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| APTlogogreen3 | ASIA-PACIFIC TELECOMMUNITY | **Document No.:** |
| **The 23nd Meeting of the APT Wireless Group (AWG-23)** | **AWG-23/INP-67** | |
| 9 – 13 April 2018, Da Nang City, Socialist Republic of Viet Nam | 02 April 2018 | |

**RESPONSE TO**

**NEW QUESTIONNAIRE ON REGULATORY INFORMATION FOR IMPLEMENTATION IMT NETWORK IN ASIA-PACIFIC REGION**

**Question 1:Institution/Company Information and Profile**

Name of the institution : The Authority of Radio Frequency Management

Name of contact person: NGUYEN ANH TUAN

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My institution is (please choose) : Regulator

**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”.

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| **Frequency band**  **(MHz)** | **Frequency Block (MHz)** | | **Operator** | **IMT Technology** | **Channel bandwidth (MHz)** |
| **Uplink** | **Downlink** |
| 703-748/ 758-803 | Planing | Planing | 3-4 operators |  | 5, 10,15 MHz |
| 824-835/ 869-880 | 824-835 | 869-880 | Considering licensing to a operator |  |  |
| 880 – 915/ 925 – 960 | 880 – 890 | 925 – 935 | Vietnamobile | non-IMT (GSM)  WCDMA  LTE | 0.2kHz (GSM)  4,2 MHz (WCDMA)  3 MHz (LTE) |
| 890,1 – 898,5 | 935,1 – 943,5 | VNPT | non-IMT (GSM)  WCDMA | 0.2 kHz(GSM)  4,2 MHz (WCDMA) |
| 898,5 – 906,7 | 943,5 – 951,7 | Viettel | non-IMT (GSM) | 0.2 kHz (GSM) |
| 906,7-914,9 | 951,7-959,9 | Mobifone | non-IMT (GSM)  WCDMA | 0.2 kHz(GSM)  4,2 MHz (WCDMA) |
| 1710 – 1785/ 1805 –1880 | 1710 – 1730 | 1805 – 1825 | VNPT | non-IMT (GSM)  LTE | 0.2 kHz (GSM)  10 MHz (LTE) |
| 1730 – 1750 | 1825 – 1845 | Mobifone | non-IMT (GSM)  LTE | 0.2 kHz  (GSM)  10 MHz  (LTE) |
| 1750 – 1770 | 1845 – 1865 | Viettel | non-IMT (GSM)  LTE | 0.2 kHz  (GSM)  10 MHz (LTE) |
| 1770 – 1785 | 1865 – 1880 | Gtel | non-IMT (GSM) | 0.2 kHz |
| 1920-1980/ 2110-2170 | 1920-1935 | 2110-2125 | Mobifone | WCDMA | 5 MHz |
| 1935-1950 | 2125-2140 | Viettel | WCDMA | 5 MHz |
| 1950-1965 | 2140-2155 | Vietnamobile -Viettel | WCDMA | 5 MHz |
| 1965-1980 | 2155-2170 | VNPT | WCDMA | 5 MHz |
| 2300-2400 | 2300-2330 | 2300-2330 | not licensed yet |  |  |
| 2330-2360 | 2330-2360 |  |  |
| 2360-2390 | 2360-2390 |  |  |
| 2500-2570/  2620-2690 | 2500-2510 | 2620-2630 | considering licensing in 2018-2019  (maximum  4 operators) | LTE/LTE-A | 10-20 MHz |
| 2510-2530 | 2630-2650 |  |  |
| 2530-2550 | 2650-2670 |  |  |
| 2550-2570 | 2670-2690 |  |  |

**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.

National technical regulation:

* QCVN 110:2017/BTTTT on Universal Terrestrial Radio Access (E-UTRA) Base Stations (BS) (refer to ETSI EN 301 908-1 V11.1.1 (2016-07) and ETSI EN 301 908-14 V11.1.1 (2016-05))
* QCVN 41:2016/BTTTT on GSM base stations (refer to ETSI EN 301 502 v12.1.1 (2015-03))
* QCVN 16:2010/BTTTT on base stations for W-CDMA FDD (refer to ETSI EN 301 908-3 V2.2.1 (2003-10), ETSI EN 301 908-1 V2.2.1 (2003-10) and TS 125 141 V6.4.0 (2003-12))
* QCVN: 47:2015/BTTTT on Radio spectrum and radiation of Radio communications equipments

**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?

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| **Frequency band (MHz)** | **Case** | **Technical condition** |
| 880 – 915/ 925 – 960 | B, C,D,E | QCVN 110:2017/BTTTT  QCVN 41:2016/BTTTT  QCVN: 47:2015/BTTTT |
| 1710 – 1785/ 1805 –1880 | B, C | QCVN 110:2017/BTTTT  QCVN 41:2016/BTTTT  QCVN: 47:2015/BTTTT |
| 1920-1980/2110-2170 | A | QCVN 16:2010/BTTTT QCVN: 47:2015/BTTTT |



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

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