**3GPP TSG-SA WG1 Meeting #98e S1-22xxxxr1**

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

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

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| ***Title:*** | Update of TR 22.874 skeleton for FS\_AIML\_MT\_Ph2 | | | | | | | | | |
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| ***Source to WG:*** | OPPO | | | | | | | | | |
| ***Source to TSG:*** | SA1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | FS\_AIML\_ph2 | | | | |  | ***Date:*** | | | 2022-5-13 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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:*** | | This CR allows SA1 to reuse TR 22.874 to pursue FS\_AIML\_Ph2. This second phase (phase 2) focuses on direct device connection. None of the conclusions or content of Rel-18 (FS\_AMMT) are changed. It is proposed to adopt this update to serve as the skeleton for ongoing study using TR 22.874. | | | | | | | | |
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| ***Summary of change:*** | | The skeleton is expanded to modify the scope and add new sections to capture the FS\_AIML\_MT\_Ph2 use cases and conclusion | | | | | | | | |
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| ***Consequences if not approved:*** | | Without agreeing to this update to the TR structure, it will not be possible to reuse it for the phase 2 study | | | | | | | | |
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| ***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.

This technical report is used for two study phases. The first phase has concluded i.e. lause 4-9 shall not be changed in this version of the specification.

The new phase concerns new objectives:

* **Distributed AI training/inference based on direct device connection**, e.g. traffic KPIs, different QoS and f unctional requirements on slidelink transmission.
* **Charging and security** aspects.

The pursuit of these objectives aims to identify new conclusions in this version of the technical report.

\*\*\*\*\*\*\*\*\*\* 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

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