3GPP TSG-RAN5 Meeting #96e *draft v1* *R5-225254*

Electronic Meeting, 15th August– 26th August 2022

3GPP TSG RAN Meeting #97-e *RP-22xxxx*

Electronic Meeting, 12 Sep – 16 Sep 2022

Source: NTT DOCOMO, INC

Title: New WID on UE Conformance - Enhancement for the 5G Control Plane Steering of Roaming for UE in Connected mode

Document for: Endorsement

Agenda Item: 4.1

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: UE Conformance - Enhancement for the 5G Control Plane Steering of Roaming for UE in Connected mode

Acronym: eCPSOR\_CON-UEConTest

Unique identifier:

|  |  |
| --- | --- |
| This WID includes a Testing part | X |
| and it addresses the following 3GPP work area: | Radio Access |  |
| Core Network | X |
| Services |  |

Potential target Release: *Rel-17*

# 1 Impacts

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

# 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) |
| eCPSOR\_CON | 3GPP SA WG1 | 850039 | Enhancement for the 5G Control Plane Steering of Roaming for UE in CONNECTED mode |
| eCPSOR\_CON |  | 880049 | Enhancement for the 5G Control Plane Steering of Roaming for UE in Connected mode |
| eCPSOR\_CON | CT1 | 880042 |  Stage 3 (CT1) of eCPSOR\_CON |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
|  |  |  |

Dependency on non-3GPP (draft) specification:

# 3 Justification

Today, roaming user and area is more and more increasing. When the UE performs roaming, the operator which is chosen to camp on is controled by Control plane Steering of Roaming (CP-SOR). In 5GS, CP-SOR information is provided to the UE over NAS signalling. The home operator can request the UE to acknowledge the successful reception of SOR information by returning an ACK to the Unified Data Management (UDM) / Steering of Roaming Application Function (SOR-AF).

This function could only be used while the UE is in the state of RRC\_IDLE in 5GS Rel-15 and enhanced in Rel-16. There is no particular work item related to SOR in Rel-16 in CT1, CP-SOR is simply enhanced with the work item in 5GProtoc16.The biggest change is the addition of a dedicated SOR node called SOR-AF. However, this CP-SOR information could also be used even while the UE is in the state of RRC\_CONNECTED from 5GS Rel-17.

Upon receiving CP-SOR information while the UE is in CONNECTED mode, the UE waits until it moves to idle mode or 5GMM-CONNECTED mode with RRC inactive before performing SOR and attempting to obtain service on a higher priority PLMN.

The Ues in 5G may stay in connected mode for a rather long time, whole day or longer, without going to idle mode. The HPLMN operator may have means to evaluate what is more convenient to provide the service for the user (e.g., based on their subscription profile, more efficient economically from wholesale perspective, allow users to use dedicated « economical » retail plans on specific VPLMN, etc.) and decide which VPLMN is more appropriate for the user to register on.Therefore, new requirements are introduced to allow the HPLMN to enforce the interruption of the ongoing sessions for the sake of performing SOR and moving the UE to another VPLMN to obtain service on a higher priority PLMN.

3GPP had initiated work from 2019, and the Stage 1 of eCPSOR\_CON had been completed in March, 2021, and the CT1 aspects of eCPSOR\_CON had been finished in March, 2022. More and more operators are interested in the commercial of CPSOR in CONNECTED mode, so it’s the proper time for RAN5 to start the R17 protocol conformance test for eCPSOR\_CON at this time.

# 4 Objective

The objective of this WI is to propose UE conformance requirements corresponding to Rel-17 Enhancement for the 5G Control Plane Steering of Roaming for UE in Connected mode, analyse the test case impact, applicability, test environment, and update the relevant conformance specifications for Rel-17.

# 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 |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
| TS 38.508-1 | Definition of common test environment for 5G Control Plane Steering of Roaming for UE in Connected mode test cases | TSG RAN#101(September-23) |  |
| TS 38.508-2 | Introduction of common implementation conformance statement (ICS) for 5G Control Plane Steering of Roaming for UE in Connected mode test cases | TSG RAN#101(September-23) |  |
| TS 38.523-1 | Introduction of protocol test cases for 5G Control Plane Steering of Roaming for UE in Connected mode | TSG RAN#101(September-23) |  |
| TS 38.523-2 | Applicability statements 5G Control Plane Steering of Roaming for UE in Connected test cases. | TSG RAN#101(September-23) |  |
| TS 38.523-3 | Introduction of test model 5G Control Plane Steering of Roaming for UE in Connected test cases | TSG RAN#101(September-23) | Progress of TTCN development of the new protocol test cases is tracked in MCC TF160 reports to RAN5/RAN. |

# 6 Work item Rapporteur(s)

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# 7 Work item leadership

RAN5

# 8 Aspects that involve other WGs

None

# 9 Supporting Individual Members

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| --- |
| Supporting IM name |
| NTT DOCOMO, INC. |
| Ericsson |
| CATT |
| CMCC |
| Samsung |
| Lenovo |
| Motorola Mobility |
| Qualcomm |
| Verizon |
| Huawei |
| HiSilicon |
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