**SA WG2 Meeting SA2#153E S2-2208798r01**

**10 - 17 October 2022, Electronic meeting (Revision of SP-220987)**

**Source: Huawei, HiSilicon**

**Title: Revised WID: Edge Computing Phase 2**

**Document for: Approval**

**Agenda Item: 10.3**

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: Edge Computing Phase 2

Acronym: EDGE\_Ph2

Unique identifier: 970026

Potential target Release: *Rel-18*

# 1 Impacts

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

|  |  |
| --- | --- |
| 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) |
|  |  |  | N/A |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| 940059 | Study on Edge Computing Phase 2 | Corresponding study for architecture enhancements and procedures (SA2) |
| 830032 | Study on enhancement of support for Edge Computing in 5GC | Rel-17 study for architecture enhancements and procedures (SA2) |
| 900016 | Enhancement of support for Edge Computing in 5G Core network | Rel-17 WI for Enhancement of support for Edge Computing (SA2) |
| 880002 | Study on Security Aspects of Enhancement of Support for Edge Computing in 5GC | Study of the security aspects of Edge Computing (SA3). |
| 870015 | Study on Streaming Architecture extensions For Edge processing | Study of media architecture to support processing of media services with edge computing deployment (SA4). |
| 870029 | Study on enhancements of edge computing management | Study of the management aspects of Edge Computing (SA5). |
| 880030 | Study on charging aspects of Edge Computing | Study of the charging aspects of Edge Computing (SA5). |
| 860006 | Architecture for enabling Edge Applications | Application layer architecture and corresponding mechanisms to enable Edge Computing deployment (SA6). |

# 3 Justification

Edge Computing is supported in 5GS since Rel-15.

In Rel-17 FS\_enh\_EC study, further enhancements for supporting Edge Computing have been studied, including discovery and re-discovery of EAS, edge relocation etc. 4 key issues from FS\_enh\_EC study have been concluded and progressed to the normative phase according to TR 23.748, including a new TS 23.548.

In Rel-18 FS\_EDGE\_Ph2 study, additional enhancements have been studied and are being concluded:

- Improvements to roaming, to support access to EHE in a VPLMN.

- Define use cases that may benefit from exposure of additional data via the Local UPF/NEF including describing (on a high level) the characteristics of the data and data delivery to fulfil the use cases. Investigate the solutions and their feasibility and suitability for improved network exposure of UE traffic related information to common Edge Application Server via Local UPF/NEF, such as network congestion status.

- Investigate the potential need and solutions for supporting offload policies to match more granular sets of UE(s) without exposing operator-internal configurations to 3rd party AFs.

- Investigate the potential need and solutions to influence of PSA-UPF and EAS (re)location for collection of UEs, e.g. in scenarios when UE(s) should use the same EAS and are not members of a pre-defined group.

- Investigate potential impacts related to the GSMA Operator Platform Group work, and potential improvements related with 5GC and EHE being operated by different organizations.

- Investigate the potential need and solutions to avoid the UE to switch the EC traffic away from the EC PDU Session and 5GS altogether, due to conflicting connectivity preferences in the device (e.g. via means outside of 3GPP connectivity, e.g. non-integrated Wifi).

- Investigate the potential solutions for the AF to be able to obtain/determine the DNAI that is associated to a certain selected EAS, for subsequent use with already defined services provided to the AF.

This work item is to specify the enhancements that have been concluded in TR 23.700-48 as a result of the FS\_EDGE\_Ph2 study, in order to improve the completion of support of Edge Computing in 5GS.

# 4 Objective

This work item will implement the conclusions on the following aspects of the study on Edge Computing phase 2 enhancements:

- (KI#1) accessing an EHE in a VPLMN when roaming, including the scenario using a PDU Session with a PSA in the HPLMN and the scenario using a LBO PDU Session;

- (KI#3) supporting policies for finer granular sets of UEs;

- (KI#4) influencing UPF and EAS (re)location for collections of UEs;

- (KI#5) providing improvements related to GSMA OPG for EHE operated by a separate party;

- (KI#7) allowing an AF to obtain and maintain a mapping table between IP address/IP range and DNAI.

# 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 |
| N/A |  |  |  |  |  |

|  |
| --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
| 23.548 | Improvement to Edge computing architecture and procedures | TSG#99 (March 2023) | impacts according to conclusions |
| 23.501 | Improvements to 5G architecture | TSG#99(March 2023) | impacts according to conclusions |
| 23.502 | Improvements to 5G procedures | TSG#99(March 2023) | impacts according to conclusions |
| 23.503 | Improvements to 5G policies | TSG#99(March 2023) | impacts according to conclusions |

# 6 Work item Rapporteur(s)

Patrice Hédé, Huawei Technologies, patrice dot hede at huawei dot com

# 7 Work item leadership

SA2

# 8 Aspects that involve other WGs

Security aspects are considered by SA3.

Management and charging aspects are considered by SA5.

Application layer aspects are considered by SA6.

# 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| Huawei |
| HiSilicon |
| Nokia |
| Nokia Shanghai Bell |
| Alibaba |
| Apple |
| AT&T |
| CATT |
| Charter |
| China Mobile |
| China Unicom |
| Deutsche Telekom |
| Dish Networks |
| Ericsson |
| Futurewei |
| Intel |
| InterDigital |
| KDDI |
| KPN |
| Lenovo |
| LG Electronics |
| Matrixx Software |
| Meta USA |
| Microsoft |
| Motorola Mobility |
| NEC |
| NTT Docomo |
| Oppo |
| Qualcomm |
| Rakuten Mobile |
| Sony |
| Telecom Italia |
| Tencent |
| T-Mobile USA |
| Toyota |
| vivo |
| Vodafone |
| ZTE |