-out of private 5G networks which will become preferred wireless connectivity medium to support the ongoing Industry 4.0 revolution for the automation of factories, warehouses, ports and other industrial premises, besides serving additional verticals.

Favorable spectrum licensing regimes – such as the German Government's decision to reserve frequencies in the 3.7 – 3.8 GHz range for localized 5G networks – will be central to the successful adoption of private 5G networks.

A number of other countries – including Sweden, United Kingdom, Japan, Hong Kong and Australia – are also moving forward with their plans to identify and allocate spectrum for localized, private 5G networks with a primary focus on the 3.7 GHz, 26 GHz and 28 GHz frequency bands.

The very first private 5G networks are also beginning to be deployed to serve a diverse array of usage scenarios spanning from connected factory robotics and massive-scale sensor networking to the control of AVGs (Automated Guided Vehicles) and AR/VR (Augmented & Virtual Reality). For example, Daimler's Mercedes-Benz Cars division is establishing a local 5G network to support automobile production processes at its "Factory 56" in Sindelfingen, while the KMA (Korea Military Academy) is installing a dedicated 5G network in its northern Seoul campus to facilitate mixed reality-based military training programs – with a primary focus on shooting and tactical simulations.

The private LTE network submarket is well-established with operational deployments across multiple segments of the critical communications and industrial IoT (Internet of Things) industry, as well as enterprise buildings, campuses and public venues. China alone has hundreds of small to medium scale private LTE networks, extending from single site systems through to city-wide networks – predominantly to support police forces, local authorities, power utilities, railways, metro systems, airports and maritime ports.

Private LTE networks are expected to continue their upward trajectory beyond 2020, with a spate of ongoing and planned network rollouts – from nationwide public safety broadband networks to usage scenarios as diverse as putting LTE-based communications infrastructure on the Moon.

In addition to the high-profile FirstNet, South Korea's Safe-Net, Britain's ESN (Emergency Services Network) nationwide public safety LTE network projects, a number of other national-level engagements have recently come to light – most notably, the Royal Thai Police's LTE network which is already operational in the greater Bangkok region, Finland's VIRVE 2.0 mission-critical mobile broadband service, France's PCSTORM critical communications broadband project, and Russia's planned secure 450 MHz LTE network for police forces, emergency services and the national guard.

Other segments within the critical communications industry have also seen growth in the adoption of private LTE networks – with recent investments focused on mining, port and factory automation, deployable broadband systems for military communications, mission-critical voice,

broadband and train control applications for railways and metro systems, ATG (Air-to-Ground) and airport surface wireless connectivity for aviation, field area networks for utilities, and maritime LTE platforms for vessels and offshore energy assets.

In the coming months and years, we expect to see significant activity in the 1.9 GHz sXGP, 3.5 GHz CBRS, 5 GHz and other unlicensed/shared spectrum bands to support the operation of private LTE and 5G networks across a range of environments, particularly enterprise buildings, campuses, public venues, factories and warehouses.

Leveraging their extensive spectrum assets and mobile networking expertise combined with a growing focus on vertical industries, mobile operators are continuing to retain a strong foothold in the wider private LTE and 5G network ecosystem – with active involvement in projects ranging from large-scale nationwide public safety LTE networks to highly localized 5G networks for industrial environments.

A number of independent neutral-host and wholesale operators are also stepping up with pioneering business models to provide LTE and 5G connectivity services to both mobile operators and enterprises. For example, using strategically acquired 2.6 GHz and 3.6 GHz spectrum licenses, Airspan's operating company Dense Air plans to provide wholesale wireless connectivity in Ireland, Belgium, Portugal, New Zealand and Australia.

Cross-industry partnerships are becoming more commonplace as LTE/5G network equipment suppliers wrestle to gain ground in key vertical domains. For example, Nokia has partnered with Komatsu, Sandvik, Konecranes and Kalmar to develop tailored private LTE and 5G network solutions for the mining and transportation industries.

For More Details Inquire at

<https://www.reportsnreports.com/contacts/inquirybeforebuy.aspx?name=2640367>

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)

7Layers

A1 Telekom Austria Group

Aaeon Technology

AAR (American Association of Railroad)

ABB

Abu Dhabi Police

Accelleran

Accenture

ACCF (Australasian Critical Communications Forum)
Accton Technology Corporation
Accuver
Ace Technologies Corporation
AceAxis
ACMA (Australian Communications and Media Authority)
Adax
Addis Ababa Light Rail
ADF (Australian Defence Force)
ADLINK Technology
ADNOC (Abu Dhabi National Oil Company)
ADR (Aeroporto di Roma)
ADRF (Advanced RF Technologies)
ADTRAN
ADVA Optical Networking
Advantech
Advantech Wireless
Aegex Technologies
AEP Renewables
AeroMobile Communications
AeroVironment
Affarii Technologies
Affirmed Networks
Agnico Eagle
AGURRE (Association of Major Users of Operational Radio Networks, France)
Air France
Airbus
Airgain
Air-Lynx
Airrays
Airspan Networks
Airwavz Solutions
Ajman Police
AKOS (Agency for Communication Networks and Services of the Republic of Slovenia)
Alcobendas City Council
Alcom (Alands Telecommunications)
Alea/Talkway
Alepo
Alga Microwave
Alliander
Allied Telesis
Alpha Networks
Alpha Technologies

Alphabet
Alstom
Altaeros
Altair Semiconductor
ALTÁN Redes
Altice France
Altice USA
Altistar Networks
Altran
Alvarion Technologies
AM Telecom
Amaggi
Amarisoft
Amazon
Ambra Solutions
Amdocs
Ameren Corporation
América Móvil
American Tower Corporation
Amit Wireless
Amphenol Corporation
An Garda Síochána (Irish National Police Service)
Anktion (Fujian) Technology
Anritsu Corporation
ANS (Advanced Network Services)
Antenna Company
Anterix (pdvWireless)
APCO (Association of Public-Safety Communications Officials) International
API (American Petroleum Institute)
APPA (American Public Power Association)
Apple
Aptel (Association of Proprietary Infrastructure and Private Telecommunications Systems Companies, Brazil)
Aptica
Aqura Technologies (Veris)
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
ArgoNET

ARIB (Association of Radio Industries and Businesses, Japan)
ARM
Armasuisse (Federal Office for Defence Procurement, Switzerland)
Arqiva
ARRIS International
Arrow Energy
Artemis Networks
Artesyn Embedded Computing
Artiza Networks
ASELSAN
Askey Computer Corporation
ASOCS
Assured Wireless Corporation
Astellia
ASTRI (Hong Kong Applied Science and Technology Research Institute)
ASTRID
ASUS (ASUSTeK Computer)
AT&T
Atel Antennas
Athonet
ATIS (Alliance for Telecommunications Industry Solutions)
Atlas Telecom
ATN International
Atos
AttoCore
Ausgrid
Avanti Communications Group
AVI
Aviat Networks
AVX Corporation
AWWA (American Water Works Association)
Axon
Axxcelera Broadband Wireless
Axxcss Wireless Solutions
Azcom Technology
Azetti Networks
BABS/FOCP (Federal Office for Civil Protection, Switzerland)
BAE Systems
BAI Communications
Baicells Technologies
BAKOM/OFCOM (Federal Office of Communications, Switzerland)
BandRich
BandwidthX

Barrett Communications
BARTEC
BASE (Telenet)
BASF
BATM Advanced Communications
BATS (Broadband Antenna Tracking Systems)
Baylin Technologies
BBB (BB Backbone Corporation)
BBK Electronics Corporation
BC Hydro
BCE (Bell Canada)
BDBOS (Federal Agency for Public Safety Digital Radio, Germany)
BDEW (Federal Association of Energy and Water Industries, Germany)
Beach Energy
BEC Technologies
Beeline Armenia
Beeper Communications
Benetel
BesoVideo
BHP
Bilbao Metro
Billion Electric
Many Others.

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