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Abstract: This document is the initial text of the draft new Recommendation ITU-T Q.U2USM-sig "Signalling for the support of user equipment to user equipment session management in future networks including IMT-2020 networks".

This document is the initial output of the draft new Recommendation ITU-T Q.U2USM-sig "Signalling for the support of user equipment to user equipment session management in future networks including IMT-2020 networks" in Q6/11 meeting (3-11 March 2026).

This document is based on this meeting's discussion and results on the following contribution:

No.	Title	Source	Discussion
SG11-C294	Propose to initiate a new work item - ITU-T Q.U2USM-sig-req"Signalling requirements for the support of user equipment to user equipment session management in future	China Telecommunications Corporation; China Unicom; China Academy of Information and Communications Technology	Accepted with modifications

	networks including IMT-2020 networks"		

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Draft new Recommendation ITU-T Q.U2USM-sig

Signalling for the support of user equipment to user equipment session management in future networks including IMT-2020 networks

Summary

This draft Recommendation specifies the signalling for the support of user equipment to user equipment (UE-to-UE) session management in future networks including IMT-2020 networks.

Keyword

Signalling; Information flows; Message format; UE-to-UE session management

Draft new Recommendation ITU-T Q.U2USM-sig

Signalling for the support of user equipment to user equipment session management in future networks including IMT-2020 networks

1 Scope

This Recommendation provides the signalling for the support of UE-to-UE session management in future networks including IMT-2020 networks, including:

– Overview of UE-to-UE session using layer 3 or layer 2 capabilities (non-radio aspects).

– Signalling requirements for the UE-to-UE session management in future networks including IMT-2020 networks.

– Information flows for the UE-to-UE session management in future networks including IMT-2020 networks.

– Message format for the UE-to-UE session management in future networks including IMT-2020 networks.

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.3153] Recommendation ITU-T Y.3153 (2019), *Network slice orchestration and management for providing network services to 3rd party in the IMT-2020 network.*

[ITU-T Y.3166] Recommendation ITU-T Y.3166 (2025), *Future networks including IMT-2020 networks Requirements and framework for the support of user equipment to user equipment session management.*

[3GPP TS 23.501] 3GPP TS 23.501 V19.4.0 (2025), *System architecture for the 5G system; Stage 2 (Release 19).*

[3GPP TS 29.244] 3GPP TS 29.244 V19.2.0 (2025), *Interface between the Control Plane and the User Plane Nodes (Release 19).*

[TBD]

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1 IMT-2020 [b-ITU-T Y.3100]: Systems, system components, and related technologies that provide far more enhanced capabilities than those described in [ITU-R M.1645].

3.1.2 PDU Session [b-ITU-T Y.3100]: In the context of IMT-2020, an association between a user equipment (UE) and a data network that provides a protocol data unit (PDU) connectivity service.

3.1.3 session [b-ITU-T Y.2233]: Logical connection between parties involved in a packet-switched based communication.

NOTE – This term is used for packet-switched connections rather than the term "call" that is normally used for a connection over conventional (circuit-switched) systems. A session can be composed of one or more unidirectional and/or bidirectional flows.

[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:

ASF Authentication Server Function

IMT-2020 International Mobile Telecommunication 2020

QoS Quality of Service

USM Unified Subscription Management

[TBD]

5 Conventions

In the body of this Recommendation and its appendices, the words shall, shall not, should and may sometimes appear, in which case they are to be interpreted, respectively as, is required to, is prohibited from, is recommended and can optionally. The appearance of such phrases or keywords in an appendix or in material explicitly marked as informative are to be interpreted as having no normative intent.

{A}: indicates that the parameter A is mandatory.

[B]: indicates that the parameter B is optional.

*: indicates that the parameter may be multiple items.

6 Overview of UE-to-UE session using layer 3 or layer 2 capabilities

The user equipment to user equipment (UE-to-UE) session refers to a session that spans from a UE to another UE using layer 3 or layer 2 capabilities, as depicted in Figure 1.

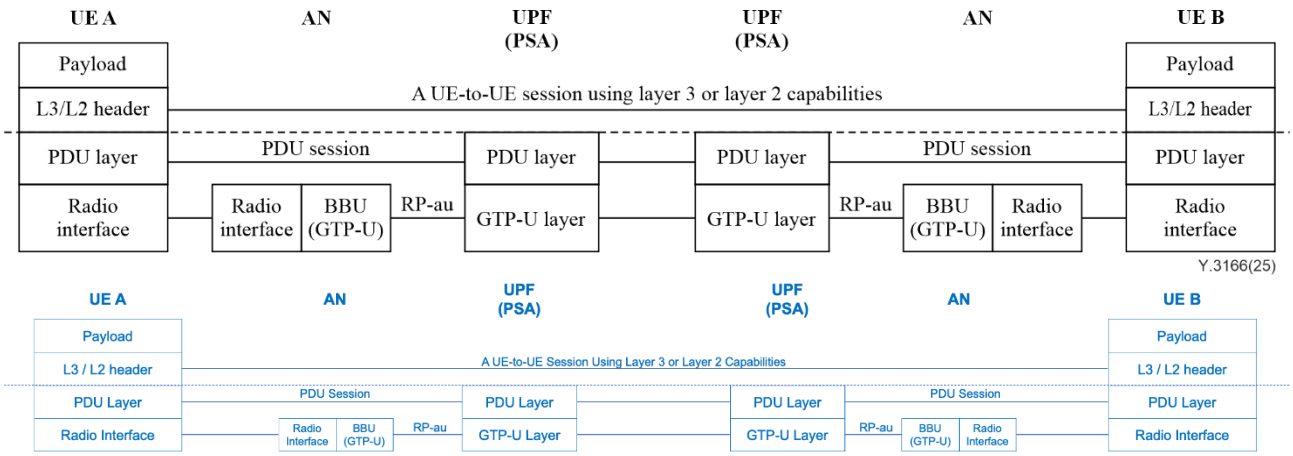

Figure 1 – The overview of a UE-to-UE session

A UE-to-UE session has a per service granularity, which is separate from a Protocol Data Unit (PDU) session, while a PDU session has a per subscriber granularity. A subscriber can initiate one or more UE-to-UE sessions over the same PDU session. That is, when a UE-to-UE session is established, a corresponding dedicated quality of service (QoS) flow is simultaneously established in the PDU session for this UE-to-UE session, and when the UE-to-UE session is modified or terminated, the corresponding dedicated QoS flow is simultaneously modified or deleted, while the PDU session keeps being established.

A UE-to-UE session can also be used in inter-operator scenarios.

The framework for the support of UE-to-UE session management in the International Mobile Telecommunication (IMT)-2020 networks are depicted in Figure 2 as specified in [ITU-T Y.3166].

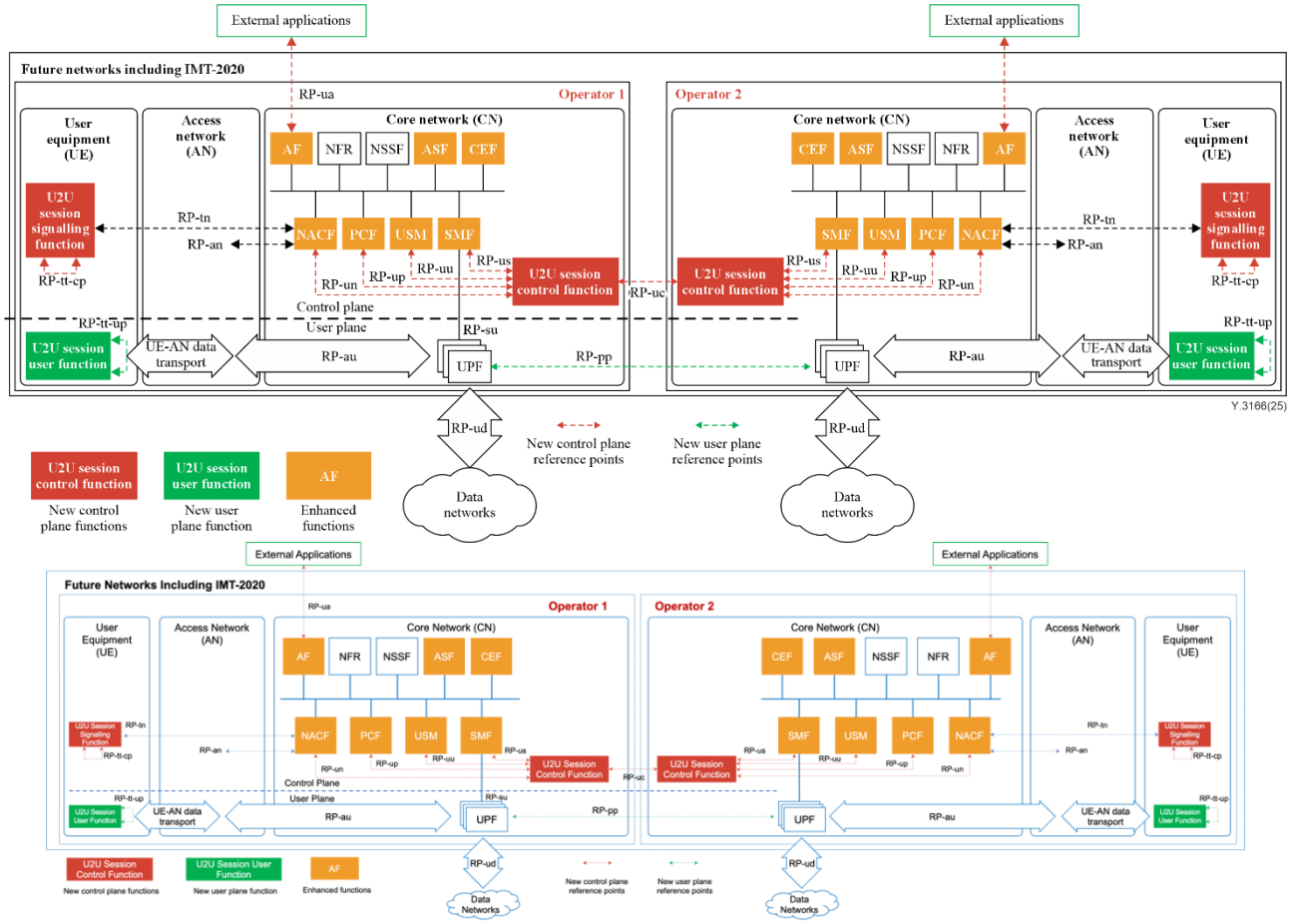

Figure 2 The architectural framework for the support of UE-to-UE session management in future networks including IMT-2020 network (intra-operator and inter-operator cases) [ITU-T Y.3166]

There are three new functions, seven enhanced functions and nine new reference points in the IMT-2020 networks, based on which the information flow and signalling requirements are specified to support UE-to-UE session management.

There is no new quality of service (QoS) mechanism to be specified in this draft Recommendation. This draft Recommendation specifies the signalling to trigger the existing QoS mechanism specified in [3GPP TS 23.501] and [3GPP TS 29.244].

Editors' note: more details will be provided later.

Editors' note: Figures will be updated in future meetings.

7 Signalling requirements for the UE-to-UE session management in future networks including IMT-2020 networks

7.1 General signalling requirements

The information flows used for the set-up and tear-down of a UE-to-UE session and the allocation, modification and release of the corresponding network capabilities and resources on demand upon communication service requests, based on the new capabilities of IMT-2020 specified in [ITU-T Y.3166].

The mechanisms of allocation, modification and release of the network resources based on the new capabilities specified in [ITU-T Y.3166] are specified in this Recommendation. The mechanisms of allocation, modification and release of the network resources of the capabilities specified in [ITU-T Y.3102] are aligned with [ITU-R M.2150-2], [ITU-T Y.3153], [3GPP TS 29.244] and [3GPP TS 38.300].

The user equipment (UE) register with the control plane of IMT-2020 with the additional registration requirements including UE's layer 3 capabilities and layer 2capabilities.

The additional information is added in the unified subscription management (USM), concerning the subscription data in the USM representing the authorization for the subscriber to initiate a UE-to-UE session.

The authentication server function (ASF) verifies whether a subscriber is authorized to initiate a UE−to−UE session.

7.2 Signalling requirements for UE-to-UE session flows

Both application-driven and user-driven UE-to-UE session information flows are supported for UE-to-UE sessions management.

Editors' note: more details will be provided later.

8 Information flows for the UE-to-UE session management in future networks including IMT-2020 networks

Editor's note: this clause will specify the information flows of the UE-to-UE session management, as well as the explanations of each step of these information flows. Figure 3 depicts a draft of UE-to-UE session establishment information flow, which are provided as initial contents for consideration and further updates. And contributions are invited.

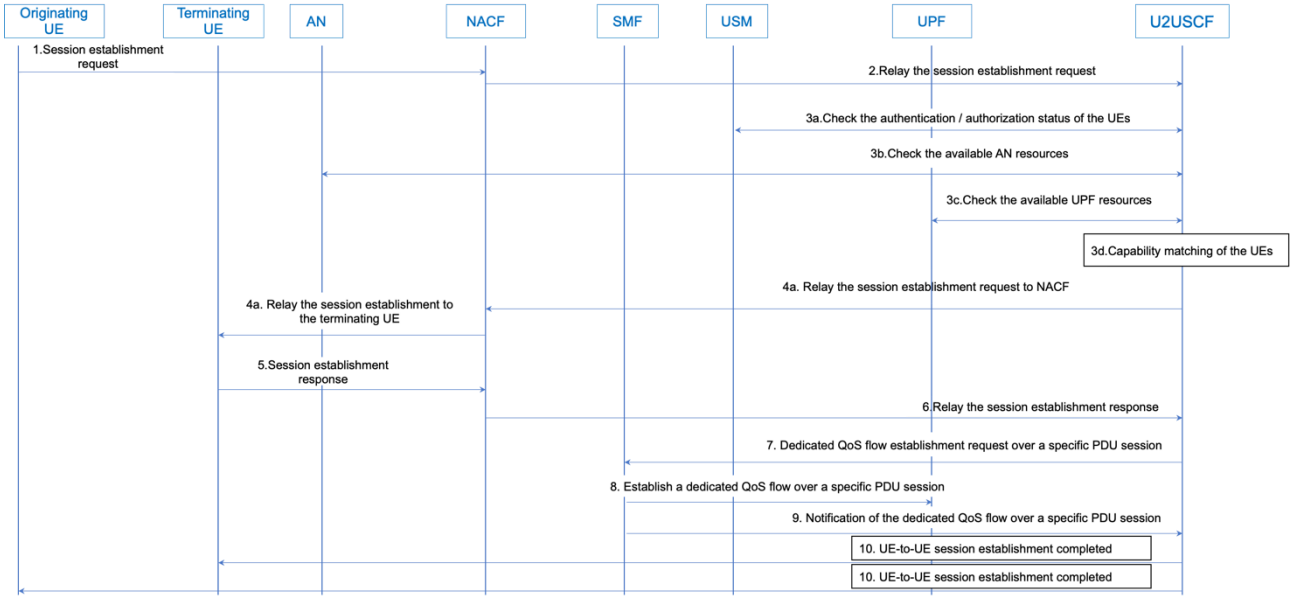

Figure 3 The information flow of UE-to-UE session establishment

More details will be provided later.

End of the Editor's note.

9 Message format for the UE-to-UE session management in future networks including IMT-2020 networks

Editors' note: this clause will specify the message format of each step of the information flows specified in clause 8, more details will be provided later.

Bibliography

[b-ITU-T Y.2233] Recommendation ITU-T Y.2233 (2010), *Requirements and framework allowing accounting and charging capabilities in NGN.*

[b-ITU-T Y.3100] Recommendation ITU-T Y.3100 (2018), *Terms and definitions for IMT-2020 network Corrigendum 1.*

[TBD]

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