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| --- | --- | --- | --- | --- |
| The International Teleocmmunication Union - Connecting the World. | | **International telecommunication union**  **Telecommunication Standardization Bureau** | |  |
|  | | | Geneva, 25 September 2024 | |
| **Ref:** | **TSB Circular 235**  **SG13/TK** | | **To:**  - Administrations of Member States of the Union;  **Copy to:**  - ITU-T Sector Members;  - ITU-T Associates of Study Group 13;  - ITU Academia;  - The Chairs and Vice-Chairs of Study Groups;  - The Director of the Telecommunication; Development Bureau;  - The Director of the Radiocommunication Bureau. | |
| **Tel:** | +41 22 730 5126 | |
| **Fax:**  **E-mail:** | +41 22 730 5853  [tsbsg13@itu.int](mailto:tsbsg13@itu.int) | |
| **Subject:** | **Questionnaire on Migrating existing mobile network technologies to IMT-2020 and beyond** | | | |

Dear Sir/Madam,

ITU-T Study Group 13 (*Future networks and emerging network technologies*) at its last meeting   
(Geneva, 15 – 26 July 2024) agreed to disseminate the questionnaireon *Migrating existing mobile network technologies to IMT-2020 and beyond.* This questionnaire is targeted to all ITU-T membership.

Study Group 13, Question 5/13 (*Applying Future Networks and innovation in developing countries*), is developing a Supplement on *Guidance on migrating existing mobile network technologies to IMT-2020 and beyond.* The analysis of the results of the survey replies will support the Q5/13 work on the above Supplement.

I invite you to participate in this survey and would appreciate it if you would complete the questionnaire reproduced in **Annex 1** no later than **1 January 2025**. Please note, however, that for more efficient reply consolidation and analysis we kindly request that the following online version of the questionnaire be used: [https://www.research.net/r/LGTH6WV](https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.research.net%2Fr%2FLGTH6WV&data=05%7C02%7Ctsbsg13%40itu.int%7C5ffa8f6c7bbb48a57e9408dcc384649f%7C23e464d704e64b87913c24bd89219fd3%7C0%7C0%7C638600220591859422%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C0%7C%7C%7C&sdata=d%2BDXMJC4TuS8G3N2qcp342SLFGua5dmC4OVhM9PkiOA%3D&reserved=0). The form in Annex 1 could be used in case there are difficulties in using the online one.

I wish to thank you in advance for your participation in this survey. We value your opinion.

|  |  |
| --- | --- |
| Yours faithfully,  Seizo Onoe Director of the Telecommunication Standardization Bureau  **Annex:** 1 |  |

**ANNEX 1  
Questionnaire on Migrating existing mobile network technologies to IMT-2020 and beyond**

Responder’s information

|  |  |
| --- | --- |
| Country: |  |
| Organization: |  |
| Name: |  |
| Job Title: |  |
| Address: |  |
| Telephone: |  |
| E-Mail: |  |

**Instructions:**

Multiple choice to some questions is possible and is welcome.

1. ***Status of IMT-2020 Network deployment***
2. **What type of mobile network technologies is being used in your country?**

GSM (a.k.a. 2G)   
 IMT-2000 (a.k.a. 3G)  
 IMT-Advanced (a.k.a. 4G)  
 Other (Please specify): ………………………………………………………………………………….…………

1. **What is the current status of IMT-2020 (a.k.a. 5G) network deployment in your country?**

Not yet started  
 Planning and assessment phase   
 Spectrum allocation phase  
 Initial deployment phase (including pilot projects)  
 Partial deployment phase  
 Full deployment phase  
 Advanced deployment (i.e.: full deployment of IMT-2020 networks + implementation of advanced features like network slicing and edge computing)   
 Other (Please specify): ……………………………………………………………………………………..…..…

1. **When IMT-2020 services were commercially launched/are planned to be commercially   
   launched for the first time in your country** (Please provide an approximate/expected   
   date):

…………………………………………………………………………………………………………………………………………….

**1.4. How many telecom operators are in your country?**…………………………………………….………..…

**1.5. How many telecom operators have already commercially launched IMT-2020 services in   
 your country?**

0  
 1  
 2  
 3  
 Other (Please specify): …………………………………………………………………………………..….……

**1.6. What percentage of your country's population has currently access to IMT-2020 services?**

0%  
 Less than 10%  
 10-30%  
 30-50%  
 More than 50%  
 Do not know

**1.7. What is the current percentage of IMT-2020 network coverage in your country   
 (geographic perspective)?**

0%  
 Less than 10%  
 10-30%  
 30-50%  
 More than 50%  
 Do not know

**1.8. What scenario was adopted/is planned to be adopted in the migration to IMT-2020   
 networks in your country?**

Leapfrog from GSM to IMT-2020

Leapfrog from IMT-2000 to IMT-2020

Non-Standalone (NSA)

Standalone (SA)

NSA then SA

Other (Please specify): ……………………………………………………………………………………..………

* 1. **What spectrum band has your country used / is your country planning to use   
     for IMT-2020?**

Low-band spectrum (below 1 GHz)

Mid-band spectrum (1-6 GHz)

High-band (millimeter wave) spectrum (above 24 GHz)

Other (Please specify): ………………………………………………………………………………………..……

1. ***Opportunities and challenges of migration to IMT-2020 networks***
2. **What are the benefits of migrating to IMT-2020 networks you have experienced or  
   anticipate?**

Increased network capacity and efficiency

Enhanced Quality of Service (QoS) and Quality of Experience (QoE)

New business opportunities

Support for innovative applications and services

Economic growth and job creation opportunities

Expanded mobile broadband coverage and digital inclusion

Support for digital transformation

Other (Please specify): ………………………………………………………………………………..………

1. **In your opinion, which sectors have benefited/will benefit the most from IMT-2020 services in your country?**

Healthcare

Transportation

Education

Entertainment and media

Manufacturing

Agriculture

Retail

Others (please specify): ………………………………………………….………………………………………

1. **Rate the following concerns about IMT-2020 migration on a scale of 0 to 5 (0 = not  
   concerned, 5 = very concerned):**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **0** | **1** | **2** | **3** | **4** | **5** |
| * High infrastructure cost |  |  |  |  |  |  |
| * Uncertain Return on Investment (RoI) |  |  |  |  |  |  |
| * Deployment complexity |  |  |  |  |  |  |
| * Integration with existing networks |  |  |  |  |  |  |
| * Regulatory issues |  |  |  |  |  |  |
| * Lack of expertise |  |  |  |  |  |  |
| * Site acquisition and permitting (for new infrastructure) |  |  |  |  |  |  |
| * Cybersecurity risks |  |  |  |  |  |  |
| * Data privacy and protection concerns |  |  |  |  |  |  |
| * Possible relational health concerns |  |  |  |  |  |  |
| * Energy consumption |  |  |  |  |  |  |
| * Customer adoption |  |  |  |  |  |  |
| * Device availability and compatibility |  |  |  |  |  |  |
| * Others (Please specify and rate):   …………………………………………………………………………………………... |  |  |  |  |  |  |

1. **What are the main technical challenges you have faced or anticipate when migrating to IMT-2020 networks?**

Interoperability between different vendors’ equipment and technologies  
 Scalability  
 QoS assurance  
 Energy Efficiency  
 Security and Privacy Management  
 Regulatory Compliance  
 NFV and SDN implementation  
 Network Slicing implementation  
 Edge Computing Integration  
 Service Orchestration and Automation  
 Other (Please specify): ………………………………………………………………………………..…………

1. **What strategies have you implemented / do you plan to implement to address the migration challenges?**

………………………………………………………………………………………………………………………………………….

………………………………………………………………………………………………………………………………………….

1. ***Requirements and Standardization needs***
2. **What are the main requirements of migration to IMT-2020 in your country in relation to:**
3. Core Network upgrade:

………………………………………………………………………………………………………………………………………….

1. Backhaul and transport network upgrade:

………………………………………………………………………………………………………………………………………….

1. Access Network upgrade:

………………………………………………………………………………………………………………………………………….

1. Security and privacy:

………………………………………………………………………………………………………………………………………….

1. Service and device Ecosystem:

………………………………………………………………………………………………………………………………………….

1. Regulatory Framework:

………………………………………………………………………………………………………………………………………….

1. Energy Efficiency:

………………………………………………………………………………………………………………………………………….

1. QoS and QoE:

………………………………………………………………………………………………………………………………………….

1. Other requirements:

………………………………………………………………………………………………………………………………………….

1. **Do you have any idea on the standardization activities of ITU-T on IMT-2020 (non-radio aspects)?**

Yes

No

If yes, what activities do you follow or participate in?

………………………………………………………………………………………………………………………………………….

1. **What areas of ITU-T standardization on IMT-2020 (non-radio aspects) interest you the most? rate the following areas on a scale of 0 to 5 (0 = not interested, 5 = very interested):**

Network Function Virtualization (NFV)

Software-Defined Networking (SDN)

Edge Computing

Network Slicing

Artificial Intelligence (AI) and Machine Learning (ML)

Security and Privacy

QoS and QoE

Other (please specify): ……………………………………………………………………….……………………

1. **What area(s) of standardization related to IMT-2020 (non-radio aspects) you think that ITU-T should focus on in the next study period 2025-2028?**

………………………………………………………………………………………………………………………………………….

1. ***Migration strategies and process***
2. **What deployment strategies of IMT-2020 networks were adopted/are planned to be adopted in your country?**

Progressive deployment

Greenfield deployment

Focused use case deployment (prioritization of use-cases)

Private Networks deployment

Collaborative deployment

Other (please specify): ……………………………………………………………………………………….………

1. **Which IMT-2020 use cases were launched/are planned to be launched in your country at the short, middle and long-term following the migration to IMT-2020 network?**

|  |  |  |  |
| --- | --- | --- | --- |
| **IMT-2020 use cases** | **Short-term**  **(within 1 year)** | **Mid-term**  **(1 to 3 years)** | **Long-term**  **(More than 3 years)** |
| * High-Speed mobile Internet Access |  |  |  |
| * Fixed Wireless Access (FWA) |  |  |  |
| * Augmented Reality (AR) and Virtual Reality (VR) |  |  |  |
| * Enhanced entertainment and media (including gaming) |  |  |  |
| * Healthcare applications and telemedicine |  |  |  |
| * Smart agriculture |  |  |  |
| * Smart transportation and autonomous vehicles |  |  |  |
| * Industrial automation and smart factories |  |  |  |
| * Public safety and emergency services |  |  |  |
| * Cloud Computing and Edge Computing: |  |  |  |
| * Environmental monitoring: |  |  |  |
| * Smart Grids and energy management |  |  |  |
| * Smart retail solutions |  |  |  |
| * Education and E-Learning |  |  |  |
| * Other (please specify) :   ………………………………………….…… |  |  |  |

1. **What are the key considerations for prioritizing IMT-2020 use cases in your country? rate the following considerations on a scale of 1 to 5 (1= least important, 5 = most important):**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **1** | **2** | **3** | **4** | **5** |
| * Economic benefits |  |  |  |  |  |
| * Technological maturity |  |  |  |  |  |
| * Alignment with national regulatory frameworks and policies. |  |  |  |  |  |
| * Compliance to standards |  |  |  |  |  |
| * Infrastructure availability |  |  |  |  |  |
| * Societal needs and benefits |  |  |  |  |  |
| * Ease of adoption |  |  |  |  |  |
| * Scalability and sustainability |  |  |  |  |  |
| * Other (please specify and rate): ………………………………………………………………………………….. |  |  |  |  |  |

1. **What steps should be taken to prepare for IMT-2020 migration?**

Strategic Planning  
 Securing budget and funding  
 Training staff and technicians  
 Network assessment  
 Technology Evaluation and Selection (partnering with technology providers)  
 Network architecture design  
 Network Infrastructure deployment  
 Testing and validation  
 Marketing and promotional initiatives for IMT-2020 services  
 Setting-up monitoring and governance frameworks  
 Other (please specify): ……………………………………………………………………………………………

1. ***General Guidance for Network Technologies Migration***

**What general guidelines/recommendations/advice would you like to give to the following stakeholders in order to facilitate the migration from existing mobile network technologies to IMT-2020 and beyond:**

1. Regulators:

………………………………………………………………………………………………………………………………………….

1. Governments and Policy makers:

………………………………………………………………………………………………………………………………………….

1. Network Operators:

………………………………………………………………………………………………………………………………………….

1. Equipment manufacturers:

………………………………………………………………………………………………………………………………………….

1. Customers:

………………………………………………………………………………………………………………………………………….

1. Service developers:

………………………………………………………………………………………………………………………………………….

1. Verticals:

………………………………………………………………………………………………………………………………………….

1. Other guidelines/recommendations/advice:

………………………………………………………………………………………………………………………………………….

*Thank you for your active participation in this survey!*

If you have questions, please, contact us at [tsbsg13@itu.int](mailto:tsbsg13@itu.int).

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