



To
Shri K Rajaraman, IAS
Secretary
Department of Telecom
Sanchar Bhawan New Delhi-110001

November 12, 2021

Sub: Licensing of Private-Captive 4G/5G Wireless Networks

Dear Sir,

We would like to congratulate you and acknowledge your extensive efforts in implementing the recent telecom reforms announced by the government. These reforms are beginning of a new era for the telecom sector.

We would like to draw your attention to the long outstanding issue of streamlining the process of Licensing of Private and Captive Wireless Network to support Industry 4.0 and economic development of the country

Industries from around the world have agreed on the fact that 5G and LTE will play a major role in the digital transformation of industries and enterprises in this decade. LTE and 5G wireless technologies will be a major pillar of the next Industrial Revolution, also referred as Industries 4.0.

One of the key examples of use of 5G in Industrial area is in the automobile factories of the future. Mercedes, a car manufacturer in Germany is setting up the world's first 5G mobile network for automobile production at its latest factory known as "Factory 56". This new project covers over an area of 20,000 square meters to run the production line. Having their own 5G infrastructure owned and operated by Mercedes carries together several advantages and is crucial in the implementation of smart manufacturing for the future, leading to better economies and exports.

Mercedes acts as an example to reflect light on the matter that, with a sperate captive network, the manufacturing can be optimized and made robust by linking production system and factory together in an intelligent manner, thereby supporting the efficiency and precision of the production process. A captive local 5G network helps in ensuring that the sensitive production data is not shared with third parties (such as a mobile operator) when enormous quantities of data is required for various test scenarios involving the future driven car.

Currently captive users of mobile wireless communication, such as Seaports, Airports, Logistic hubs. Industrial takings are facing various problems & delays in setting up their captive communication networks due to complex and long drawn process for getting an unnecessary CMRTS License (it is not clear why such a license is needed since they are not providing any telecom service to anyone)

Private and captive wireless LTE and 5G networks will be a lifeline for sustenance of the country’s economic development, public safety and well as industrial development which are critical to support Atmanirbhar Bharat. A Private 5G network can deliver an ultra-low latency accompanying incredibly high bandwidth connections supporting artificial intelligence-driven applications serving an exploding number of sensors and endpoints. Such implementation would need access to a dedicated spectrum band. For example, in 2019 Germany announced Corporate License of 3.7-3.8 GHz band spectrum for private 5G networks putting forth under a limelight for intended usage and such services are core for industrial use.

Many developed countries have already licensed private captive 4G/5G networks. These include USA, UK, Germany, Australia, Japan, etc. Attachment 1 provides an example of regulations for captive licensing in Germany and Japan.

Captive users such as the paramilitary forces, along with metro rail projects are facing several hinderances and delays in setting up captive communication network due to complex and extensive process for acquiring unnecessary CMRTS (Captive Mobile Radio Trunking) License

The process of obtaining the DoT CMRTS License for captive industrial users typically takes between six months to two years as compared to less than a month in most developed countries, and this has become a major bottleneck in the Industrial development of the country. The same is illustrated in the table below:

Typical time taken for processing of Captive license applications

<i>Activity</i>	<i>Typical Time Taken</i>
<i>Application preparation time by the industry</i>	<i>2-12 Weeks</i>
<i>DOT collects “No Dues” from various</i>	<i>8-16 Weeks</i>
<i>DOT takes Frequency approval from WPC</i>	<i>8-16 Weeks</i>
<i>DOT takes TEC Approval</i>	<i>8-16 Weeks</i>
<i>MOC Approval</i>	<i>6-12 Weeks</i>
<i>License signing</i>	<i>3-4 weeks</i>
<i>Total</i>	<i>Up to 2 years</i>

(See some examples of actual cases in the recent past in attachment 2)

The main delay in getting the CMRTS license is coupled with the sequential nature of the process, wherein three separate licenses have to be taken by the agencies, from DoT one after

the other rather than a single approval or as a parallel process which is the general norm in most countries.

Currently captive users only need wireless spectrum for their “captive” use only and no telecom service is being provided by them to the public or to anyone else. However, they are being asked to take a CMRTS license before they can apply for a WPC spectrum license. In principle, there should be no need for a separate CMRTS license under section 4 of the Indian telegraph act as these users do not provide any service to any customers and the wireless network is 100% used for internal communications and coordination purposes such as security, safety and logistics.

We therefore recommend that, the Captive License should be merged with the WPC spectrum license and there should be a simplified process where the users directly apply for spectrum to WPC, instead of first going through an elaborate Captive Licensing process with DoT and then applying for spectrum to WPC. This will reduce the processing time to a significant 3-month period.

With warm regards,

Yours truly,

Bharat B Bhatia,
President, ITU-APT Foundation of India
Suite 504, World Trade Center, New Delhi-110001
Phone: +919810173737

Attachment 1

Example of Captive licensing in Germany and Japan

In November 2019, Germany opened 100 MHz in the 3.7-3.8 GHz band for 5G local spectrum licences. Interested applicants could apply for up to 100 MHz of spectrum, in 10 MHz blocks, using time division duplex (TDD) for use in a defined coverage area. Applications had to include plans that demonstrate that the spectrum requested would be used efficiently to ensure effective use. Licences could be granted for up to 10 years, with the possibility of renewal until December 2040 at the latest. Users must ensure interference-free use, including by coordinating with other geographically near local users and protecting existing users in the band (e.g., FSS earth stations). The spectrum must be used within one year of assignment and any transfers must be approved by the German equivalent of WPC, the BNetzA

BNetzA has endeavoured to make the local licences available to a wide audience and has set broad eligibility requirements and annual fees tied to criteria of use. As of 13 November 2020, the government had granted local 5G frequencies to more than 50 companies such as Accenture, Airbus Defence and Space, Audi, Bayerischer Rundfunk, Corning Services, Deutsche Messe, Evonik Industries, Fraunhofer Institute, Huawei Technologies Duesseldorf, Media Broadcast, Mercedes-Benz, NTT DATA Deutschland and Rohde & Schwarz.

Japan in December 2019, the implementation of Local 5G regulations began, and the government has started treating licence applications for certain spectrum with a higher priority. In locations where the progress of area-wide deployment of mobile service providers is slow, Local 5G, which can be implemented more quickly, can be introduced before the normal mobile networks become available. Local 5G also has performance settings that are flexible, and can be modified for various purposes. Additionally, compared to earlier mobile standards, Local 5G is less affected by telecommunication system failures and disasters in other locations.

Companies and local governments are conducting regional tests of Local 5G for development purposes, using combinations of different spectrum in different environments (cities, rural areas, indoors, etc). These tests will help determine, among other things, whether Local 5G can meet regional community needs. 5G has been launched for both industries and consumers. Local 5G is used in industrial sectors such as agriculture, infrastructure and construction, healthcare, manufacturing, education, security, entertainment, tourism and mobility.

Attachment 2

Actual time taken in the past for processing of CMRTS applications

S. No.	Name of Captive User	Date of CMRTS Application	Date of Signing of CMRTS License	Time Taken (Years)	Reasons for delay
1	Noida Metro	1-Oct-16	19-Jan-18	1.3 years	
2	Ahmadabad Metro	4-Apr-16	6-Nov-18	2.6 years	Original application
		17-Apr-18			Revised Application with additional documents as asked for
3	Navi Mumbai Metro	25-Apr-16	6-Oct-17	1.5 years	NMML1 project was delayed due to Infra readiness issue by end customer. later CIDCO kept following up with DoT
4	Kolkata Metro	31-May-14	23-Nov-15	1.5 years	