**3GPP TSG-CT WG1 Meeting #138-eC1-225964**

**E-Meeting, 10th – 14th October 2022**

**Source: CATT, OPPO**

**Title: New WID on CT aspects of proximity based services in 5GS Phase 2**

**Document for: Approval**

**Agenda Item: 18.1.1**

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: CT aspects of proximity based services in 5GS Phase 2

## Acronym: 5G\_ProSe\_Ph2

## Unique identifier:

Potential target Release: Rel-18

# 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Affects:** | UICC apps | ME | AN | CN | Others (specify) |
| **Yes** | X | X |  | X |  |
| **No** |  |  | 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

For a brand-new topic, use “N/A” in the table below. Otherwise indicate the parent Work Item.

|  |
| --- |
| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| 5G\_ProSe\_Ph2 | SA2 | 970016 | Proximity-based Services in 5GS Phase 2 |

## 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work Items (if any) |
| Unique ID | Title | Nature of relationship |
| 910018 | CT aspects of proximity based services in 5GS | Rel-17 CT work item, which specifies the protocol for proximity based services in 5GS |
| 790001 | New Services and Markets Technology Enablers – Phase 2 | SA1 work item to define requirements for 5GS, which contains proximity services requirements. |
| 780002 | Removal of 'over LTE' limitation from Mission Critical Specifications | SA1 work item on MC Services requirements. |
| 840030 | WID on Network Controlled Interactive Service(NCIS) Requirements | SA1 work item, which specifies the requirements for interactive service. |
| 900007 | System enhancement for Proximity based Services in 5GS | Rel-17 SA2 work item, which specifies 5G system enhancement to support proximity based services. |
| 930008 | Security Aspects of Proximity based Services (ProSe) in the 5G System (5GS) | Rel-17 SA3 work item, which specifies security aspects of proximity based services in 5GS. |
| 940028 | Charging aspects of Enhanced Proximity-based Services in 5GC | Rel-17 SA5 work item, which specifies charging aspects of proximity based services in 5GS. |
| 860042 | WID on NR Sidelink enhancement | Rel-17 RAN work item, which specifies enhancements of NR sidelink. |
| 911005 | NR Sidelink Relay | Rel-17 RAN work item, which specifies NR sidelink relay. |
| 630006 | CT aspects of Proximity-based Services (Stage 3) | CT work item, which specifies the protocol for proximity based services for 4G/EPS. |
| 940077 | Study on Proximity-based Services in 5GS Phase 2 | Rel-18 SA2 study item, which studies 5G system enhancements to support proximity based services in phase 2. |
| 950024 | Study on Security Aspects of Proximity Based Services Phase 2 | Rel-18 SA3 study item, which studies new security requirements related to proximity base services in 5GS Phase 2. |
| 970027 | ProSe Secondary Authentication | Rel-18 SA3 work item, which defines support of 5G ProSe secondary authentication procedure when 5G ProSe UE-to-Network relay control plane based security procedure is used. |
| 941002 | NR sidelink relay enhancements | Rel-18 RAN work item on NR sidelink relay enhancements. |

# 3 Justification

Proximity based services in 5GS Phase 2 is a Rel-18 SA WGs work item which impacts the CT WGs. The stage 2 work is to provide enhancements of the 5G System to support proximity based services Phase 2:

a) The SA2 WG is enhancing the 5GC and the UE as studied in TR 23.700-33 and specified in TS 23.304 for support of proximity based services Phase 2; and

b) The SA3 WG is studying on the security aspects of proximity based services in 5GS Phase 2.

Therefore, it is necessary for a new CT work item to implement the stage-2 requirements and address the stage 3 protocol enhancement for support of proximity based services in 5GS Phase 2.

# 4 Objective

The objective of this work is to specify the CT aspects of proximity based services in 5GS Phase 2 in order to enhance the CT WGs specifications based on the stage-2 requirements. Normative work to be developed by SA WGs and RAN WGs which impacts CT WGs will be considered as soon as those are available.

The work shall be started only after the applicable normative SA2 requirements are available.

The expected work per the TSG CT working group includes:

For CT1:

- potential update to the PLMN selection triggered by 5G ProSe communications procedure to cover particular interactions between proximity based services in 5GS Phase 2 and NAS functions related to MS in idle mode;

- update NAS procedures and message(s) for providing support of proximity based services in 5GS Phase 2;

- support single NR PC5 hop UE-to-UE relay, including 5G ProSe UE-to-UE relay discovery (both model A and model B), UE-to-UE relay selection/reselection, and unicast mode layer-3 and layer-2 UE-to-UE relay communication (with IP, Ethernet or unstructured traffic types).

- enhance UE-to-Network relay for proximity based services in 5GS Phase 2 to support:

- remote UE switching between two indirect network communication paths (i.e. 5G ProSe layer-3 or layer-2 UE-to-Network relay), including target UE-to-Network relay UE selection among multiple UE-to-Network relay UEs;

- remote UE switching between indirect network communication path for 5G ProSe Layer-2 UE-to-Network relay and direct network communication path;

- remote UE performing multi-path transmission using only one direct network communication path and only one indirect network communication path (i.e. 5G ProSe layer-3 or layer-2 UE-to-Network relay);

- support UE switching between 5G ProSe direct communication path (non-relay) and direct network communication path;

- update of UE policy for proximity based services in 5GS Phase 2;

- addition or update of existing AT commands to support proximity based services in 5GS Phase 2; and

- possible updates to UE usage reporting to support proximity based services in 5GS Phase 2;

For CT3:

- potential impact to the NEF northbound interface to support proximity based services in 5GS Phase 2;

- potential update to PCF for support of proximity based services in 5GS Phase 2;

For CT4:

- potential update to the AMF to support proximity based services in 5GS Phase 2;

- potential update to the NRF for NF/NF service selection to support proximity based services in 5GS Phase 2;

- potential update to UDM and UDR to support proximity based services in 5GS Phase 2;

- potential storage of new subscription data to support proximity based services in 5GS Phase 2;

- potential update to the 5G PKMF for support of proximity based services in 5GS Phase 2;

- potential update to the AUSF to support proximity based services in 5GS Phase 2;

- potential update to the PAnF to support proximity based services in 5GS Phase 2; and

For CT6:

- support of proximity based services in 5GS Phase 2 by means of using the USIM.

# 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 |
| TS 24.554 | Updates to support Proximity based services (ProSe) in 5G system(5GS) Phase 2 protocol aspects | TSG CT #101 (September 2023) | CT1 |
| TS 24.555 | Updates to support Proximity based services (ProSe) in 5G system(5GS) Phase 2; User Equipment (UE) policies | TSG CT #101 (September 2023) | CT1 |
| TS 23.122 | Potential update to the PLMN selection triggered by 5G ProSe communications procedure to cover particular interactions between proximity based services in 5GS Phase 2 and NAS functions related to MS in idle mode | TSG CT #101 (September 2023) | CT1 |
| TS 24.501 | Updates to support interactions between proximity based services in 5GS Phase 2 and the 5GMM and 5GSM | TSG CT #101 (September 2023) | CT1 |
| TS 24.526 | Possible updates to URSP for 5G ProSe Phase 2 | TSG CT #101 (September 2023) | CT1 |
| TS 24.587 | Updates to support requesting new UE policies related to 5G ProSe Phase 2 | TSG CT #101 (September 2023) | CT1 |
| TS 27.007 | Addition or update of existing AT commands to support proximity based services in 5GS Phase 2 | TSG CT #101 (September 2023) | CT1 |
| TS 29.513 | Updates to policy and QoS parameters in order to support proximity based services in 5GS Phase 2 | TSG CT #101 (September 2023) | CT3 |
| TS 29.519 | Possible updates to Unified Data Repository Service for Application Data in order to support proximity based services in 5GS Phase 2 | TSG CT #101 (September 2023) | CT3 |
| TS 29.522 | Potential updates to the Nnef\_ServiceParameter service or possible updates to the Nnef\_ParameterProvision service to support proximity based services in 5GS Phase 2 | TSG CT #101 (September 2023) | CT3 |
| TS 29.525 | Update to support proximity based services in 5GS Phase 2 in UE policy control service | TSG CT #101 (September 2023) | CT3 |
| TS 29.534 | Potential updates to support 5G ProSe Phase 2 | TSG CT #101 (September 2023) | CT3 |
| TS 29.559 | Potential updates to 5G ProSe Key Management Services for 5G ProSe Phase 2 | TSG CT #101 (September 2023) | CT4 |
| TS 29.553 | Potential updates to 5G ProSe Anchor Services for 5G ProSe Phase 2 | TSG CT #101 (September 2023) | CT4 |
| TS 23.008 | Possible updates on storage of subscription data for 5G ProSe Phase 2 | TSG CT #101 (September 2023) | CT4 |
| TS 29.503 | Possible updates to the UDM services to support proximity based services in 5GS Phase 2 | TSG CT #101 (September 2023) | CT4 |
| TS 29.505 | Possible updates to the UDR services for subscription data to support proximity based services in 5GS Phase 2 | TSG CT #101 (September 2023) | CT4 |
| TS 29.510 | Possible update on NRF on NF / NF service selection to support proximity based services in 5GS Phase 2 | TSG CT #101 (September 2023) | CT4 |
| TS 29.518 | Possible updates on AMF to support proximity based services in 5GS Phase 2 | TSG CT #101 (September 2023) | CT4 |
| TS 29.571 | Possible definition of new common data types applicable for multiple 5G services to support proximity based services in 5GS Phase 2 | TSG CT #101 (September 2023) | CT4 |
| TS 29.509 | Possible updates to the AUSF services to support proximity based services in 5GS Phase 2 | TSG CT #101 (September 2023) | CT4 |
| TS 31.102 | Update to add support for proximity based services in 5GS Phase 2 | TSG CT #101 (September 2023) | CT6 |

# 6 Work item Rapporteur(s)

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# 7 Work item leadership

CT1

# 8 Aspects that involve other WGs

SA1 for the requirements aspects,

SA2 for the architectural aspects,

SA3 for the security aspects,

SA5 for the charging aspects,

RAN for the RAN related issues.

# 9 Supporting Individual Members

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| Supporting IM name |
| CATT |
| OPPO |
| China Mobile |
| China Telecom |
| China Unicom |
| LG Electronics |
| vivo |
| Tencent |
| MediaTek Inc. |
| ZTE |
| Xiaomi |
| Apple |
| Samsung |
| InterDigital |
| Huawei |
| HiSilicon |
| ASUSTeK |
| Lenovo |
| Intel |