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**India**

**response to questionnaire ON regulatory information for implementation IMT network in Asia-Pacific Region**

**Question 1:**

**Institution/Company Information and Profile**

**Response 1:**

Name of the institution : Department of Telecommunication, India

Name of contact person : Wireless Adviser, to the Government of India

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My institution is (please choose) : Department of Telecommunications, India

**Question 2:**

Which IMT technology being use and will be used or technology neutral in these bands?

Please fill in the frequency bands used for IMT and specify which IMT technology (e.g. WCDMA, HSPA, LTE, LTE-A, TDD-LTE, 3GPP Release 10, …) being used, if not IMT please answer “non-IMT”.

**Response 2:** In India, DoT has adopted the policy of technology neutrality for IMT bands. The licensee is responsible to provide the details of the technology proposed to be deployed for operation of the service. The technology needs to be based on standards issued by ITU/Telecom Engineering Center (TEC) of the Department of Telecommunications, Government of India (DoT) or any other International Standards Organization/ bodies/Industry. Any digital technology having been used for a customer base of one lakh or more for a continuous period of one year anywhere in the world, is permissible for use regardless of its changed versions.

The Table 1. below indicates the technology currently in use by different operators in India. It is difficult to provide exact frequency blocks and channel bandwidths as India has 22 service areas with different assignments to different licenses.

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| --- | --- |
| **Frequency Band  (MHz)** | **IMT Technology** |
|  |  |
| B5 : 850 | CDMA, LTE |
| B8 : 900 | GSM, HSPA |
| B3 : 1800 | LTE , GSM |
| B1 : 2100 | HSPA |
| B40 : 2300 | LTE (TDD) |
| B41 : 2500 | LTE |

**Table 1. Frequency Band and Technology Used**

**Question 3:**

Please provide (or refer to) characteristics, and protection criteria, for implementing the IMT systems/networks in Question 2, and similar information for non-IMT services, within the IMT band and in the neighboring bands.

**Response 3:** In India, the DoT has clearly demarcated the usage of IMT spectrum amongst various users and necessary protection in terms of suitable guard bands has been provided. All these assignments are monitored for any kind of interference including interference from across the borders.

**Question 4:**

Which case of coexistence as illustrated below and the technical conditions must be applied to each IMT block (e.g power limit, emission mask for spectrum block, pfd limit, …) to support technology neutrality and spectrum efficiency?

|  |  |  |
| --- | --- | --- |
| Frequency band (MHz) | Case | Technical condition |
| All bands | A | power limit and emission mask for spectrum block. Additional restrictions for edge of block are placed on TDD spectrum |
| B | power limit and emission mask for spectrum block. Notional receivers for the IMT services are derived for each band for coordination purposes. |
| C | power limit and emission mask for spectrum block. Notional receivers for the IMT services are derived for each band for coordination purposes. |
| D | Propagation model and Level of Protection limit at boundary |
| E | Propagation model and Level of Protection limit at boundary |



Case A: coexistence between IMT block and IMT in adjacent block in same IMT band

Case B: coexistence between IMT block and non-IMT in adjacent block in same IMT band

Case C: coexistence between IMT block in IMT band and non-IMT block in adjacent band

Case D: coexistence between IMT block and non-IMT block co-channel but adjacent geographical area

Case E: coexistence between IMT block and other IMT block co-channel but adjacent geographical area