**3GPP TSG-SA Meeting #103 SP-240abc**

**Maastricht, NL, 19 – 22 March 2024**

**Source: Deutsche Telekom, China Mobile, vivo, OPPO. T-Mobile USA**

**Title: New WID on AI/ML e2e framework**

**Document for: Approval**

**Agenda Item: xxx**

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 AI/ML e2e framework

Acronym: FS\_AIML\_FW

{Propose an acronym. Final acronym to be confirmed at the plenary. The sign "-" is a level separator between (Feature)-(Building Block)-(Work Task). The sign "\_" can be freely used. Studies have to start by "FS\_". Each acronym level has to be simple and short, 7 characters max recommended}

Unique identifier:

{A number to be provided by MCC at the plenary}

Potential target Release: Rel-19

{ Replace XX by the intended Release, e.g. Rel-19. Note that this field indicates the proposed Release at the time of submission of the WID to TSG approval. It can later be changed without a need to revise the WID. The updated target Release is indicated in the Work Plan}

# 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes |  | x | x | x |  |
| No | 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\* |

**\* 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) |
|  |  |  |  |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
|  |  | {optional free text}  |

**Dependency on non-3GPP (draft) specification:**

# 3 Justification

Most working groups in TSG SA, CT and RAN have already performed SIs and/or have WIs on the AI/ML topic.

These activities addressed use cases from their own perspective (e.g., NWDAF usage in the CN, MDAS in OAM, AI/ML for NG-RAN and for air interface in the RAN domain), but a consolidated terminology and E2E framework, especially from LifeCycle Management (LCM) perspective for AI/ML models, is still missing.

AI/ML models are certainly implementation specific and therefore out of scope of 3GPP, but there is the need identified to have a common LCM framework at least for those models that have impact on the network and E2E performance.

# 4 Objective

The activity seeks to align AIML efforts across 3GPP to a common e2e reference while avoiding the creation of a new high level architecture .

The activity should investigate ongoing work in RAN and SA Working Groups and identify instances of misalignment, overlap or inconsistency between solutions being developed by those groups. Those identified issues should be communicated to the relevant Working Groups, encouraging resolution. In some cases, suggested service and/or operation requirements might be communicated to the Working Groups to implement possible resolution to address the issues.

Note: The study is led by SA in a very close cooperation with RAN. The use cases provided by RAN and SA will be considered as part of the study.

WT1: gather AI/ML related activities of all working groups of Rel-18 features and Rel-19 study item descriptions.

WT2: harmonize towards a common terminology across 3GPP.

WT3: perform gap analysis and identify misalignments, overlaps and inconsistencies, and suggest service/operation requirements to address the identified issues.

WT4: Facilitate the cross-working groups harmonization efforts to agree on the common descriptions and definitions of cross-domain lifecycle management for AI/ML models, data collection and ML model download framework when necessary.

NOTE: the AIML related content captured in TR 21.918 ("Release 18 Description; Summary of Rel-18Work Items") will be taken into account as a starting point.

# 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 |
| "Internal TR" or "External TR". See Note 1} | {e.g. "22.XXX" or actual number if known} | {Title of the specification (as per TR 21.801 §6.1.1), to be aligned as much as possible with the WI/SI title} | TSG#106 (Mar25) | TSG#107 (June25) | {<FamilyName>, <GivenName>, <Company>, <email address>. See Note 2} |
|  |  |  |  |  |  |

{Note 1: Only TSs may contain normative provisions. Study Items shall create or impact only TRs.
"Internal TR" is intended for 3GPP internal use only whereas "External TR" may be transposed by OPs.}

{Note 2: The first listed Rapporteur is the specification primary Rapporteur. Secondary Rapporteur(s) are possible for particular aspect(s) of the TS/TR. In this case, their responsibility has to be provided as "Remarks".}

|  |
| --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
| {e.g. "22.281"} | {Possible values: - either free text (e.g. “CS aspects to be removed") - or “Specification to be withdrawn”} | {e.g. "TSG#89"} | {Free text, e.g. "This TS covers Stage 2" or "This TS covers Stage 3" or "This TS covers both stages 2 and 3"} |
|  |  |  |  |

# 6 Work item Rapporteur(s)

{Mandatory: <FamilyName>, <GivenName>, <Company>, <email address>}

{Optional: <FamilyName>, <GivenName>, <Company>, <email address>: Secondary task(s)}

# 7 Work item leadership

TSG SA

# 8 Aspects that involve other WGs

SA1: service and performance requirements and use cases

SA2: architecture aspects for network AI/ML operation

SA3: security and privacy support for network AI/ML operation and network analytics

SA4: AI/ML for MultiMedia

SA5: AI/ML based management and orchestration, and operations, and charging

SA6: application layer support for AI/ML services

RAN1 & RAN2: AI/ML for air interface

RAN3: AI/ML enabled NG-RAN

{This information is provided as best effort assumption, at the time of submission of the WID to TSG approval. It can be later changed without a need to revise the WID.

The “aspects” can be provided by topic (e.g. “security”, “multimedia”) and/or by specifying the WG(s) e.g.: "SA2, SA3, SA5, SA6. CT6 for storage, and potentially SA4". If not applicable, indicate "None" or "None identified yet"}

For a Stage 2 WID requiring Stage 3 to be done by another group: on a best-effort basis, indicate which potential WG is expected to specify the Stage 3: {possible values: "Not applicable", " unknown", "CT WGs", etc}

# 9 Supporting Individual Members

{At least 4 supporting Individual Members are needed. There is an expectation that these companies will provide resources to progress the work. Note that having 4 supporting companies is a necessary but not sufficient condition: the usual TSG approval process by consensus is needed for the WID approval}

|  |
| --- |
| Supporting IM name |
| Deutsche Telekom |
| China Mobile |
| vivo |
| OPPO |
| T-Mobile USA |
| Qualcomm |