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| **Radiocommunication Study Groups** |  |
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| Received: 2 October 2018 | **Document 5D/1077-E** |
| **3 October 2018** |
| **English only  TECHNOLOGY ASPECTS** |
| Korea (Republic of) | |
| Second submiSSION of A candidate TECHNOLOGY of imt-2020 | |
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At the 28th meeting of Working Party 5D (WP 5D) in October 2017, the Republic of Korea announced the intention (Document [5D/722](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5D-C-0722)) to submit a candidate IMT-2020 technology in order to support ITU activity for the development of IMT-2020. Accordingly, at the 29th meeting of WP 5D in February 2018, the Republic of Korea submitted the initial description template (Document [5D/819](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5D-C-0819)) to propose a candidate radio interface technology, which describes a proposed RIT developed in accordance with the 3GPP New Radio (NR) Technical Specifications (Release 15).

As received at the att.7.4 to Document [5D/1011](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5D-C-1011), the Republic of Korea proposes the updated submission of a candidate technology of IMT-2020 in accordance with the latest 3GPP New Radio (NR) Technical Specifications (Release 15). This proposal could be further updated taking into account ITU timeline of the IMT-2020 process and 3GPP activities.

**Attachment:** 1

ATTACHMENT

Submission of a Candidate IMT-2020 Radio Interface Technology (RIT)

This document comprises four parts: Part 1 includes the indication to the compliance with ITU-R IPR policy and the declaration of version of minimum requirement, Part 2 includes the Description Template, Part 3 includes Compliance Templates which is defined in Report ITU-R M.2411, Part 4 includes self-evaluation report.

Part 1

## 1-1 IPR Policy compliance

As mentioned in Report ITU-R M.2411, proponents and IPR holders should indicate their compliance with the ITU policy on intellectual property rights (see NOTE 2 in section A2.6 of Resolution ITU-R 1-7), as specified in the Common Patent Policy for ITU-T/ITU-R/ISO/IEC available at [http://www.itu.int/ITU‑T/dbase/patent/patent-policy.html](http://www.itu.int/ITUT/dbase/patent/patent-policy.html).

The Republic of Korea, as a proponent, supports the works of 3GPP related to submission of proposals for candidate RIT for IMT-2020. Regarding the matters of IPR policy compliance, the Republic of Korea delegates authority to Telecommunications Technology Association (TTA).

TTA, as one of the organization partners of 3GPP, does comply with the ITU policy on IPR. The TTA, as a Standards Developing Organization (SDO), maintains a patent policy applicable to the development of its standards. TTA patent policy is described in “Guidelines for the Handling of Intellectual Property Rights in connection with TTA Standards” < <http://tta.or.kr/English/TTArules-5.pdf> >.

TTA will maintain a list of IPR declarations which has been received from patent holders in regards to 3GPP technology including its amendments. The list of IPR declarations will be available at the following URL: < <http://www.tta.or.kr/eng/new/standardization/IMT.jsp> >

## 1-2 Declaration of version

Report ITU-R M.2411 specifies that IMT-2020 proposal must “indicate the version of the minimum technical requirements and evaluation criteria of the IMT-2020 currently in force that it is intended for and make reference to the associated requirements.”

• The versions used are:

– [Report ITU-R M.2411](https://www.itu.int/pub/R-REP-M.2411) Requirements, evaluation criteria and submission templates for the development of IMT-2020 (Approved 2017-11);

– [Report ITU-R M.2410](https://www.itu.int/pub/R-REP-M.2410-2017) Minimum requirements related to technical performance for IMT-2020 radio interface(s) (Approved 2017-11);

– [Report ITU-R M.2412](https://www.itu.int/pub/R-REP-M.2412) Guidelines for evaluation of radio interface technologies for IMT-2020 (Approved 2017-10).

Part 2

## 2-1 Description template – Characteristics

The Republic of Korea has provided description templates – characteristics (Rep. ITU-R M.2411 Section 5.2.3.2) for candidate IMT-2020 RIT. See below attachment.



#### 2-2 Description template – Link budget

The Republic of Korea has provided description templates – link budget (Rep. ITU-R M.2411 Section 5.2.3.3) for candidate IMT-2020 RIT. See below attachment.



Part 3

## 3-1 Compliance template for services

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|  | 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 / NO  Specify which usage scenarios (eMBB, URLLC, and mMTC) the candidate RIT or candidate SRIT can support.(1)  *The NR RIT can support eMBB, URLLC and mMTC usage scenarios.* | *Should be provided by IEGs.* |
| (1) Refer to the process requirements in IMT-2020/2. | | |

## 3-2 Compliance template for spectrum

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|  | 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 / NO  Specify in which band(s) the candidate RIT or candidate SRIT can be deployed.  *The RIT will be capable of supporting IMT identified bands including following frequency bands of 3GPP. Further considerations may be expected in defined bands for 3GPP NR. Introduction of other IMT identified bands are also not precluded in the future.*  *Frequency range 1 (450 MHz – 6 GHz):*   |  |  |  | | --- | --- | --- | | *NR operating band* | *Uplink (UL) operating band*  *BS receive / UE transmit*  FUL\_low *–* FUL\_high | *Downlink (DL) operating band*  *BS transmit / UE receive*  FDL\_low *–* FDL\_high | | *n78* | *3300 MHz – 3800 MHz* | *3300 MHz – 3800 MHz* | |
| **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 / NO  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 RIT will be capable of supporting higher frequency range/band(s) including following bands of 3GPP. Further considerations may be expected in defined bands for 3GPP NR. Introduction of other higher frequency bands are also not precluded in the future.*  *Frequency range 2 (24.25 GHz – 52.6 GHz):*   |  |  |  | | --- | --- | --- | | *NR operating band* | *Uplink (UL) operating band*  *BS receive / UE transmit*  FUL\_low *–* FUL\_high | *Downlink (DL) operating band*  *BS transmit / UE receive*  FDL\_low *–* FDL\_high | | *n257* | *26.5 GHz – 29.5 GHz* | *26.5 GHz – 29.5 GHz* | | *n258* | *24.25 GHz – 27.5 GHz* | *24.25 GHz – 27.5 GHz* | |

## 3-3 Compliance template for technical performance

The Republic of Korea has been provided compliance template for technical performance (Rep. ITU-R M.2411 Section 5.2.4.3) for candidate IMT-2020 RIT. See below attachment.



Part 4

## 4-1 Self-evaluation report

The Republic of Korea endorses a preliminary self-evaluation [(3GPP TR 37.910 V1.0.0)](http://www.3gpp.org/ftp/Specs/archive/37_series/37.910/).

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