#### 5.2.4.1 Compliance template for services

|  |  |  |
| --- | --- | --- |
|  | **Service capability requirements** | **Evaluator’s comments** |
| **5.2.4.1.1** | **Support for wide range of services**  Is the proposal able to support a range of services across different usage scenarios (eMBB, URLLC, and mMTC)?: *YES*  Specify which usage scenarios (eMBB, URLLC, and mMTC) the candidate RIT or candidate SRIT can support.(1)  *The RIT can support eMBB, URLLC and mMTC usage scenarios.* | *The assessment of service requirement follows the evaluation method as defined in Section 7.3.3 in Report ITU-R M.2412.* |
| (1) Refer to the process requirements in IMT-2020/2. | | |

#### 5.2.4.2 Compliance template for spectrum

|  |  |
| --- | --- |
|  | **Spectrum capability requirements** |
| **5.2.4.2.1** | **Frequency bands identified for IMT**  Is the proposal able to utilize at least one frequency band identified for IMT in the ITU Radio Regulations? : *YES*  Specify in which band(s) the candidate RIT or candidate SRIT can be deployed.  *The supported frequency bands identified for IMT are provided in item 5.2.3.2.8.3 in characteristics template for the RIT. See the table for frequency range 1 (FR1) and range 2 (FR2).* |
| **5.2.4.2.2** | **Higher Frequency range/band(s)**  Is the proposal able to utilize the higher frequency range/band(s) above 24.25 GHz? : *YES*  Specify in which band(s) the candidate RIT or candidate SRIT can be deployed.  NOTE 1 – In the case of the candidate SRIT, at least one of the component RITs need to fulfil this requirement.  *The supported frequency bands above 24.25 GHz are provided in item 5.2.3.2.8.3 in characteristics template for the RIT. See the table for frequency range 2 (FR2).* |

#### 5.2.4.3 Compliance template for technical performance

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Minimum technical performance requirements item (5.2.4.3.x), units, and Report ITU-R M.2410-0 section reference(1)** | | **Category** | | | **Required value** | **Value(2)** | **Requirement met?** | **Comments (3)** |
|  | | **Usage scenario** | **Test environment** | **Downlink or uplink** |  |  |  |  |
| **5.2.4.3.1** Peak data rate (Gbit/s) *(4.1)* | | eMBB | Not applicable | Downlink | 20 | 21.1 – 140.2 | Yes | 16 Component carriers  Across all duplexing |
| Uplink | 10 | 16.6 - 64.6 | Yes |
| **5.2.4.3.2** Peak spectral efficiency (bit/s/Hz) *(4.2)* | | eMBB | Not applicable | Downlink | 30 | 30.4 - 48.9 | Yes | Across all duplexing schemes |
| Uplink | 15 | 18.2 - 25.8 | Yes |
| **5.2.4.3.3** User experienced data rate (Mbit/s) *(4.3)* | | eMBB | Dense Urban – eMBB | Downlink | 100 | 148.4 | Yes | TDD assuming BW of 800Mhz. |
| 164 | Yes | FDD assuming BW of 400MHz |
| Uplink | 50 | 63.36 | Yes | TDD assuming BW of 800Mhz |
| 88 | Yes | FDD assuming BW of 400MHz |
| **5.2.4.3.4** 5th percentile user spectral efficiency (bit/s/Hz) *(4.4)* | | eMBB | Indoor Hotspot – eMBB | Downlink | 0.3 | 0.32 | Yes | FDD Configuration A |
| 0.32 | Yes | TDD Configuration A |
| Uplink | 0.21 | 0.34 | Yes | FDD Configuration A |
| 0.33 | Yes | TDD Configuration A |
| eMBB | Dense Urban – eMBB | Downlink | 0.225 | 0.34 | Yes | FDD Configuration A |
| 0.28 | Yes | TDD Configuration A |
| Uplink | 0.15 | 0.22 | Yes | FDD Configuration A |
| 0.18 | Yes | TDD Configuration A |
| eMBB | Rural – eMBB | Downlink | 0.12 | 0.17 | Yes | FDD Configuration A |
| 0.33 | Yes | FDD Configuration B |
| 0.24 | Yes | FDD Configuration C |
| 0.16 | Yes | TDD Configuration A |
| 0.34 | Yes | TDD Configuration B |
| 0.29 | Yes | TDD Configuration C |
| Uplink | 0.045 | 0.19 | Yes | FDD configuration A |
| 0.05 | Yes | FDD Configuration B |
| 0.05 | Yes | FDD Configuration C |
| 0.1 | Yes | TDD Configuration A |
| 0.05 | Yes | TDD Configuration B |
| 0.05 | Yes | TDD Configuration C |
| **5.2.4.3.5** Average spectral efficiency (bit/s/Hz/ TRxP) *(4.5)* | | eMBB | Indoor Hotspot – eMBB | Downlink | 9 | 10.02 | Yes | FDD Configuration A |
| 9.94 | Yes | TDD Configuration A |
| Uplink | 6.75 | 8.47 | Yes | FDD Configuration A |
| 8.03 | Yes | TDD Configuration A |
| eMBB | Dense Urban – eMBB | Downlink | 7.8 | 13.09 | Yes | FDD Configuration A |
| 12.65 | Yes | TDD Configuration A |
| Uplink | 5.4 | 7.26 | Yes | FDD Configuration A |
| 6.63 | Yes | TDD Configuration A |
| eMBB | Rural – eMBB | Downlink | 3.3 | 6.49 | Yes | FDD configuration A |
| 14.85 | Yes | FDD Configuration B |
| 8.47 | Yes | FDD Configuration C |
| 6.05 | Yes | TDD Configuration A |
| 14.74 | Yes | TDD Configuration B |
| 8.14 | Yes | TDD Configuration C |
| Uplink | 1.6 | 5.71 | Yes | FDD configuration A |
| 5.51 | Yes | FDD Configuration B |
| 3.37 | Yes | FDD Configuration C |
| 4.62 | Yes | TDD Configuration A |
| 5.06 | Yes | TDD Configuration B |
| 2.75 | Yes | TDD Configuration C |
| **5.2.4.3.6** Area traffic capacity (Mbit/s/m2) *(4.6)* | | eMBB | Indoor-Hotspot – eMBB | Downlink | 10 | 11.70 | Yes | FDD Configuration A |
| 10.51 | Yes | TDD Configuration A |
| **5.2.4.3.7** User plane latency (ms) *(4.7.1)* | | eMBB | Not applicable | Downlink | 4 | 0.28 – 3.19 | Yes | Across Duplexing, Resource Mapping Type and UE capabilities |
| Uplink | 0.28 - 3.84 | Yes |
| URLLC | Not applicable | Downlink | 1 | 0.23 - 0.99 | Yes | Across Duplexing, Resource Mapping Type and UE capabilities |
| Uplink | 0.24 - 0.98 | Yes |
| **5.2.4.3.8** Control plane latency (ms) *(4.7.2)* | | eMBB | Not applicable | Not applicable | 20 | 11.3 - 18.8 | Yes | Across Duplexing, Resource Mapping Type and UE capabilities |
| URLLC | Not applicable | Not applicable | 20 | 11.3 - 18.8 | Yes | Across Duplexing, Resource Mapping Type and UE capabilities |
| **5.2.4.3.9** Connection density (devices/km2) *(4.8)* | | mMTC | Urban Macro – mMTC | Uplink | 1 000 000 | 33,527,330 /180 kHz | Yes | Configuration A (500m) |
| 2,123,296/ 180 kHz | Yes | Configuration B (1732m) |
| **5.2.4.3.10** Energy efficiency *(4.9)* | | eMBB | Not applicable | Not applicable | Capability to support a high sleep ratio and long sleep duration | Sleep ratio:  80% - 99.87%  Sleep duration:  Up to 159ms | Yes | Network side |
|  | Sleep ratio:  84.2% - 99.5%  Sleep duration:  2.546s – 8.627s | Yes | Device side |
| **5.2.4.3.11** Reliability *(4.10)* | | URLLC | Urban Macro –URLLC | Downlink | 1-10−5 success probability of transmitting a layer 2 PDU (protocol data unit) of size 32 bytes within 1 ms in channel quality of coverage edge  99.999% | 99.9996% | Yes | FDD Configuration A |
| 99.9992% | Yes | FDD Configuration B |
| Uplink | 99.99999% | Yes | FDD Configuration A |
| 99.99999% | Yes | FDD Configuration B |
| **5.2.4.3.12** Mobility classes *(4.11)* | | eMBB | Indoor Hotspot – eMBB | Uplink | Stationary, Pedestrian | Stationary, Pedestrian | Yes | For all evaluation configurations in Indoor Hotspot – eMBB. |
| eMBB | Dense Urban – eMBB | Uplink | Stationary, Pedestrian, Vehicular (up to 30 km/h) | Stationary, Pedestrian,  Vehicular (up to 30 km/h) | Yes | For all evaluation configurations in Dense Urban – eMBB |
| eMBB | Rural – eMBB | Uplink | Pedestrian, Vehicular, High speed vehicular | Pedestrian, Vehicular, High speed vehicular | Yes | For all evaluation configurations in Rural - eMBB |
| **5.2.4.3.13**  Mobility Traffic channel link data rates (bit/s/Hz) *(4.11)* | | eMBB | Indoor Hotspot – eMBB | Uplink | 1.5 (10 km/h) | 2.61 | Yes | FDD Configuration A |
| eMBB | Dense Urban – eMBB | Uplink | 1.12 (30 km/h) | 2.8 | Yes | FDD Configuration A |
| eMBB | Rural – eMBB | Uplink | 0.8 (120 km/h) | 2.65 | Yes | FDD Configuration A |
| 0.45 (500 km/h) | 2.52 | Yes |
| 0.8 (120 km/h) | 2.91 | Yes | FDD Configuration B |
| 0.45 (500 km/h) | 2.72 | Yes |
| **5.2.4.3.14** Mobility interruption time (ms)  *(4.12)* | | eMBB and URLLC | Not applicable | Not applicable | 0 | 0 | Yes |  |
| **5.2.4.3.15** Bandwidth and Scalability *(4.13)* | | Not applicable | Not applicable | Not applicable | At least 100 MHz | 800 MHz - 6.4 GHz | Yes |  |
| Up to 1 GHz |  | Yes |
| Support of multiple different bandwidth values | 3 - 13 different component carrier bandwidth values | Yes |
|  | (1) As defined in Report ITU-R M.2410-0.  (2) According to the evaluation methodology specified in Report ITU-R M.2412-0.  (3) Proponents should report their selected evaluation methodology of the Connection density, the channel model variant used, and evaluation configuration(s) with their exact values (e.g. antenna element number, bandwidth, etc.) per test environment, and could provide other relevant information as well. For details, refer to Report ITU-R M.2412-0, in particular, § 7.1.3 for the evaluation methodologies, § 8.4 for the evaluation configurations per each test environment, and Annex 1 on the channel model variants.  (4) Refer to § 7.3.1 of Report ITU-R M.2412-0. | | | | | | | |