**3GPP TSG-SA5 Meeting #154 *S5-241931d1***

Changsha, China, 15 - 19 April 2024

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **TS 28.105** | **CR** | **0128** | **rev** | **1** | **Current version:** | **18.3.0** |  |
|  | | | | | | | | |
| *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 |  | Radio Access Network | **X** | Core Network | **X** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Rel-18 CR TS 28.105 Update the AI/ML terminology | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, Deutsche Telekom, ? | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | AIML\_MGT | | | | |  | ***Date:*** | | | 2024-03-19 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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:*** | | - For the terminology, the current version defines both ML model training and ML training. ML model training is defined to be the “process performed by an ML training function”, while ML training is defined to be the “end-to-end processes to enable an ML training function to perform ML model initial training or re-training”, these terms are sometimes confusion as they are defined. For the term “ML training”, can not be a term. In addition, we also need to add the terminology related with valiation, testing, loading, emulation and its corresponding function.  - Training, testing, emulation and inference should be performed based on models. Therefore, the word “model” is added.  - Add missing emulation related function terminology. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * Update the terminology name. * Change the word “entity” to “Model” * Add the terminology related with valiation, testing, loading, emulation and its corresponding function. * Add missing emulation related function terminology. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The AI/ML terminology is unclear. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 3.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

|  |
| --- |
| **1st modified section** |

## 3.1 Terms

For the purposes of the present document, the terms given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

**ML model:** a manageable artifact of an ML model algorithm.

NOTE 1: An ML model may contain metadata related to the model algorithm. Metadata may include e.g. the applicable runtime context for the ML model algorithm.

**ML model algorithm:** mathematical algorithm that can be "trained" by data and human expert input as examples to replicate a decision an expert would make when provided that same information.

NOTE 2: The ML model algorithm is proprietary and not in scope for standardization.

**ML model training:** process performed by an ML training function to take training data, run it through an ML model algorithm, derive the associated loss and adjust the parameterization of that ML model algorithm based on the computed loss.

**ML training:** refers to the end-to-end process to enable an ML training function to perform ML model training. The ML training is either ML initial training or ML re-training.

NOTE 3: ML training may include interaction with other parties to collect and format the data required for ML training.

**ML initial training:** the ML training that generates the initial version of an ML model.

**ML re-training:** The ML training for a previously trained ML model.

NOTE 4: A new version of a trained ML model supports the same type of inference as the previous version of the ML model, i.e., the data type of inference input and data type of inference output remain unchanged between the two versions of the ML model, but parameter values might be different for the re-trained model.

**ML joint training:** the processes of ML training for a group of ML model algorithms. The ML joint training generates the ML models for each ML model algorithm.

**ML training function**: a logical function with ML training capabilities.

**AI/ML inference**: refers to the process of running a set of input data through a trained ML model to produce set of output data, such as predictions.

**AI/ML inference function**: a logical function that employs an ML model to conduct inference.

|  |
| --- |
| **End of modified sections** |