**3GPP TSG-CT Meeting #104CP-241296**

**Shanghai, P.R. China; 17th – 18th June 2024 (was CP-241025)**

**Source: China Mobile**

**Title: Study on Protocol for AI Data Collection from UPF**

**Document for: Approval**

**Agenda Item: 5.1**

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: Study on Protocol for AI Data Collection from UPF

Acronym: FS\_PAIDC-UPF

Unique identifier: 1040005

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 …

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

## 2.2 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 |
| N/A |  |  |

# 3 Justification

The service-based architecture in 5G facilitates flexible information exchange between network functions via standardized Service Based Interfaces (SBI). This definition provides a suitable framework for 5G system especially the AI/ML functions (e.g. NWDAF) to collect required data from various sources.

However, as AI/ML adoption grows for 5G use cases like network automation, analytics and others, there is a need for an optimized protocol to efficiently collect data from sources in the user plane (e.g. Nupf interface as defined in 3GPP TS 29.564) and/or control plane (e.g. Nnwdaf interface as defined in 3GPP TS 29.520) over the SBI. This is especially critical when frequent or huge data volumes need to be transferred, to ensure responsiveness and scalability of AI/ML systems without impacting or lowering the impact on network performance.

# 4 Objective

The SID aims at studying UPF data Collection for AI/ML and whether alternative protocols, or enhancements to the existing SBI protocol, are needed to optimize the AI/ML data collection while ensuring secure, scalable and reliable data transfers across the core network:

1) Identify key issues, e.g. use cases for UPF data Collection for AI/ML where current mechanisms do not suffice.

2) Study of the corresponding protocol solutions for efficient AI/ML data collection.

3) Study on the mechanisms to optimize the protocol selection when different protocols exist.

The study will target optimizing the data collection from the User Plane Function (i.e. the Nupf\_EventExposure service). Data collection from 5GC NFs other than UPF are out of scope of this study.

The study shall remain within the limits of the existing 5GC architecture and SA2 requirements (i.e. to collect AI related data via interface exposed by UPF). Only the protocol for collecting the data is the object of this study.

NOTE: This work item does not cover the work potentially to be carried out by SA4 on media data collection.

The study should develop example use cases and explain the potential limits of the existing protocol.

Any alternative protocol should be suitable to the Service Based Architecture, be well justified and be compared with the existing protocol solution.

# 5 Expected Output and Time scale

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| New specifications | | | | | |
| Type | TS/TR number | Title | For info  at TSG# | For approval at TSG# | Rapporteur |
| Internal TR | TR 29.889 | Study on Protocol for AI Data Collection from UPF | TSG#107 (March, 2025) | TSG#108 (June, 2025) | CT4  Huang, Zhenning, China Mobile, huangzhenning@chinamobile.com |

|  |  |  |  |
| --- | --- | --- | --- |
| Impacted existing TS/TR | | | |
| TS/TR No. | Description of change | Target completion plenary# | Remarks |
|  |  |  |  |

# 6 Work item Rapporteur(s)

Huang Zhenning, China Mobile, huangzhenning@chinamobile.com

# 7 Work item leadership

CT4

# 8 Aspects that involve other WGs

# 9 Supporting Individual Members

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| --- |
| Supporting IM name |
| China Mobile |
| CATT |
| China Telecom |
| Deutsche Telekom |
| Huawei |
| Nokia |
| Orange |
| SK Telecom |
| vivo |
| ZTE |
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