**3GPP TSG-SA WG1 Meeting #98e S1-22xxxx**

**Electronic Meeting, 9 – 19 May, 2022**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **22.874** | **CR** | **xxxx** | **rev** | **-** | **Current version:** | **18.2.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **X** | Core Network | **X** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Update of TR 22.874 skeleton for FS\_AIML\_MT\_Ph2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | OPPO | | | | | | | | | |
| ***Source to TSG:*** | SA1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | FS\_AIML\_ph2 | | | | |  | ***Date:*** | | | 2022-5-13 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-19 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | To reuse the TR 22.874 to continue the phase-2 study (leveraging direct divice connection) while not changing any conclusion/descrition in R18, it is propose to update the skeleton of TR22.874. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Clarify the FS\_AIML\_MT\_Ph2 work in scope clause;  Add new sections to capture the FS\_AIML\_MT\_Ph2 use cases | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Inproper progress for AIML\_Ph2 study | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | Clause 1 (existing); and clause 10, 11, 12,13 (newly created) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\*\*\*\*\*\*\*\*\*\* First Change \*\*\*\*\*\*\*\*\*

# 1 Scope

This report captures the study of the use cases and the potential performance requirements for 5G system support of Artificial Intelligence (AI)/Machine Learning (ML) model distribution and transfer (download, upload, updates, etc.), and identifies traffic characteristics of AI/ML model distribution, transfer and training for various applications, e.g. video/speech recognition, robot control, automotive, other verticals.

The aspects addressed include:

* AI/ML operation splitting between AI/ML endpoints;
* AI/ML model/data distribution and sharing over 5G system;
* Distributed/Federated Learning over 5G system.

Study of the AI/ML models themselves are not in the scope of the TR.

There are two phases to the study and the first pahse (in Rel-18) has concluded and clause 4-9 will not be changed in the Rel-19 version of the specification, which means that Rel-19 CRs for 22.874 shall not include any changes to clauses 4-9.

The new phase concerns only the objectives in the AIML\_MT\_Ph2 SID and these will be the Rel-19 changes, and these may lead to new conclusions.

\*\*\*\*\*\*\*\*\*\* Second Change \*\*\*\*\*\*\*\*\*

# 10. Phase 2 overview

# 11. Distributed AI training/inference leveraging direct device connection

## 11.a <Use case a>

### 11.a.1 Description

### 11.b.2 Pre-conditions

### 11.b.3 Service Flows

### 11.b.4 Existing features partly or fully covering the use case functionality

### 11.b.5 Potential New Requirements needed to support the use case

# 12 Consolidated Phase 2 Requirements

Editor’s Note: The consolidated requirements for Ph2 that refers to material from Ph1 must contain a comprehensive assessment from Phase 1. If any Ph1 use case implications, requirements have conclusions that were not agreed as conclusions in Ph1, yet are considered relevant to Ph2, this must be explicitly brought to the reader’s attention.

# 13 Conclusion and Recommendations for Phase 2

### 

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*End of Change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*