



**Question(s):** 6/11

Geneva, 10-19 May 2023

**TD**

**Source:** Editors

**Title:** Output – initial draft baseline text of draft Recommendation ITU-T Q.PDS  
 “Protocols for supporting data streaming service in IMT-2020 network and beyond”  
 (Geneva, 10-19 May 2023)

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**Abstract:** This is the baseline text of new draft Recommendation Q.PDS “Protocols for data streaming service in IMT-2020 network and beyond”, developed at Q6/11 meeting (10-19 May 2023).

This draft Recommendation is based on C102-R1 reviewed at Q6/11 meeting (10-19 May 2023).

Input	Title	Source	Result and action
C102-R1	Proposal for initiating a new work item on protocols for data streaming service in IMT-2020 network and beyond	China Telecom	Accepted with Modifications

## **Draft new Recommendation ITU-T Q.PDS**

### **Protocols for data streaming service in IMT-2020 network and beyond**

#### **Summary**

This Recommendation aims to specify the signalling requirements, signalling flows and message format for supporting data streaming service in IMT-2020 network and beyond, based on the IMT-2020 architecture and enhance the capabilities to supporting continuous connectivity and SLA requirements for data streaming service.

#### **Keywords**

IMT-2020, data streaming;

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## Draft new Recommendation ITU-T Q.PDS

### Protocols for data streaming service in IMT-2020 network and beyond

#### 1. Scope

This Recommendation specifies signalling requirements, signalling flow and message format for supporting data streaming service in IMT-2020 network and beyond, considering the following issues:

- Overview;
- Signalling requirements for supporting data streaming service in IMT-2020 network and beyond;
- Signalling flow for supporting data streaming service in IMT-2020 network and beyond;
- Message format for supporting data streaming service in IMT-2020 network and beyond.

#### 2. References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

[ITU-T Y.3102] Recommendation ITU-T Y.3102 (2018), *Framework of the IMT-2020 network*.

[ITU-T Y.3104] Recommendation ITU-T Y.3104 (2018), *Architecture of the IMT-2020 network*.

[ITU-T Q.5025] Recommendation ITU-T Q.5025 (2022), *Protocol for managing the user plane function in IMT-2020 networks*.

[ITU-T Q.5001] Recommendation ITU-T Q.5001 (2018), *Signalling requirements and architecture of intelligent edge computing*.

[ITU-T Q.5003] Recommendation ITU-T Q.5003 (2022), *Signalling requirements and architecture of intelligent edge computing*.

[3GPP TS23.501] Recommendation 3GPP TS23.501 R18(2023), *System architecture for the 5G System*

[IETF RFC86] Recommendation IETF RFC86(2013), *Proposal for a Network Standard Format for a Data Stream to Control Graphics Display*

TBD

#### 3. Definitions

### **3.1. Terms defined elsewhere**

This Recommendation uses the following terms defined elsewhere:

TBD

### **3.2. Terms defined in this Recommendation**

This Recommendation defines the following terms:

TBD

## **4. Abbreviations and acronyms**

This Recommendation uses the following abbreviations and acronyms:

TBD

## **5. Conventions**

In this Recommendation:

The keywords "is required to" indicate a requirement which must be strictly followed and from which no deviation is permitted, if conformance to this Recommendation is to be claimed.

The keywords "is recommended" indicate a requirement which is recommended but which is not absolutely required. Thus, this requirement need not be present to claim conformance.

The keywords "can optionally" indicate an optional requirement which is permissible, without implying any sense of being recommended. This term is not intended to imply that the vendor's implementation must provide the option, and the feature can be optionally enabled by the network operator/service provider. Rather, it means the vendor may optionally provide the feature and still claim conformance with this Recommendation.

## **6. Overview**

*Contributor's Note: This section would provide the overview of IMT-2020 data streaming service.*

IMT-2020 Network provides a variety of services over network and computing infrastructure, including enhanced Mobile Broadband (eMBB) services, services based on Large-scale Machine Type Communication (MTC) and services based on Ultra-Reliable low-delay Communication (URLLC). It can support very large scale networks, flexible connectivity and topology, fixed/mobile convergence, user plane optimization. Meanwhile, the IMT-2020 network has many features that help improve the efficiency and flexibility of network services, such as distributed architecture based on software-based network functions, Software-defined networking, access network agnostic common core network, network slicing, intelligent resource management and so on.

The emergence of mobile information makes the office scene get rid of the dependence on fixed office environment, fixed working hours, fixed computer equipment and fixed network, and use personal terminals to work anytime and anywhere. For example, government departments can consult official documents, examine and approve government affairs outside the office through cooperative office and other systems; teachers and students have off-campus access to e-journals. Currently, the VPN dial-up mode is used to access the internet of the enterprise or campus which has limitations such as complex operations, low speed, poor security, and failure to access the Internet at the same time.

It is important to consider solutions to enhance signaling and protocols of IMT-2020 network and beyond to support data streaming to ensure. For example, an user uses a terminal outside to access the Internet using the established generic DNN session. The direction of service traffic corresponds

to the diagram, the access network to the edge UPF and then channeled to the Internet. If the user moves to the office park, the SMF will trigger to insert the core UPF for the user and select the edge UPF to connect to the office network. Then the user can access both the Internet and the office network at the same time. Based on the destination address of the packet, different service traffic is directed to different networks. Traffic to the Internet is channeled from the access network to the core UPF and then to the Internet. Traffic to the park internet is channeled from the access network to the edge UPF and then to the park internet.

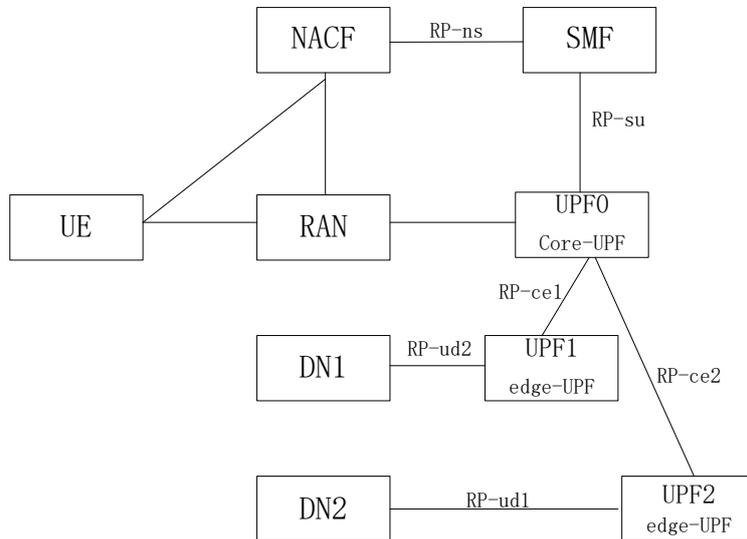


Figure 6-1 Architecture reference model of IMT-2020 network for supporting data streaming service

## 7. Signalling requirements to support IMT-2020 data streaming services

*Contributor's note: This section will provide the signalling requirements to support data streaming service in IMT-2020 network and beyond , contributions are welcomed.*

## 8. Signalling flow to support IMT-2020 data streaming services

*Contributor's note: This section will provide the signalling flow to support data streaming service in IMT-2020 network and beyond, contributions are welcomed.*

## 9. Message format

*Contributor's note: Message format examples of data streaming service in IMT-2020 network and beyond will be addressed in this clause, contributions are welcomed.*