**3GPP TSG-CT WG3 Meeting #138C3-246032**

**Orlando, U.S.; 18 – 22 November 2024** **(revision of CP-242026)**

**Source: Nokia**

**Title: Revised WID on CT aspects of enhancement of support for Edge Computing in 5G Core network - Phase 3**

**Document for: Endorsement**

**Agenda Item: 19.3**

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: CT aspects of enhancement of support for Edge Computing in 5G Core network - Phase 3

Acronym: eEDGE\_5GC\_Ph3

Unique identifier: 1050006

Potential target Release: Rel-19

# 1 Impacts

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

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

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

## 2.2 Parent Work Item

|  |
| --- |
| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| eEDGE\_5GC\_Ph3 | SA2 | 1040036 | Enhancement of support for Edge Computing in 5G Core network - Phase 3 |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| 1020004 | Study on Enhancement of support for Edge Computing in 5G Core network — phase 3 | Rel-19 SI for Edge Computing Phase 3 (SA2) |
| 1030036 | Study on Security Aspects of Enhancement of Support for Edge Computing in 5GC phase 3 | Rel-19 SI for Edge Computing Phase 3 (SA3) |

# 3 Justification

Edge Computing has been supported in the 5GS since Release 15. Building on the advancements made in Releases 17 and 18, SA2 has identified aspects that require further enhancements in Rel-19, including (i) more efficient management of EHE information and (ii) improved EAS (re)discovery.

The stage 2 work of eEDGE\_5GC\_Ph3 started at SA#102 with the SA2 study item on the Enhancement of Support for Edge Computing in the 5G Core Network - Phase 3 (FS\_eEDGE\_5GC\_Ph3). The key issues, solutions, and conclusions of the SA2 study are documented in TR 23.700-49. The conclusions specified in TR 23.700-49 will serve as the basis for the normative work in SA2.

Additionally, a Stage 2 work item, "Enhancement of Support for Edge Computing in the 5G Core Network - Phase 3" (eEDGE\_5GC\_Ph3), was approved by TSG SA at SA#105 (SP-241284). Considering the above, impacts on protocols and interfaces under CT WGs' responsibilities are foreseen. The CT WGs will need to carry out stage-3 work in Release 19 to satisfy the normative requirements arising from stage-2 work.

# 4 Objective

The objective of this work item is to specify the CT aspects of eEDGE\_5GC\_Ph3. The stage-3 work shall be started after the applicable normative stage-2 requirements in SA2 are available.

The stage-3 aspects will include the following (CT WGs impact areas will be identified based on the progress in the normative stage-2 work):

CT4:

1. Enhancements for EAS (re)discovery and UPF (re)selection with reducing impact on central 5GC NF

a) Update to the Nudm\_SDM service to support a new Local Offloading Management allowed indication in the subscription data.

b) Potential update to the UDR to support a new feature for local offloading.

c) Updates to the Nsmf\_PDUSession service to support new IEs over N11 and N16a for the support of I-SMF based Local Offloading Management, including:

* a new Local Offloading Management allowed indication in the Create SM Context Request;
* new information from SMF to I-SMF, e.g. Local Offloading Management information;
* new information from I-SMF to SMF, e.g. EASDF IP address, DNS security information, information for EAS rediscovery; and
* potential updates to N16a to facilitate the forwarding of AF-provided traffic influence information from the SMF to the I-SMF.

d) Updates to the NRF APIs to support UPF selection based on the supported N6 delay measurement protocols. Potential updates to the NRF APIs to support I-SMF selection for local offloading management.

e) Updates to support the I-SMF as a consumer of the EASDF (Neasdf\_DNSContext and Neasdf\_BaselineDNSPattern) services.

2. Enhancement of EAS and local UPF (re)selection

a) PFCP enhancements over N4 to support N6 delay measurement and reporting.

CT3:

1. Enhancements for EAS (re)discovery and UPF (re)selection with reducing impact on central 5GC NF

a) Update to the SM Policy Association API and procedures to support local offloading policy.

2. Enhancement of EAS and local UPF (re)selection

a) Update to the Traffic influence and Policy Authorization APIs and procedures (i.e. Nnef\_TrafficInfluence and Npcf\_PolicyAuthorization services) to support N6 delay measurements.

b) Update to the EAS Deployment Information APIs and procedures (i.e. Nnef\_EASDeployment service, northbound and southbound) to support N6 delay measurements.

# 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 |
| NA |  |  |  |  |  |

|  |
| --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
| 29.244 | PFCP enhancements over N4 to support N6 delay measurement and reporting. | TSG#109 (September 2025) | CT4 |
| 29.502 | Updates to the Nsmf\_PDUSession service to support new IEs over N11 and N16a for the support of I-SMF based Local Offloading Management, as described in clause 4. | TSG#109 (September 2025) | CT4 |
| 29.503 | Update to the Nudm\_SDM service to support a new Local Offloading Management allowed indication in the subscription data. | TSG#109 (September 2025) | CT4 |
| 29.504 | Potential update to support new feature for N6 delay measurements. | TSG#109 (September 2025) | CT4 |
| 29.510 | Updates to support UPF selection based on the supported N6 delay measurement protocols.Potential updates to support I-SMF selection for local offloading management. | TSG#109 (September 2025) | CT4 |
| 29.556  | Updates to support the I-SMF as a new consumer of the EASDF (Neasdf\_DNSContext and Neasdf\_BaselineDNSPattern) services. | TSG#109 (September 2025) | CT4 |
|  |  |  |  |
| 29.571 | Definition of Local Offloading Management Information. | TSG#109 (September 2025) | CT4 |
| 29.512 | Update to the SM Policy Association API to support local offloading policy. Update to the SM Policy Association API to support N6 delay measurements. | TSG#109 (September 2025) | CT3 |
| 29.513 | Potential update to the SM Policy Association procedure to support local offloading policy. Potential update of Traffic influence procedure to support N6 delay measurements. | TSG#109 (September 2025) | CT3 |
| 29.514 | Update of the Policy Authorization API to support N6 delay measurements. | TSG#109 (September 2025) | CT3 |
| 29.519 | Potential update of the UDR data model to support N6 delay measurements. | TSG#109 (September 2025) | CT3 |
| 29.522 | Update to the TrafficInfluence service and the EASDeployment service to support N6 delay measurements. | TSG#109 (September 2025) | CT3 |
| 29.591 | Update to the Nnef\_EASDeployment service to support N6 delay measurements. | TSG#109 (September 2025) | CT3 |

# 6 Work item Rapporteur(s)

Landais, Bruno, Nokia, bruno.landais@nokia.com

# 7 Work item leadership

CT4

# 8 Aspects that involve other WGs

SA3 for the security aspects.

# 9 Supporting Individual Members

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| Supporting IM name |
| Intel |
| Nokia |
| Huawei |
| Ericsson |
| China Mobile |
| ZTE |
| Samsung |
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