**3GPP TSG-SA WG6 Meeting #51-e S6-222642rev1**

e-meeting, 10th – 19th October 2022

**Source: CATT**

**Title: New WID on 5G-enabled fused location service capability exposure**

**Document for: Agreement**

**Agenda Item: 10**

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: 5G-enabled fused location service capability exposure

Acronym: 5GFLS

Unique identifier:

Potential target Release: Rel-18

# 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

|  |  |
| --- | --- |
| X | Feature |
|  | 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) |
| FS\_5GFLS | SA6 | 920015 | Study on 5G-enabled fused location service capability exposure |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| 820016 | Enhancement to the 5GC LoCation Services | Normative work for 5GC LoCation Services in Rel-16 |
| 820025 | Study on application layer support for Factories of the Future in 5G network | Study related to application layer support for future factories in Rel-17 |
| 830077 | NR Positioning Support | Normative work for NR positioning in Rel-16 |
| 870001 | Enhancement to the 5GC LoCation Services-Phase 2 | Normative work for 5GC LoCation Services in Rel-17 |
| 890025 | Enhanced application layer support for V2X services | Normative work for application layer enhanced support for V2X in Rel-17 |
| 900025 | Application layer support for Unmanned Aerial System (UAS) | Normative work for application layer support for UAS in Rel-17 |
| 900160 | NR Positioning Enhancements | Normative work for NR positioning in Rel-17 |

# 3 Justification

SA1 has specified in 3GPP TS 22.261, 3GPP TS 22.104, and 3GPP TS 22.125 the requirements for positioning service and performance requirements (including high-accuracy positioning) for various vertical applications. It is addressed in 3GPP TS 22.261 that the combination of 3GPP positioning technologies with non-3GPP positioning technologies (such as GNSS, TBS, sensors, WLAN/Bluetooth-based positioning) can support the improvement of accuracy, positioning service availability, reliability, and/or confidence level, the reduction of positioning service latency, the increase of the update rate of the position-related data, increase the coverage (service area). Adaptability and flexibility are among the key features of the 5G system to serve a wide diversity of verticals and services, in different environments (e.g. rural, urban, and indoor). This applies to high accuracy positioning and translates into the ability to satisfy different levels of services and requirements, for instance on performance (e.g. accuracy, positioning service availability, positioning service latency) and functionality (e.g. security).

In SA6, the discussions about e.g. eV2XAPP, UASAPP, and FS\_FFAPP have involved different sources of location services (e.g. 3GPP technologies and non-3GPP technologies) available at the application layer, the application enabler needs to consider the combination or fusion of different location technologies as to improve the location performance, adapt to different environments, make sure the UE provided location is not spoofed and meets the diversified vertical service’s needs.

At present, SA6 has studied the capability required for the 5G-enabled fused location service as part of SEAL services in the 3GPP TR 23.700-96 and the conclusions for all of key issues have been documented. Hence, a normative work is proposed to be implemented in SA6 for specifying the 5G-enabled fused location service capability exposure to be utilized by any vertical application layer.

# 4 Objective

The objectives of the work for 5G-enabled fused location service capability exposure which are based on the conclusion of TR 23.700-96 include the following:

1. Specify the architectural enhancements and functional model to support the Fused Location Function which is part of the SEAL Location Management Server for 5G-enabled fused location service.

2. Support the following functionalities:

 - Support architecture enhancement of application enablement for location through combined use and a fusion of

different location information from multiple resources;

 - Support location sources and positioning methods selection based on the requested location QoS;

 - Support to set different dimensions to distinguish location services in the application enabler layer;

 - Support initialization and service flow for 5G-enabled fused location service.

3. Specify the procedures, information flows, and APIs for the above functionalities.

# 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 |
| 23.434 | Enhancements to introduce the 5G-enable fused location service capability exposure | SA#99 (Mar 2023) |  |

# 6 Work item Rapporteur(s)

Liping Wu, CATT, wuliping@cictmobile.com

# 7 Work item leadership

SA6

# 8 Aspects that involve other WGs

SA2 for core network architecture aspects; SA3 for security aspects; SA5 for charging aspects.

# 9 Supporting Individual Members

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| --- |
| Supporting IM name |
| CALTTA |
| CATT |
| China Mobile |
| China Telecom |
| China Unicom |
| Convida Wireless LLC |
| Huawei |
| Lenovo |
| Motorola Mobility |
| Tencent |
| ZTE |