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| **Radiocommunication Study Groups** |  |
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| Source: Document 5D/TEMP/119(Rev.1) | **Document IMT-2020/49-E** |
| **26 February 2020** |
| **English only** |
| Working Party 5D | |
| SUMMARY RESULTS OF Evaluation by Trans-Pacific Evaluation Group (TPCEG) of IMT‑2020 candidate technology submission in Document(s) IMT‑2020/13, IMT-2020/14, IMT-2020/15, IMT-2020/16, and IMT‑2020/17(Rev.1) (3GPP) | |
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This document summarizes the evaluation results and activities identified for the IMT-2020 candidate technology submission(s) in Documents [IMT-2020/13](https://www.itu.int/md/R15-IMT.2020-C-0013/en), [IMT-2020/14](https://www.itu.int/md/R15-IMT.2020-C-0014/en), [IMT-2020/15](https://www.itu.int/md/R15-IMT.2020-C-0015/en), [IMT-2020/16](https://www.itu.int/md/R15-IMT.2020-C-0016/en), and [IMT-2020/17(Rev.1)](https://www.itu.int/md/R15-IMT.2020-C-0017/en) (3GPP)from Trans-Pacific Evaluation Group*.*

# 1 Background

The period from October 2018 (the 31st meeting of Working Party 5D) to February 2020 (the 34th meeting of Working Party 5D) has been designated for evaluation of the IMT-2020 candidate technology submissions by Independent Evaluation Groups.

The Trans-Pacific Evaluation Groupis a registered Independent Evaluation Group. At the 34th meeting of Working Party 5D, a final Evaluation Report on IMT-2020 candidate technology submissions in Documents IMT-2020/13, IMT-2020/14, IMT-2020/15, IMT-2020/16, and IMT‑2020/17(Rev.1) (3GPP)was submitted by Trans-Pacific Evaluation Group([5D/94](https://www.itu.int/md/R19-WP5D-C-0094/en)). WP 5D has reviewed the evaluation report and will consider it further in the IMT-2020 development process.

# 2 Evaluation summary for an SRIT for IMT-2020 candidate technology in Document(s) IMT-2020/13

## 2.1 Use of information in Report ITU-R M.2412

Does Independent Evaluation Group confirm use of Report ITU-R M.2412 in their work?

☑ Yes 🞎 No

## 2.2 Provision of compliance templates

Provision of compliance template for services (section 5.2.4.1 of Report ITU-R M.2411)

☑ Yes 🞎 No

Provision of compliance template for spectrum (section 5.2.4.2 of Report ITU-R M.2411)

☑ Yes 🞎 No

Provision of compliance template for technical performance (section 5.2.4.3 of Report ITU-R M.2411)

☑ Yes 🞎 No

## 2.3 Summary of conclusions of the evaluation report

Does the Evaluation Report indicate that the candidate technology meet minimum service and spectrum requirements?

Service requirements: ☑ Yes 🞎 No

Spectrum requirements: ☑ Yes 🞎 No

Which test environments have been considered in the evaluation report? What is outcome of the evaluation?

|  |  |
| --- | --- |
| Test environment | Does the evaluation report indicate that the minimum technical performance requirements are met in the test environment?  Yes: all technical performance requirements are met.  No: at least one technical performance requirement is not met. |
| ☑ Indoor Hotspot – eMBB | ☑ Yes 🞎 No |
| ☑ Dense Urban – eMBB | ☑ Yes 🞎 No |
| ☑ Rural – eMBB | ☑ Yes 🞎 No |
| ☑ Urban Macro – mMTC | ☑ Yes 🞎 No |
| ☑ Urban Macro – URLLC | ☑ Yes 🞎 No |

## 2.4 Additional evaluation methodologies and assumptions

Have any additional evaluation methodologies or assumptions that had not been included in the Report ITU-R M.2412 been used in evaluation?

🞎 Yes ☑ No

# 3 Evaluation summary for a component RIT for IMT-2020 candidate technology in Document(s) IMT-2020/13 (LTE)

## 3.1 Use of information in Report ITU-R M.2412

Does Independent Evaluation Group confirm use of Report ITU-R M.2412 in their work?

☑ Yes 🞎 No

## 3.2 Provision of compliance templates

Provision of compliance template for services (section 5.2.4.1 of Report ITU-R M.2411)

☑ Yes 🞎 No

Provision of compliance template for spectrum (section 5.2.4.2 of Report ITU-R M.2411)

☑ Yes 🞎 No

Provision of compliance template for technical performance (section 5.2.4.3 of Report ITU-R M.2411)

☑ Yes 🞎 No

## 3.3 Summary of conclusions of the evaluation report

Does the Evaluation Report indicate that the candidate technology meets minimum service and spectrum requirements?

Service requirements: ☑ Yes 🞎 No

Spectrum requirements: ☑ Yes 🞎 No

Which test environments have been considered in the evaluation report? What is outcome of the evaluation?

|  |  |
| --- | --- |
| Test environment | Does the evaluation report indicate that the minimum technical performance requirements are met in the test environment?  Yes: all technical performance requirements are met.  No: at least one technical performance requirement is not met. |
| ☑ Indoor Hotspot – eMBB | ☑ Yes 🞎 No |
| ☑ Dense Urban – eMBB | ☑ Yes 🞎 No |
| ☑ Rural – eMBB | ☑ Yes 🞎 No |
| ☑ Urban Macro – mMTC | ☑ Yes 🞎 No |
| 🞎 Urban Macro – URLLC | 🞎 Yes 🞎 No |

## 3.4 Additional evaluation methodologies and assumptions

Have any additional evaluation methodologies or assumptions that had not been included in the Report ITU-R M.2412 been used in evaluation?

🞎 Yes ☑ No

# 4 Evaluation summary for a component RIT for IMT-2020 candidate technology in Document(s) IMT-2020/13 (NR)

## 4.1 Use of information in Report ITU-R M.2412

Does Independent Evaluation Group confirm use of Report ITU-R M.2412 in their work?

☑ Yes 🞎 No

## 4.2 Provision of compliance templates

Provision of compliance template for services (section 5.2.4.1 of Report ITU-R M.2411)

☑ Yes 🞎 No

Provision of compliance template for spectrum (section 5.2.4.2 of Report ITU-R M.2411)

☑ Yes 🞎 No

Provision of compliance template for technical performance (section 5.2.4.3 of Report ITU-R M.2411)

☑ Yes 🞎 No

## 4.3 Summary of conclusions of the evaluation report

Does the Evaluation Report indicate that the candidate technology meet minimum service and spectrum requirements?

Service requirements: ☑ Yes 🞎 No

Spectrum requirements: ☑ Yes 🞎 No

Which test environments have been considered in the evaluation report? What is outcome of the evaluation?

|  |  |
| --- | --- |
| Test environment | Does the evaluation report indicate that the minimum technical performance requirements are met in the test environment?  Yes: all technical performance requirements are met.  No: at least one technical performance requirement is not met. |
| ☑ Indoor Hotspot – eMBB | ☑ Yes 🞎 No |
| ☑ Dense Urban – eMBB | ☑ Yes 🞎 No |
| ☑ Rural – eMBB | ☑ Yes 🞎 No |
| ☑ Urban Macro – mMTC | ☑ Yes 🞎 No |
| ☑ Urban Macro – URLLC | ☑ Yes 🞎 No |

## 4.4 Additional evaluation methodologies and assumptions

Have any additional evaluation methodologies or assumptions that had not been included in the Report ITU-R M.2412 been used in evaluation?

🞎 Yes ☑ No

# 5 Evaluation summary for a RIT for IMT-2020 candidate technology in Document(s) IMT-2020/14

## 5.1 Use of information in Report ITU-R M.2412

Does Independent Evaluation Group confirm use of Report ITU-R M.2412 in their work?

☑ Yes 🞎 No

## 5.2 Provision of compliance templates

Provision of compliance template for services (section 5.2.4.1 of Report ITU-R M.2411)

☑ Yes 🞎 No

Provision of compliance template for spectrum (section 5.2.4.2 of Report ITU-R M.2411)

☑ Yes 🞎 No

Provision of compliance template for technical performance (section 5.2.4.3 of Report ITU-R M.2411)

☑ Yes 🞎 No

## 5.3 Summary of conclusions of the evaluation report

Does the Evaluation Report indicate that the candidate technology meets minimum service and spectrum requirements?

Service requirements: ☑ Yes 🞎 No

Spectrum requirements: ☑ Yes 🞎 No

Which test environments have been considered in the evaluation report? What is outcome of the evaluation?

|  |  |
| --- | --- |
| Test environment | Does the evaluation report indicate that the minimum technical performance requirements are met in the test environment?  Yes: all technical performance requirements are met.  No: at least one technical performance requirement is not met. |
| ☑ Indoor Hotspot – eMBB | ☑ Yes 🞎 No |
| ☑ Dense Urban – eMBB | ☑ Yes 🞎 No |
| ☑ Rural – eMBB | ☑ Yes 🞎 No |
| ☑ Urban Macro – mMTC | ☑ Yes 🞎 No |
| ☑ Urban Macro – URLLC | ☑ Yes 🞎 No |

## 5.4 Additional evaluation methodologies and assumptions

Have any additional evaluation methodologies or assumptions that had not been included in the Report ITU-R M.2412 been used in evaluation?

🞎 Yes ☑ No

# 6 Evaluation summary for a RIT for IMT-2020 candidate technology in Document(s) IMT-2020/15

## 6.1 Use of information in Report ITU-R M.2412

Does Independent Evaluation Group confirm use of Report ITU-R M.2412 in their work?

☑ Yes 🞎 No

## 6.2 Provision of compliance templates

Provision of compliance template for services (section 5.2.4.1 of Report ITU-R M.2411)

☑ Yes 🞎 No

Provision of compliance template for spectrum (section 5.2.4.2 of Report ITU-R M.2411)

☑ Yes 🞎 No

Provision of compliance template for technical performance (section 5.2.4.3 of Report ITU-R M.2411)

☑ Yes 🞎 No

## 6.3 Summary of conclusions of the evaluation report

Does the Evaluation Report indicate that the candidate technology meets minimum service and spectrum requirements?

Service requirements: ☑ Yes 🞎 No

Spectrum requirements: ☑ Yes 🞎 No

Which test environments have been considered in the evaluation report? What is outcome of the evaluation?

|  |  |
| --- | --- |
| Test environment | Does the evaluation report indicate that the minimum technical performance requirements are met in the test environment?  Yes: all technical performance requirements are met.  No: at least one technical performance requirement is not met. |
| ☑ Indoor Hotspot – eMBB | ☑ Yes 🞎 No |
| ☑ Dense Urban – eMBB | ☑ Yes 🞎 No |
| ☑ Rural – eMBB | ☑ Yes 🞎 No |
| ☑ Urban Macro – mMTC | ☑ Yes 🞎 No |
| ☑ Urban Macro – URLLC | ☑ Yes 🞎 No |

## 6.4 Additional evaluation methodologies and assumptions

Have any additional evaluation methodologies or assumptions that had not been included in the Report ITU-R M.2412 been used in evaluation?

🞎 Yes ☑ No

# 7 Evaluation summary for a RIT for IMT-2020 candidate technology in Document(s) IMT-2020/16

## 7.1 Use of information in Report ITU-R M.2412

Does Independent Evaluation Group confirm use of Report ITU-R M.2412 in their work?

☑ Yes 🞎 No

## 7.2 Provision of compliance templates

Provision of compliance template for services (section 5.2.4.1 of Report ITU-R M.2411)

☑ Yes 🞎 No

Provision of compliance template for spectrum (section 5.2.4.2 of Report ITU-R M.2411)

☑ Yes 🞎 No

Provision of compliance template for technical performance (section 5.2.4.3 of Report ITU-R M.2411)

☑ Yes 🞎 No

## 7.3 Summary of conclusions of the evaluation report

Does the Evaluation Report indicate that the candidate technology meets minimum service and spectrum requirements?

Service requirements: ☑ Yes 🞎 No

Spectrum requirements: ☑ Yes 🞎 No

Which test environments have been considered in the evaluation report? What is outcome of the evaluation?

|  |  |
| --- | --- |
| Test environment | Does the evaluation report indicate that the minimum technical performance requirements are met in the test environment?  Yes: all technical performance requirements are met.  No: at least one technical performance requirement is not met. |
| ☑ Indoor Hotspot – eMBB | ☑ Yes 🞎 No |
| ☑ Dense Urban – eMBB | ☑ Yes 🞎 No |
| ☑ Rural – eMBB | ☑ Yes 🞎 No |
| ☑ Urban Macro – mMTC | ☑ Yes 🞎 No |
| ☑ Urban Macro – URLLC | ☑ Yes 🞎 No |

## 7.4 Additional evaluation methodologies and assumptions

Have any additional evaluation methodologies or assumptions that had not been included in the Report ITU-R M.2412 been used in evaluation?

🞎 Yes ☑ No

# 8 Evaluation summary for a component RIT for IMT-2020 candidate technology in Document(s) IMT-2020/17 (3GPP NR)

## 8.1 Use of information in Report ITU-R M.2412

Does Independent Evaluation Group confirm use of Report ITU-R M.2412 in their work?

☑ Yes 🞎 No

## 8.2 Provision of compliance templates

Provision of compliance template for services (section 5.2.4.1 of Report ITU-R M.2411)

☑ Yes 🞎 No

Provision of compliance template for spectrum (section 5.2.4.2 of Report ITU-R M.2411)

☑ Yes 🞎 No

Provision of compliance template for technical performance (section 5.2.4.3 of Report ITU-R M.2411)

☑ Yes 🞎 No

## 8.3 Summary of conclusions of the evaluation report

Does the Evaluation Report indicate that the candidate technology meet minimum service and spectrum requirements?

Service requirements: ☑ Yes 🞎 No

Spectrum requirements: ☑ Yes 🞎 No

Which test environments have been considered in the evaluation report? What is outcome of the evaluation?

|  |  |
| --- | --- |
| Test environment | Does the evaluation report indicate that the minimum technical performance requirements are met in the test environment?  Yes: all technical performance requirements are met.  No: at least one technical performance requirement is not met. |
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| ☑ Dense Urban – eMBB | ☑ Yes 🞎 No |
| ☑ Rural – eMBB | ☑ Yes 🞎 No |
| ☑ Urban Macro – mMTC | ☑ Yes 🞎 No |
| ☑ Urban Macro – URLLC | ☑ Yes 🞎 No |

## 8.4 Additional evaluation methodologies and assumptions

Have any additional evaluation methodologies or assumptions that had not been included in the Report ITU-R M.2412 been used in evaluation?

🞎 Yes ☑ No

# 9 Evaluation Report

|  |  |  |
| --- | --- | --- |
| The number of the final evaluation report | The name of the final evaluation report | The files of the final evaluation report |
| 5D/94 | Final evaluation report from Trans-Pacific Evaluation Group on the IMT-2020 proposal in documents IMT-2020/3(Rev.4) (“3GPP” under step 3 of the IMT-2020 process) |  |

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