**SA WG2 Meeting SA2#143-e S2-2xxxxxx**

**24 February - 9 March, 2021, Electronic meeting (revision of S2-2009412)**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **23.203** | **CR** | **<CR#>** | **rev** | **<Rev#>** | **Current version:** | **16.2.0** |  |
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| *For* ***HE******LP*** *on using this form: comprehensive instructions can be found at  http://www.3gpp.org/Change-Requests.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **x** |

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| ***Title:*** | Multimedia Priority Service (MPS) Phase 2 support for Data Transport Service | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Perspecta Labs, CISA ECD, AT&T, T-Mobile USA, Nokia, Nokia Shanghai-Bell, Ericsson | | | | | | | | | |
| ***Source to TSG:*** | SA2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | MPS2 | | | | |  | ***Date:*** | | | DD MM 2021 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP TR 21.900. | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) Rel-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)*  *Rel-17 (Release 17)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | MPS for DTS provides the Service User with priority for applications using the default bearer in the EPS, to one or more selected active Packet Data Networks (PDNs), in periods of severe network congestion during which normal commercial data service is degraded.  This CR supports stage 1 requirements, TS 22.153, clause 9.3.1:  The system shall support:   * MPS for DTS for an authorized Service User using a UE with a subscription for MPS, and * MPS for DTS for an authorized Service User using a UE that does not have an MPS subscription.   TS 23.203 currently does not support MPS for DTS. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 1. Added DTS abbreviation; 2. Added clarifications in various MPS clauses with respect to the existing Priority EPS Bearer Service and IMS Priority service; and 3. Added new clause on Bearer Priority for MPS for Data Transport Service. | | | | | | | | |
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| ***Consequences if not approved:*** | | No support for MPS for DTS in Release 17. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 3.2, 6.1.11.2, 6.1.11.X (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | CR for TS 23.401 | | |
| ***affected:*** | |  | **x** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | This CR updates endorsed Draft CR S2-2009412 from meeting SA2#142-e, November 16-20, 2020 based on additional discussion with stakeholders. | | | | | | | | |

*FIRST CHANGE*

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [8] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [8].

ADC Application Detection and Control

AF Application Function

AMBR Aggregated Maximum Bitrate

ARP Allocation and Retention Priority

ASP Application Service Provider

BBERF Bearer Binding and Event Reporting Function

BBF Bearer Binding Function

BBF AAA Broadband Forum AAA

BNG Broadband Network Gateway

BPCF Broadband Policy Control Function

BRAS Broadband Remote Access Server

CSG Closed Subscriber Group

CSG ID Closed Subscriber Group Identity

DRA Diameter Routing Agent

DTS Data Transport Service

E-UTRAN Evolved Universal Terrestrial Radio Access Network

H-PCEF A PCEF in the HPLMN

H-PCRF A PCRF in the HPLMN

HRPD High Rate Packet Data

HSGW HRPD Serving Gateway

IP‑CAN IP Connectivity Access Network

MPS Multimedia Priority Service

NB-IoT Narrowband IoT

NBIFOM Network-based IP flow mobility

NSWO Non-Seamless WLAN Offload

OAM Operation Administration and Maintenance

OFCS Offline Charging System

OCS Online Charging System

PCC Policy and Charging Control

PCEF Policy and Charging Enforcement Function

PCRF Policy and Charging Rules Function

PFDF Packet Flow Description Function

PRA Presence Reporting Area

QCI QoS Class Identifier

RAN Radio Access Network

RCAF RAN Congestion Awareness Function

RLOS Restricted Local Operator Services

RUCI RAN User Plane Congestion Information

RG Residential Gateway

SCEF Service Capability Exposure Function

vSRVCC video Single Radio Voice Call Continuity

SPR Subscription Profile Repository

TDF Traffic Detection Function

TSSF Traffic Steering Support Function

UDC User Data Convergence

UDR User Data Repository

V-PCEF A PCEF in the VPLMN

V-PCRF A PCRF in the VPLMN

WB-E-UTRAN Wide Band E-UTRAN

*SECOND CHANGE*

#### 6.1.11.2 PCC rule authorization and QoS rule generation

For MPS service, the PCRF shall generate the corresponding PCC/QoS rule(s) with the ARP/QCI parameters as appropriate for the prioritized service.

For non-MPS service, the PCRF shall generate the corresponding PCC/QoS rule(s) as per normal procedures, without consideration whether the MPS Priority EPS Bearer Service including MPS for DTS is active or not, but upgrade the ARP/QCI values suitable for MPS when the Priority EPS Bearer Service including MPS for DTS is invoked. When the Priority EPS Bearer Service including MPS for DTS is revoked, according to PCRF decision, the PCRF shall change the ARP/QCI parameters to appropriate values modified for Priority EPS Bearer Service including MPS for DTS.

Whenever one or more AF sessions of an MPS service are active within the same PDN connection, the PCRF shall ensure that the ARP priority level of the default bearer is at least as high as the highest ARP priority level used by any authorized PCC rules belonging to an MPS service. If the ARP pre-emption capability is enabled for any of the authorized PCC rules belonging to an MPS service, the PCRF shall also enable the ARP pre-emption capability for the default bearer.

NOTE 1: This ensures that services using dedicated bearers are not terminated because of a default bearer with a lower ARP priority level or disabled ARP pre-emption capability being dropped during mobility events.

NOTE 2: This PCRF capability does not cover interactions with services other than MPS services.

*THIRD AND LAST CHANGE*

#### 6.1.11.X Bearer priority for MPS for Data Transport Service

MPS for DTS is the means for an AF to invoke/revoke Priority EPS Bearer Service for the default bearer of a specific APN supporting/enabling MPS for DTS traffic.

NOTE 1: MPS for DTS can be applied to any APN other than the well-known APN for IMS.

MPS for DTS provides priority to all flows that are carried on the default bearer for a specific APN. The QoS of the default bearer is modified to receive MPS for DTS treatment. MPS for DTS does not impact existing bearers other than the default bearer.

The AF authorizes MPS for DTS requests. Subsequently, the AF indicates to the PCRF whether the MPS for DTS request is for invoking or revoking MPS for DTS. The PCRF shall respond to the AF indicating that it received the AF request. The PCRF shall not perform any subscription check for MPS for DTS.

The PCRF shall, at the activation of MPS for DTS over Rx perform the same steps as described in clause 6.1.11.3 for the activation of the Priority EPS Bearer Service applying MPS for DTS to the default bearer.

NOTE 2:   To keep the PCC rules bound to the default bearer, the PCRF can either modify the ARP/QCI of these PCC rules accordingly or set the Bind to Default Bearer PCC rule attribute.

The PCRF shall inform the AF that it successfully acted upon the MPS for DTS invocation/revocation request.

The PCRF shall, at the deactivation of MPS for DTS over Rx perform the same steps as described in clause 6.1.11.3 for the deactivation of the Priority EPS Bearer Service removing MPS for DTS from the default bearer.

If the bearer is deactivated for other reasons than an AF request, the AF shall be notified by terminating the Rx session.

*END OF CHANGES*