**3GPP TSG-SA5 Meeting #156 *S5-243605r1***

**Maastricht, NetherLands, 19 - 23 Aug 2024** **(revision of S5-24xxxx)**

**Source: China Telecom**

**Title: New WID on Charging Aspects for 5G ProSe Ph3**

**Document for: Approval**

**Agenda Item: 7.2**

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 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

Title: New WID on Charging for 5G ProSe Ph3

Acronym: 5G\_ProSe\_Ph3\_CH

Unique identifier: TBD

Potential target Release: Rel-19

# 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes |  | 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

|  |  |
| --- | --- |
|  | Study |
|  | Normative – Stage 1 |
| X | Normative – Stage 2 |
| X | Normative – Stage 3 |
|  | Normative – Other\* |

**\* Other = e.g. testing**

## 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\_Ph3 | SA2 | 1040030 | [Proximity-based Services in 5GS Phase 3](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=1040030) |
| FS\_5G\_ProSe\_Ph3 | SA2 | 1020066 | Study on Proximity-based Services in 5GS Phase 3 |

### 2.3 Other related Work Items and dependencies

|  |  |  |
| --- | --- | --- |
| Other related Work /Study Items (if any) | | |
| Unique ID | Title | Nature of relationship |
| 940028 | Charging aspects of Proximity-based Services in 5GS | 5G Prose Charging in Rel18 |

# 3 Justification

As an enhancement for Proximity Services, the requirements for multi-hop support for UE-to-UE and UE-to-Network Relays are documented in TS 22.278 and TS 22.261 by SA1, which call for an enhanced architecture and solutions for ProSe.

SA2 has been progressing the study on ProSe phase 3, where architecture enhancements and multiple solutions are being developed to support multi-hop communication for UE-to-UE and UE-to-Network Relays.

Additionally, normative work has commenced to detail the converged multi-hop relay solutions which involve the introduction of intermediate relays, leading to a more complex link topology. It has been agreed that the Multi-hop ProSe UE-to-UE Relay relies on a new MANET message to exchange information about discovered ProSe end UEs. Similarly, ProSe UE-to-UE Relays exchange point-to-point signalling messages with each other over the MANET. These enhancements will impact charging aspects.

This work item aims to focus on the enhancements to the charging aspects of 5G ProSe phase 3.

# 4 Objective

The objective of this work is to specify the enhancement of charging mechanisms for the 5G ProSe:

* WT-1: Charging enhancements to support multi-hop UE-to-Network/UE-to-UE Relay based on PC5 protocol:
* Message flow enhancements for ProSe direct discovery and direct communication if necessary
* Message information enhancement to support multi-hop relay solutions.
* WT-2: Charging enhancements to support Layer 3 multi-hop UE-to-UE Relays of IP PDU type based on a new Protocol of IETF MANET.
* New message flows for ProSe direct discovery over MANET
* Message information enhancement to support MANET protocol solution.

## TU estimates and dependencies

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Work Task ID | TU Estimate  (Study) | TU Estimate  (Normative) | RAN Dependency  (Yes/No/Maybe) | SA Dependency  (Yes/No/Maybe) | Non-3GPP Dependency  (Yes/No/Maybe) |
| WT-1 | 0 | 3 | No | Yes | No |
| WT-2 | 0 | 3 | No | Yes | No |

# 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 32.277 | *Charging enhancements to support multi-hop UE-to-Network Relay.*  *Charging enhancements to support Layer 3 multi-hop UE-to-UE Relays* | TSG SA #107  (June, 2025) |  |
| TS 32.291 | *Corresponding Stage 3 of Charging enhancements*  *in Open API* | TSG SA #108  (Sep, 2025) |  |
| TS 32.298 | *Corresponding Stage 3 of Charging enhancements in the CHF CDR and ASN.1* | TSG SA #108  (Sep, 2025) |  |

# 6 Work item Rapporteur(s)

# 7 Work item leadership

SA WG5

# 8 Aspects that involve other WGs

SA WG2

# 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| China Telecom |
| China Unicom |
| CATT |
| Huawei |
|  |
|  |

*s*