

# Technology Law Analysis

July 27, 2022

## PRIVATE ENTERPRISES IN INDIA NOW ALLOWED TO SET UP 5G CAPTIVE WIRELESS NETWORKS

- Private enterprises can now establish captive wireless private networks.
- Spectrum for these captive non-public networks can either be leased from telecom service providers from the Government directly via a license.
- Captive non-public networks can also be availed as a service from telecom service providers.
- Major boost to adoption of 5G networks for enterprise use cases in IoT, M2M, robotics, AI and Mobile Edge Computing (MEC).

### I. INTRODUCTION

The Indian telecom regulator i.e. the Department of Telecommunications ("DoT") issued amendments to the licenses of existing access service providers on June 27, 2022 allowing them to *lease* telecom spectrum allotted to them for public mobile communications, to private enterprises to establish captive networks while at the same time providing standard public network services. The DoT also introduced a new license category for private enterprises to directly establish geographically locked captive non-public networks subject to operational conditions. These changes follow recommendations of the Telecom Regulatory Authority of India ("TRA") that were issued on the same lines.

With these recent changes, private enterprises can now establish dedicated captive non-public networks ("CNPNS") either by availing CNPN-as-a-service from licensed Telecom Service Providers ("TSPs"), or by obtaining a CNPN license themselves and leasing spectrum either from a TSP or from the Government directly.

These CNPNs leveraged with 5G can facilitate newer technologies such as Internet of Things (IoT) and Machine to Machine (M2M) communications with better and faster real-time communications with lesser latency and have more operational control over such networks to suit the needs of the organization.

### II. AMENDMENTS INTRODUCED TO ACCESS SERVICE LICENSES AND RELATED GUIDELINES

TSPs are authorized to provide access services (such as phone calls or SMSs) under the 'Access Services' chapter of the Unified License ("UL") granted by the DoT, which is the current licensing regime for telecom services in India. Some TSPs also continue to provide access services being licensed under the previous regime i.e. under the Unified Access Service License ("UASL") agreement.

On June 27, 2022, the DoT issued amendments to both the UASL<sup>1</sup> and UL<sup>2</sup> agreements allowing TSPs to lease their allocated spectrum as per the guidelines issued by the Government and provide CNPN as a service to enterprises. CNPNs are defined as terrestrial wireless telecommunication networks established for captive use within a specified geographical area which cannot be used for providing commercial telecommunication services.

TSPs are allowed use their network resources to provide CNPNs as a service, such as through network slicing, but would still be required to ensure that the Quality of Standards ("QoS") prescribed for public networks provided to customers are maintained.

The DoT also issued *Guidelines for leasing of spectrum to Captive Non-Public Network Licensee*<sup>3</sup> and *Guidelines for Captive Non-Public Network (CNPN) License*<sup>4</sup> (collectively, "Guidelines") to supplement the amendments to the UASL and UL. These Guidelines provide that private enterprises may either:

- avail CNPNs as service from a TSP; or
- obtain a CNPN license themselves, lease spectrum either from a TSP or from the Government and establish a CNPN.

### III. AVAILING CNPN AS A SERVICE FROM TSPS

As per the Guidelines issued, TSPs may delineate and establish a CNPN, by leasing a part of the International Mobile Telecommunications ("IMT") spectrum allocated to it to their private enterprise customers. They may use resources such as network slicing to provide these CNPNs over their Public Land Mobile Network (PLMN).

If a TSP decides to surrender the spectrum which is used for CNPNs, it is liable to give at least a 6-month notice to its customers.

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The Guidelines also allow private enterprises to obtain a CNPN license, establish and manage the CNPN themselves if they are an Indian company incorporated under the Companies Act, 2013 and they are the occupant of the geographical area where the CNPN is proposed to be established. The application fee is a one-time non-refundable amount of INR 50,000. Enterprises may either lease the spectrum from a TSP or seek direct assignment of spectrum from the Government. For seeking direct assignment from the Government, the applicant enterprise must have a net worth of at least INR 100 Crores.

The Guidelines provide for certain conditions applicable on a CNPN licensee. Notable conditions are as follows:

- The tenure of the license is 10 years;
- The CNPN licensee must obtain online clearances from the Standing Advisory Committee on Frequency Allocation (SACFA) and wireless equipment import permission (where applicable) after entering into leasing agreements and prior to commencement of operations;
- The CNPN must be for own use of the licensee within the geographical area / premises, and cannot be used for providing commercial telecom services;
- The CNPN can be established at multiple locations where the licensee has operations, given that the geo-coordinates of such locations are provided while applying for the spectrum. CNPNs at different locations may be connected by leased lines obtained from TSPs;
- The licensee must follow relevant standards set by the Telecommunication Engineering Centre and international standardization bodies; and
- Interconnection of the CNPN to public networks including PSTN, PLMN, GMPSC and public internet is not permitted.

Where IMT spectrum is leased by CNPN licensees from TSPs:

- TSPs and CNPN licensees are free to determine the terms and conditions of the lease of the IMT spectrum as per commercial preferences;
- CNPn licensees may lease such spectrum from multiple TSPs; and
- The TSPs are required to submit details of the spectrum bands, quantum of spectrum in each band, period of lease, geographic area of lease, geo-coordinates of the logical perimeter of the defined premises and use of spectrum to the DoT, within 15 days of entering into leasing agreements with CNPN licensees.

## V. IMPACT AND BOOST TO NEW AGE TECHNOLOGIES

The amendments to the UASL and UL, and the Guidelines are issued with a forward-thinking outlook along the lines of the National Digital Communications Policy, 2018 and the Recommendations of TRAI on *Auction of Spectrum in frequency bands identified for IMT/5G* dated April 11, 2022.<sup>5</sup> These recommendations were also issued largely in consonance with the feedback obtained from industry participants such as NASSCOM (National Association of Software and Service Companies),<sup>6</sup> the Broadband India Forum<sup>7</sup> and to some extent, FICCI (Federation of Indian Chambers of Commerce & Industry).<sup>8</sup> Allowing CNPNs to be established will accelerate the adoption of 5G technology, which is best deployed on networks with higher capacity and reduced latency. Taking note of the innumerable advantages offered by private 5G networks as described in the above-mentioned recommendations and the Guidelines, CNPNs deploying such networks are ideal for supporting emerging new-age technologies such as artificial intelligence, robotics, Internet of Things (IoT), Mobile Edge Computing (MEC), and Machine to Machine (M2M) communications.

Private networks, especially with 5G technology deployment around the corner, has been earnestly sought after by various service providers across the industry since such networks are:

- more operationally adaptable**, since they can be customized to an enterprise's unique requirements depending on the enterprise's priority function and the relevant industry;
- more secure**, since such networks allow enterprises to have increasing monitoring and assessment capabilities, to devise network configurations and security policies as desired, and prioritize more critical network traffic flow in a secure manner;
- more efficient**, since enterprise functions riding on AI, IoT and M2M technologies can be carried out most efficiently with dedicated demarcated network components within the CNPNs; and
- more resourceful**, since enterprises can now utilize underutilized spectrum bands leased by TSPs as well as utilize unlicensed spectrum by leasing directly from the DoT.

Thus, we may see an increase in CNPNs established by organizations with large scale operations in India. It has been reported that along with the usual suspects Jio, Airtel and Vodafone Idea, the Adani Group is also looking to participate in 5G spectrum auctions to establish CNPNs.<sup>9</sup> The flexible regime for availing CNPN as a service through TSPs may also result in captive networks seen as an option for testing innovative sandbox technologies in a secure environment and intra-organizational communication channels for service providers as well as serving as an additional source of revenue for TSPs. However, it must still be kept in mind that CNPNs are completely secluded networks and there is only a limited exemption afforded to enterprises allowing CNPNs located at different locations to be connected through leased lines of TSPs. CNPNs also cannot be made interoperable with public networks by enterprises without a TSP's intervention.

<sup>1</sup> Available at <https://dot.gov.in/sites/default/files/CNPN%20UASL%20Amendment%2027062022.pdf> (last accessed July 26, 2022).

<sup>2</sup> Available at <https://dot.gov.in/sites/default/files/CNPN%20UL%20Amendment%2027062022.pdf> (last accessed July 26, 2022).

<sup>3</sup> Available at <https://dot.gov.in/sites/default/files/Spectrum%20leasing%20guidelines%20dated%2027062022.pdf> (last accessed July 26, 2022).

<sup>4</sup> Available at <https://dot.gov.in/sites/default/files/CNPN%20Guidelines%2027062022.pdf> (last accessed July 26, 2022).

<sup>5</sup> Available at [https://www.trai.gov.in/sites/default/files/Recommendations\\_11042022\\_0.pdf](https://www.trai.gov.in/sites/default/files/Recommendations_11042022_0.pdf) (last accessed July 26, 2022).

<sup>6</sup> NASSCOM's comments to TRAI can be accessed at [https://www.trai.gov.in/sites/default/files/NASSCOM\\_11012022.pdf](https://www.trai.gov.in/sites/default/files/NASSCOM_11012022.pdf) (last accessed July 26, 2022)

<sup>7</sup> The Broadband India Forum's comments to TRAI can be accessed at [https://www.trai.gov.in/sites/default/files/BIF\\_11012022.pdf](https://www.trai.gov.in/sites/default/files/BIF_11012022.pdf) (last accessed July 26, 2022)

<sup>8</sup> FICCI's comments to TRAI can be accessed at [https://www.trai.gov.in/sites/default/files/FICCI\\_11012022.pdf](https://www.trai.gov.in/sites/default/files/FICCI_11012022.pdf) (last accessed July 26, 2022)

<sup>9</sup> Please see <https://indianexpress.com/article/india/adani-confirms-entry-telecom-spectrum>

[-race-use-5g-spectrum-pvt-network-8019658/](#) (last accessed July 26, 2022).

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