**3GPP TSG-CT WG1 Meeting #131-eC1-214773**

**E-meeting, 19-27 August 2021**

**3GPP TSG-CT WG3 Meeting #117-e** **C3-214019\_r1 (C3-214380)**

**E-meeting, 18-27 August 2021**

**3GPP TSG-CT WG4 Meeting #105-e** **C4-214220**

**E-meeting, 17-27 August 2021**

(revision of CP-yyxxxx)

**Source: Nokia, Nokia Shanghai Bell**

**Title:** **New WID on System enhancement for redundant PDU session**

**Document for: Approval**

**Agenda Item: 17.1.1 (CT1, CT3) / 5 (CT4)**

3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

# Title: System enhancement for redundant PDU session

## Acronym: TEI17\_SE\_RPS

## Unique identifier: TBD

Potential target Release: Rel-17

## 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Affects:** | UICC apps | ME | AN | CN | Others (specify) |
| **Yes** |  | X |  | X |  |
| **No** | X |  | X |  |  |
| **Don't know** |  |  |  |  | X |

## 2 Classification of the Work Item and linked work items

### 2.1 Primary classification

This work item is a

|  |  |
| --- | --- |
|  | Feature |
| X | Building Block |
|  | *Work Task* |
|  | Study Item |

### 2.2 Parent Work Item

|  |
| --- |
| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| TEI17\_SE\_RPS | SA2 | 880017 | System enhancement for redundant PDU session |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work Items (if any) |
| Unique ID | Title | Nature of relationship |
| 820019 | Enhancement of URLLC support in the 5G Core network (5G\_URLLC) | Rel-16 work item for URLLC  |

## 3 Justification

TSG-SA approved the WID indicated in Clause 2.2 (UID: 880017) in TSG-SA Meeting #88E (June/July 2020). Stage 2 requirements were approved in TSG SA Meeting #92E (June 2021).

In light of these, impacts on protocols and interfaces under CT WGs' responsibilities are foreseen and the related work in CT WGs should be carried out within Rel-17 timeframe.

## 4 Objective

The objective of the work item is to develop the specifications under remit of CT WGs for the stage 2 requirements agreed under the stage 2 work item TEI17\_SE\_RPS. The following areas of work are expected to be covered (non-exhaustive):

**CT1**

1) Acquisition of policies (PDU session pair ID, RSN) related to redundant PDU sessions by a UE

2) Enhancement in the 5GSM protocol to deliver PDU session pair ID and RSN information

3) Enhancement of AT Commands (e.g. +CGDCONT) for two redundant PDU sessions

**CT3**

1) Impact on UE Route Selection Policy (URSP), if URSP is used to establish two redundant PDU sessions to introduce a matching capability

2) Introduction of an identification of the PDU session pair

3) Impact on accounting correlation via SMF charging record

**CT4**

1) Storing the PDU session pair information received from the UE in the Session Management context, to enable a new I-SMF to retrieve this information in scenarios with an I-SMF change or insertion

2) Passing the RSN and/or PDU Session Pair ID received in PDU Session Establishment Request from UE, in Create (PDU session) Request from I-SMF to anchor SMF (to enable the anchor SMF to determine that PDU Session is to be handled redundantly, for when indication that redundant PDU Session is required is not provided by PCF for the PDU Session, e.g. when dynamic PCC does not apply)

3) Passing PDU Session Pair ID from anchor SMF to I-SMF, in Create (PDU session) response, if the PDU session is to be handled redundantly and the PDU Session Pair ID was not included in the PDU Session Establishment request (e.g. for when indication that redundant PDU Session is required is provided by PCF for the PDU Session)

4) For scenarios where PCF is configured to not provide RSN / PDU Session Pair ID and instead let the UE provide these values, require the anchor SMF to return in Create Response the same values received in Create Request from I-SMF (PDU Session Establishment Response from anchor SMF to I-SMF mandates in Rel-16 to include RSN when Dual Connectivity based end to end Redundant User Plane Paths is supported).

## 5 Expected Output and Time scale

|  |
| --- |
| **New specifications** *{One line per specification. Create/delete lines as needed}* |
| Type  | TS/TR number | Title | For info at TSG#  | For approval at TSG# | Rapporteur |
|  |  |  |  |  |  |

|  |
| --- |
| **Impacted existing TS/TR** *{One line per specification. Create/delete lines as needed}* |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
| 24.501 | Enhancement in the 5GSM protocol to deliver PDU session pair information | TSG#95(Mar. 2022) | CT1 |
| 24.526 | Acquisition of policies related to redundant PDU sessions by a UE | TSG#95(Mar. 2022) | CT1 |
| 27.007 | Possible impact on AT Commands related to redundant PDU sessions  | TSG#95(Mar. 2022) | CT1 |
|  |  |  |  |
| 29.513 | Potential update of procedure descriptions | TSG#95(Mar. 2022) | CT3 |
|  |  |  |  |
| 29.525 | Potential impact on URSP | TSG#95(Mar. 2022) | CT3 |
| 29.561 | Impact on accounting for redundant PDU sessions | TSG#95(Mar. 2022) | CT3 |
| 29.502 | Extension to the PDUSession API to support:1) storing the PDU session pair information in SmContext, 2) signaling the RSN and/or PDU Session Pair ID in Create Request3) signaling the PDU Session Pair ID in Create Response4) signaling the RSN received in Create Request in Create Response  | TSG#95(Mar. 2022) | CT4 |

## 6 Work item Rapporteur(s)

WON, Sung Hwan, Nokia, sung.won@nokia.com

## 7 Work item leadership

CT1

## 8 Aspects that involve other WGs

SA3 for security aspects and SA5 for charging aspects.

## 9 Supporting Individual Members

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| --- |
| Supporting IM name |
| Nokia |
| Nokia Shanghai Bell |
| Verizon |
| Convida Wireless LLC |
| Qualcomm Incorporated |
| ZTE |
| Ericsson? |
|  |