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LTE & 5G NR in Unlicensed Spectrum: 2020 – 2030 – Opportunities, Challenges, Strategies & Forecasts

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Abstracts

Over the past decade, the operation of 3GPP-based cellular networks in unlicensed spectrum has gone from being a perennial talking point to what is now a key element of mobile network densification strategies. Mobile operators across the globe are increasingly rolling out LTE RAN (Radio Access Network) infrastructure operating in unlicensed spectrum – primarily the globally harmonized 5 GHz band – to expand network capacity and deliver higher data rates, particularly in dense urban environments. These implementations are largely based on LAA (Licensed Assisted Access) technology which aggregates unlicensed channels with anchors in licensed spectrum to maintain seamless and reliable connectivity.

However, the practical applicability of unlicensed spectrum is not limited to the capacity enhancement of traditional mobile operator networks. Technical and regulatory initiatives such as MulteFire, CBRS (Citizens Broadband Radio Service) and sXGP (Shared Extended Global Platform) make it possible for enterprises, vertical industries, third-party neutral hosts and other new entrants to build and operate their own independent cellular networks solely in unlicensed spectrum without requiring an anchor carrier in licensed spectrum. Furthermore, in conjunction with the availability of new license-exempt frequencies such as the recently opened 6 GHz band from 5925 MHz to 7125 MHz, the introduction of 5G NR-U in 3GPP's Release 16 specifications paves the way for 5G NR deployments in unlicensed spectrum for both licensed assisted and standalone modes of operation. Given 5G's inherent support for reliability and time-sensitive networking, NR-U is particularly well suited to meet industrial IoT requirements for the automation and digitization of environments such as factories, warehouses, ports and mining sites.

Despite the economic slowdown due to the COVID-19 pandemic, competition from

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non-3GPP wireless technologies and other challenges, SNS Telecom & IT estimates that global investments in LTE and 5G NR-ready RAN infrastructure operating in unlicensed spectrum will reach nearly $500 Million by the end of 2020. The market is further expected to grow at a CAGR of approximately 40% between 2020 and 2023, eventually accounting for $1.3 Billion by 2023.

The “LTE & 5G NR in Unlicensed Spectrum: 2020 – 2030 – Opportunities, Challenges, Strategies & Forecasts” report presents a detailed assessment of the market for LTE and 5G NR in unlicensed spectrum including the value chain, market drivers, barriers to uptake, enabling technologies, key trends, future roadmap, business models, use cases, application scenarios, standardization, spectrum availability/allocation, regulatory landscape, case studies, ecosystem player profiles and strategies. The report also provides global and regional forecasts for unlicensed LTE and 5G NR RAN infrastructure from 2020 till 2030. The forecasts cover two air interface technologies, two modes of operation, two cell type categories, seven frequency band ranges, seven use cases and five regional markets.

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

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9.17 Amazon
9.18 Amdocs
9.19 American Tower Corporation
9.20 Amit Wireless
9.21 Anritsu Corporation
9.22 ANS (Advanced Network Services)
9.23 Antenna Company
9.24 Anterix
9.25 Apple
9.26 Artemis Networks (Rearden)
9.27 ASOCS
9.28 ASTRI (Hong Kong Applied Science and Technology Research Institute)
9.29 ASUS (ASUSTeK Computer)/Askey Computer Corporation

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9.30 Athonet
9.31 ATN International
9.32 AttoCore
9.33 Axell Wireless
9.34 Azcom Technology
9.35 BAI Communications/Transit Wireless
9.36 Baicells Technologies
9.37 Ballast Networks
9.38 BearCom
9.39 BEC Technologies
9.40 Benetel
9.41 Billion Electric
9.42 Black Box Corporation
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9.50 BVSystems (Berkeley Varitronics Systems)
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9.57 CCI (Communication Components Inc.)/BLiNQ Networks
9.58 CCN (Cirrus Core Networks)
9.59 CellAntenna Corporation
9.60 cellXica
9.61 Celona
9.62 Centerline Communications
9.63 CICT (China Information and Communication Technology Group)/China Xinke Group
9.64 Cisco Systems
9.65 ClearSky Technologies
9.66 Codium Networks
9.67 Comba Telecom

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9.68 CommAgility (Wireless Telecom Group)
9.69 CommScope/Ruckus Networks
9.70 Compal
9.71 COMSovereign
9.72 Connectivity Wireless Solutions (M/C Partners)
9.73 Contela
9.74 Corning
9.75 Council Rock
9.76 Cradlepoint (Ericsson)
9.77 Crown Castle International Corporation
9.78 CTS (Communication Technology Services)
9.79 Dali Wireless
9.80 Dejero Labs
9.81 DEKRA
9.82 Dell Technologies
9.83 Digi International
9.84 Digicert
9.85 DKK (Denki Kogyo)
9.86 Druid Software
9.87 EION Wireless
9.88 Encore Networks
9.89 Ericsson
9.90 ETRI (Electronics & Telecommunications Research Institute, South Korea)
9.91 EXFO
9.92 ExteNet Systems (Digital Colony)
9.93 Facebook
9.94 Fairspectrum
9.95 FCNT (Fujitsu Connected Technologies)/JEMS (Japan EM Solutions)
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9.97 Fibrolan
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9.99 FRTek
9.100 Fujitsu
9.101 Future Technologies Venture
9.102 GCT Semiconductor
9.103 GE (General Electric)
9.104 Gemtek Technology
9.105 Geoverse (ATN International)
9.106 Getac Technology Corporation

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9.109 Granite Telecommunications
9.110 Green Packet
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9.112 HFR
9.113 Hitachi Kokusai Electric
9.114 Hon Hai Precision Industry (Foxconn Technology Group)
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9.116 HPE (Hewlett Packard Enterprise)
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9.143 KLA Laboratories
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9.150 Lemko Corporation
9.151 Lenovo/Motorola Mobility
9.152 LG Electronics
9.153 Lime Microsystems
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9.212 Redline Communications
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