**3GPP TSG- Meeting # *d1***

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
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| *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 |  | Radio Access Network | **X** | Core Network | **X** |

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| ***Title:*** |  | | | | | | | | | |
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| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
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| ***Work item code:*** | eMDAS | | | | |  | ***Date:*** | | |  |
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| ***Category:*** | **A** |  | | | | | ***Release:*** | | |  |
|  | *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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
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| ***Reason for change:*** | | Use case “Managing ML training processes” and requirements for ML training needs to be corrected in order to fit the specified solutions for training in for Rel 18. | | | | | | | | |
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| ***Summary of change:*** | | This contribution proposes to remove use case “Managing ML training processes” and requirements related to it.  Void Duplicate requirement REQ- ML\_TRAIN-FUN-07, REQ-ML\_TRAIN- MGT-02  Void REQ-ML\_TRAIN- MGT-03 due to lack of solution  Correct REQ-ML\_TRAIN- MGT-04 , Correct REQ-ML\_ERROR-02 and REQ-ML\_ERROR-04 to fit the solution | | | | | | | | |
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| ***Consequences if not approved:*** | | leads to incorrect implementation. | | | | | | | | |
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| ***Clauses affected:*** | | 6.2a.1.2.4 and 6.2a.1.3 | | | | | | | | |
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|  | | **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:*** | |  | | | | | | | | |

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| **Start of modification** |

##### 6.2a.1.2.4 Managing ML training processes

To achieve the desired outcome of any machine learning for related use-case or task,the ML model needs to be trained with the appropriate data.

The 3GPP management system needs to have the required training capabilities as well as to have the means to manage the training request of an ML Model by starting, cancelling or suspending the process.

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| **Next modification** |

#### 6.2a.1.3 Requirements for ML training

Table 6.2a.1.3-1

| Requirement label | Description | Related use case(s) |
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| **REQ-ML\_TRAIN-FUN-01** | The MLT MnS producer shall have a capability allowing an authorized MLT MnS consumer to request ML training. | ML training requested by consumer (clause 6.2a.1.2.1) |
| **REQ- ML\_TRAIN-FUN-02** | The MLT MnS producer shall have a capability allowing the authorized MLT MnS consumer to specify the data sources containing the candidate training data for ML training. | ML training requested by consumer (clause 6.2a.1.2.1) |
| **REQ- ML\_TRAIN-FUN-03** | The MLT MnS producer shall have a capability allowing the authorized MLT MnS consumer to specify the inference type of the ML entity to be trained. | ML training requested by consumer (clause 6.2a.1.2.1) |
| **REQ- ML\_TRAIN-FUN-04** | The MLT MnS producer shall have a capability to provide the training result to the MLT MnS consumer. | ML training requested by consumer (clause 6.2a.1.2.1), ML training initiated by producer (clause 6.2a.1.2.2) |
| **REQ- ML\_TRAIN-FUN-05** | The MLT MnS producer shall have a capability allowing an authorized MLT MnS consumer to configure the thresholds of the performance measurements and/or KPIs to trigger the re-training of an ML entity. (See Note) | ML training initiated by producer (clause 6.2a.1.2.2) |
| **REQ- ML\_TRAIN-FUN-06** | The MLT MnS producer shall have a capability to provide the version number of the ML entity and the time when it is generated by ML re-training to the authorized MLT MnS consumer. | ML training requested by consumer (clause 6.2a.1.2.1), /ML training initiated by producer (clause 6.2a.1.2.2) |
| **REQ- ML\_TRAIN-FUN-07** | VOID | VOID |
| **REQ- ML\_TRAIN-FUN-08** | The MLT MnS producer should have a capability to provide the grouping of ML entities to an authorized MLT MnS consumer to enable coordinated inference. | ML entity joint training (clause 6.2a.1.2.6) |
| **REQ- ML\_TRAIN-FUN-09** | The MLT MnS producer should have a capability to allow an authorized MLT MnS consumer to request joint training of a group of ML entities. | ML entity joint training (clause 6.2a.1.2.6) |
| **REQ- ML\_TRAIN-FUN-10** | The MLT MnS producer should have a capability to jointly train a group of ML entities and provide the training results to an authorized consumer. | ML entity joint training (clause 6.2a.1.2.6) |
| **REQ-ML\_SELECT-01** | 3GPP management system shall have a capability to enable an authorized MLT MnS consumer to discover the properties of available ML entities including the contexts under which each of the models associated with the ML entities were trained. | ML model and ML entity selection (clause 6.2a.1.2.3) |
| **REQ-ML\_SELECT-02** | 3GPP management system shall have a capability to enable an authorized MLT MnS consumer to select an ML entity to be used for inference. | ML models and ML entity selection (clause 6.2a.1.2.3) |
| **REQ-ML\_SELECT-03** | 3GPP management system shall have a capability to enable an authorized MLT MnS consumer to request for information and be informed about the available alternative ML entities of differing complexity and performance. | ML model and ML entity selection (clause 6.2a.1.2.3) |
| **REQ-ML\_SELECT-04** | The 3GPP management system shall have a capability to provide a selected ML entity to the authorized MLT MnS consumer. | ML model and ML entity selection (clause 6.2a.1.2.3) |
| **REQ-ML\_TRAIN- MGT-01** | The MLT MnS producer shall have a capability allowing an authorized consumer to manage and configure one or more requests for the specific ML training, e.g. to modify the request. | ML training requested by consumer (clause 6.2a.2.1), Managing ML Training Processes (clause 6.2a.1.2.4) |
| **REQ-ML\_TRAIN- MGT-02** | VOID | VOID |
| **REQ-ML\_TRAIN- MGT-03** | VOID | VOID |
| **REQ-ML\_TRAIN- MGT-04** | 3GPP management system shall have a capability to enable an authorized MLT MnS consumer to define the reporting characteristics related to a specific training request. | Managing ML training processes (clause 6.2a.1.2.4) |
| **REQ-ML\_TRAIN- MGT-05** | 3GPP management system shall have a capability to enable the MLT function to report to any authorized MLT MnS consumer about specific ML training process and/or report about the outcomes of any such ML training process. | Managing ML training processes (clause 6.2a.1.2.4) |
| **REQ-ML\_ERROR-01** | The 3GPP management system shall enable an authorized consumer of data services (e.g. an MLT function) to request from a producer of data services a Value Quality Score of the data, which is the numerical value that represents the dependability/quality of a given observation and measurement type. | Handling errors in data and ML decisions (clause 6.2a.1.2.5) |
| **REQ-ML\_ERROR-02** | The 3GPP management system shall enable an authorized consumer to request decision confidence score which is the numerical value that represents the dependability/quality of the associated performance metric. | Handling errors in data and ML decisions (clause 6.2a.1.2.5) |
| **REQ-ML\_ERROR-03** | The 3GPP management system shall enable a producer of data services (e.g. a gNB) to provide to an authorized consumer (e.g. an MLT function) a Value Quality Score of the data, which is the numerical value that represents the dependability/quality of a given observation and measurement type. | Handling errors in data and ML decisions (clause 6.2a.1.2.5) |
| **REQ-ML\_ERROR-04** | The 3GPP management system shall enable a producer to provide to an authorized consumer an decision confidence score which is the numerical value that represents the dependability/quality of the associated performance metric. | Handling errors in data and ML decisions (clause 6.2a.1.2.5) |
| **REQ-ML\_VLD-01** | The MLT MnS producer should have a capability to validate the ML entities during the ML training process and report the performance of the ML entities on both the training data and validation data to the authorized consumer. | ML entity validation performance reporting (clause 6.2a.1.2.7) |
| **REQ-ML\_VLD-02** | The MLT MnS producer should have a capability to report the ratio (in terms of quantity of data samples) of the training data and validation data used during the ML training and validation process. | ML entity validation performance reporting (clause 6.2a.1.2.7) |
| **REQ-TRAIN\_EFF-01** | The 3GPP management system should have the capability to allow an authorized consumer to configure an ML training function to report the effectiveness of data used for model training. | Training data effectiveness reporting (clause 6.2a.1.2.8) |
| NOTE: The performance measurements and KPIs are specific to each type (i.e., the inference type that the ML entity supports) of ML entity. | | |

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| **End of modification** |