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

**24 February - 9 March, 2021, Electronic meeting Revision of S2-2009414**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **23.503** | **CR** | **<CR#>** | **rev** | **<Rev#>** | **Current version:** | **16.6.0** |  |
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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)* | |
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| ***Reason for change:*** | | MPS for DTS provides the Service User with priority for applications using the QoS Flow associated with the default QoS rule in the 5GS, to one or more selected active Data Networks (DNs), 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 23.503 currently does not support MPS for DTS. | | | | | | | | |
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| ***Summary of change:*** | | Changes to two clauses.   1. Added DTS abbreviation; and 2. Added clarifications in clause 6.1.3.11 Multimedia Priority Service support. | | | | | | | | |
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| ***Consequences if not approved:*** | | No support for MPS for DTS in 5GC in Release 17. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 3.2, 6.1.3.11 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | CR for TS 23.501 and CR for TS 23.502 | | |
| ***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 S2-2009414 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 [1], TS 23.501 [2], TS 23.502 [3], TS 23.316 [27] 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 [1].

AMBR Aggregated Maximum Bitrate

ANDSP Access Network Discovery & Selection Policy

ARP Allocation and Retention Priority

ASP Application Service Provider

BSF Binding Support Function

CHF CHarging Function

DTS Data Transport Service

H-PCF A PCF in the HPLMN

H-UDR A UDR in the HPLMN

MPS Multimedia Priority Service

NBIFOM Network-based IP flow mobility

NSWO Non-Seamless WLAN Offload

NWDAF Network Data Analytics Function

OAM Operation Administration and Maintenance

OCS Online Charging System

PCC Policy and Charging Control

PFD Packet Flow Description

PFDF Packet Flow Description Function

PRA Presence Reporting Area

RAN Radio Access Network

URSP UE Route Selection Policy

V-PCF A PCF in the VPLMN

V-UDR A UDR in the VPLMN

vSRVCC video Single Radio Voice Call Continuity

WLANSP WLAN Selection Policy

*SECOND and LAST CHANGE*

#### 6.1.3.11 Multimedia Priority Service support

Multimedia Priority Services (MPS) is defined in TS 23.501 [2], TS 23.502 [3] and in TS 23.228 [5], utilising the architecture defined for 5GS.

Subscription data for MPS is provided to PCF through the N36/Nudr. To support MPS service, the PCF shall subscribe to changes in the MPS subscription data for Priority PDU connectivity service. Dynamic invocation for MPS provided from an AF using the Priority indicator over N5/Npcf takes precedence over the MPS subscription.

ARP and/or 5QI may be modified. It shall be possible to override the default priority level associated with the standardized 5QIs.

For dynamic invocation of MPS service, the PCF shall generate the corresponding PCC rule(s) with the ARP and 5QI parameters as appropriate for the prioritized service, as defined in TS 23.501 [2].

Whenever one or more AF sessions of an MPS service are active within the same PDU Session, the PCF shall ensure that the ARP priority level of the QoS Flow for signalling as well as the QoS Flow associated with the default QoS rule is at least as high as the highest ARP priority level used by any authorized PCC rule 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 PCF shall also enable the ARP pre-emption capability for the QoS Flow for signalling as well as the QoS Flow associated with the default QoS rule.

In the case of IMS MPS, in addition to the above, the following QoS Flow handling applies:

- At reception of the indication from subscription information that the IMS Signalling Priority is set for the PDU Session or at reception of service authorization from the P-CSCF (AF) including an MPS session indication and the service priority level as defined in TS 23.228 [5], the PCF shall (under consideration of the requirement described in clauses 5.16.5 and 5.22.3 in TS 23.501 [2]) modify the ARP in all the PCC rules that describe the IMS signalling traffic to the value appropriate for IMS Multimedia Priority Services, if upgrade of the QoS Flow carrying IMS Signalling is required. To modify the ARP of the QoS Flow associated with the default QoS rule the PCF shall modify the Authorized default 5QI/ARP.

- When the PCF detects that the P-CSCF (AF) released all the MPS sessions and the IMS Signalling Priority is not set for the PDU Session the PCF shall consider changes of the requirement described in clauses 5.16.5 and 5.22.3 in TS 23.501 [2] and modify the ARP in all PCC rules that describe the IMS signalling traffic to an appropriate value according to PCF decision. The PCC rules bound to the QoS Flow associated with the default QoS rule have to be changed accordingly.

NOTE 1: To keep the PCC rules bound to this QoS Flow, the PCF can either modify the ARP of these PCC rules accordingly or set the Bind to QoS Flow associated with the default QoS rule.

The Priority PDU connectivity service targets the ARP and/or 5QI of the QoS Flows, enabling the prioritization of all traffic on the same QoS Flow.

For non-MPS service, the PCF shall generate the corresponding PCC rule(s) as per normal procedures (i.e. without consideration whether the MPS Priority PDU connectivity service is active or not), and shall upgrade the ARP/5QI values suitable for MPS when the Priority PDU connectivity service is invoked. When the Priority PDU connectivity service is revoked, the PCF shall change the ARP/5QI values modified for the Priority PDU connectivity service to appropriate values according to PCF decision.

The PCF shall, at the activation of the Priority PDU connectivity service:

- modify the ARP of PCC rules installed before the activation of the Priority PDU connectivity service to the ARP as appropriate for the Priority PDU connectivity service under consideration of the requirement described in clause 5.16.5 of TS 23.501 [2]; and

- if modification of the 5QI of the PCC rule(s) is required, modify the 5QI of the PCC rules installed before the activation of the Priority PDU connectivity service to the 5QI as appropriate for this service.

The PCF shall, at the deactivation of the Priority PDU connectivity service modify any 5QI and ARP value to the value according to the PCF policy decision.

For PCC rules modified due to the activation of Priority PDU connectivity service:

- modify the ARP to an appropriate value according to PCF decision under consideration of the requirement described in clauses 5.16.5 and 5.22.3 in TS 23.501 [2]; and

- if modification of the 5QI of PCC rule(s) is required, modify the 5QI to an appropriate value according to PCF decision.

MPS for DTS is the means for an AF to invoke/revoke Priority PDU Connectivity Service for the QoS Flow associated with the default QoS rule of a specific DNN and S-NSSAI supporting/enabling MPS for DTS traffic.

NOTE 2: MPS for DTS can be applied to any DNN other than the well-known DNN for IMS.

Upon receipt of the MPS for DTS invocation/revocation request from the UE, the AF authorizes the request. Subsequently, the AF indicates to the PCF whether the MPS for DTS request is for invoking or revoking MPS for DTS. The PCF will respond to the AF indicating that it received the AF request. The PCF shall not perform any subscription check for MPS for DTS. The PCF shall initiate the modification of the ARP and/or 5QI of the QoS Flow associated with the default QoS rule to an appropriate value subject to regional/national regulatory requirements and operator policy. The AF may also create an SDF for signalling between the UE and the AF and request priority for this SDF.

The PCF shall, at the invocation/revocation of MPS for DTS

* change the ARP and/or 5QI to match those of the QoS Flow associated with the default QoS rule; or
* set/clear the Bind to QoS Flow associated with the default QoS rule

for the PCC Rule(s) that were mapped to the QoS Flow associated with the default QoS rule prior to the invocation of MPS for DTS.

NOTE 3: PCC rules bound to the QoS Flow associated with the default QoS Rule continue to be bound to the QoS Flow associated with the default QoS rule following an MPS for DTS invocation/revocation.

The PCF shall inform the AF that it successfully acted upon the MPS for DTS invocation/revocation request. If the PDU session is deactivated, the PCF shall notify the AF by deleting the N5 session context.

*END OF CHANGES*