INTERNATIONAL TELECOMMUNICATION UNION

**TELECOMMUNICATION
STANDARDIZATION SECTOR**

STUDY PERIOD 2017-2020

SG11-TD102/WP1

STUDY GROUP 11

Original: English

Question(s): 1/11 Virtual, 16 July 2021

TD

Source: Editors

Title: Output – baseline text for a new work item Q.DC-SA “Signalling architecture of data channel enhanced IMS network” (e-meeting, 7-16 July 2021)

Purpose: Information

Contact:
Jianyin Zhang
China Mobile
China
Tel: +86 13910022506
E-mail: zhangjianyin@chinamobile.com

Contact:
Huan Deng
China Telecom
China
Tel: ++86-10-50902867
E-mail: denghuan@chinatelecom.cn

Contact:
Xueqian Bai
China Mobile
China
Tel: +86 13811512805
E-mail: baixueqian@chinamobile.com

Keywords: IMS; Data Channel; signalling architecture; framework

Abstract: This document is the initial output text of Q.DC-SA “Signalling architecture of data channel enhanced IMS network”, as discussed at Q1/11 RGM e-meeting on 7-16 July 2021.

This document is the initial output text of Q.DC-SA “Signalling architecture of data channel enhanced IMS network”, as discussed at Q1/11 RGM e-meeting on 7-16 July 2021

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

No.	Title	Source	Discussion
DOC34	Proposal for initiating a new work item on signalling architecture of data channel enhanced IMS network	China Mobile, China Telecommunications Corporation	Accepted

Table of Contents

Page

1. Scope ... 3

2. References ... 3

3. Definitions ... 3

- **3.1. Terms defined elsewhere** ... 3
- **3.2. Terms defined in this Recommendation** ... 3

4. Abbreviations and acronyms ... 4

5. Conventions ... 4

6. Requirements of data channel enhanced IMS network ... 5

7. Framework of data channel enhanced IMS network ... 5

8. Interfaces of data channel enhanced IMS network ... 6

9. Relationship with IMS Network ... 6

10. Security Consideration ... 7

A.1 justification for proposed draft new Recommendation Q.DC-SA ... **Error! Bookm**

Draft new Recommendation ITU-T Q.DC-SA

Signalling architecture of data channel enhanced IMS network

1. Scope

This draft Recommendation presents the signalling architecture of data channel enhanced IMS network.

The signalling architecture of data channel enhanced IMS network presents the requirements of data channel enhanced IMS network, specifies the framework of signalling network, specifies the interfaces among data channel enhanced IMS network.

2. References

The following 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 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.

[3GPP TS 26.114]	3GPP TS 26.114, *IP Multimedia Subsystem (IMS); Multimedia Telephony; Media handling and interaction.*
[IETF RFC8831]	IETF RFC88331, *WebRTC Data Channels.*
[ITU-T Y.3104]	Recommendation ITU-T Y.3104, *Architecture of the IMT-2020 network.*

3. Definitions

3.1. Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.2. Terms defined in this Recommendation

This Recommendation defines the following terms:

4. Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

CSCF	Call Session Control Function
DC	Data Channel
DCS	Data Channel Server
FE	Functional Entity
HTTP	Hyper Text Transfer Protocol
ID	Identifier
IMS	IP Multimedia System
MTAS	Multimedia Telephony Application Server
NF	Network Function
SBC	Session Border Controller
SIP	Session Initiation Protocol
SES	Service Enabler Server
UE	User Equipment
UMP	Unified Media Plane

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. Requirements of data channel enhanced IMS network

[Editor's Note 1] This clause presents the requirements for 5G signalling network analyses and optimization. The general requirements are to be inherited and enhanced from VoLTE signalling network analyses and optimization.

The requirement of data channel enhanced IMS network includes framework and signalling architecture. The additional requirement is the reference points between IMS network and data channel function elements.

7. Framework of data channel enhanced IMS network

[Editor's Note 2] This is the initial version of reference model of data channel enhanced IMS network, which could be revised in the progress of draft Recommendation.

Figure 1 depicts the reference model of data channel enhanced IMS network.

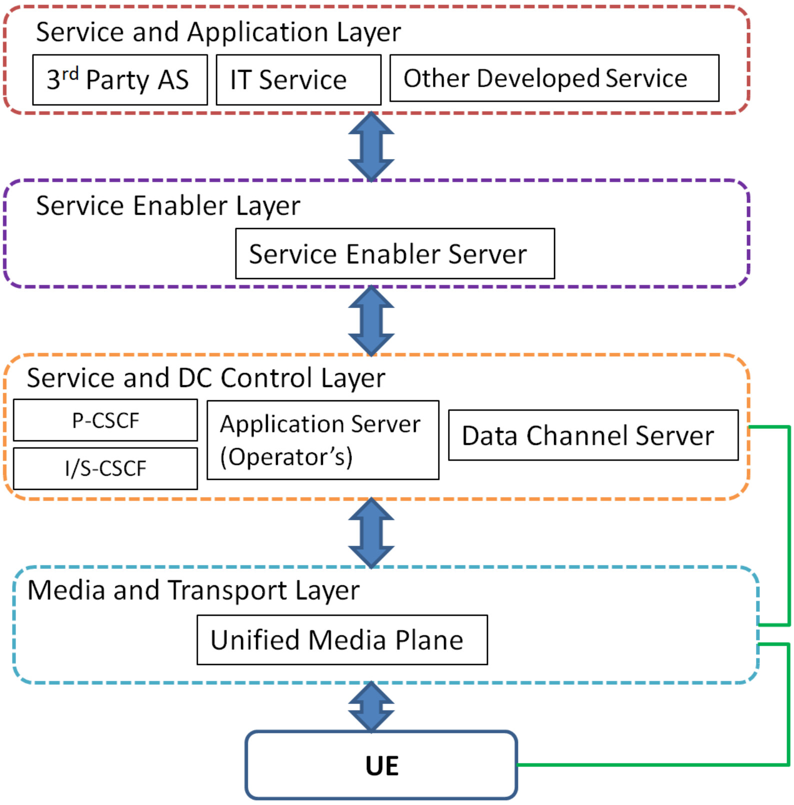

Figure 1 – Reference model of data channel enhanced IMS network

As illustrated in Figure 1, data channel enhanced IMS network mainly includes four layers：

- Service and Application Layer

- Service Enabler Layer
- Service and DC Control Layer
- Media and Transport Layer

8. Functional architecture and reference points

[Editor's Note 3] This is the initial version and will be revised in the progress of draft Recommendation.

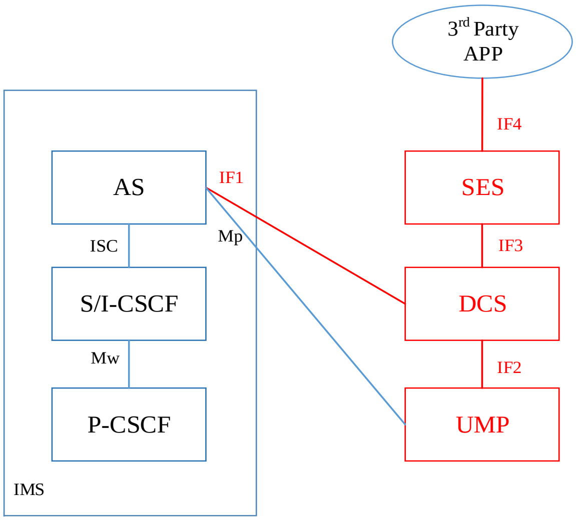

Figure 2 –Functional architecture of data channel enhanced IMS network

As illustrated in Figure 2, some new functional entities including DCS and UMP will be introduced to support data channel enhanced IMS network.

DCS will take charge of data channel control and management while UMP will handle with media plane for data channel and traditional media resources.

9. Interfaces of data channel enhanced IMS network

TBD

10. Relationship with IMS Network

TBD

11. Security Consideration

[Editor's Note 4] This clause will present the general security considerations on data channel enhanced IMS network, including network security issues and privacy issues.