**3GPP TSG- Meeting #**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** |  | **rev** | **1** | **Current version:** |  |  |
|  | | | | | | | | |
| *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:*** | Input to DraftCR TS 28.105 Correct Inference History Use case | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** |  | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***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:*** | | Correct Inference History use case to reflect specified solution. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | correct description of Use Case AI/ML Inference History to fit the solution | | | | | | | | |
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| ***Consequences if not approved:*** | | leads to incorrect implementation. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.5.5.2 and 6.5.5.3. | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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** |

#### 6.5.5.2 Use cases

##### 6.5.5.2.1 AI/ML Inference History - tracking inferences and context

For different automation requirements in specific network domain, management/automation functions (e.g., MDAS, SON) may apply ML functionality to make the appropriate inferences in different contexts. The context is the set of appropriate conditions under which the inference was made including network conditions, traffic characteristics, time of day, weather, and climate, etc. And depending on the contexts, the different inferences may have different outcomes. The inference history, which is the history of such inferences and the contexts within which they are taken, may be of interest to different consumers. The AI/ML inference history includes outputs derived by the ML entity and the contexts, e.g., network resources, time periods, traffic conditions, etc .The inference history output should be reported by the MnS Producer to the MnS Consumer.

The inferences may need to be tracked for future reference, e.g., to evaluate the appropriateness/usefullness of the inference outcome for those contexts or to evaluate degradations in the ML entity's performance. For this, the network not only needs to have the required inference capabilities but needs also to have the means to track and enable usage of the history of the inferences made by the ML entity. The MnS producer, i.e., a specific AI/ML inference function should also provide the capability for AI/ML inference history Control, the means to control the process of compiling and reporting on AI/ML inference history.

ML Inference History Control

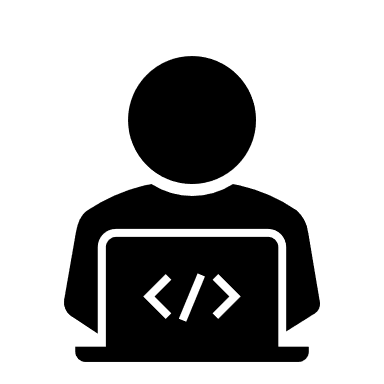
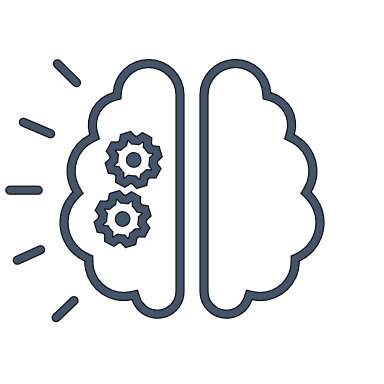
MLEntity

Request ML Inference History

Report on ML Inference History

**ML MnS Producer (provides Inference History )**

**MnS Consumer**



**Figure 6.5.5.2.1-1: Example use and control of AI/ML inference history request and reporting.**

#### 6.5.5.3 Requirements for Executing AI/ML Inference

Table 6.5.5.3-1

| Requirement label | Description | Related use case(s) |
| --- | --- | --- |
| **REQ-AI/ML\_INF-HIST-01** | The MnS producer for AI/ML inference management should have a capability allowing an authorized consumer to receive the inference history of a specific ML entity. | AI/ML Inference History - tracking inferences and context (clause 6.5.5.2.1) |
| **REQ-AI/ML-INF-HIST-02** | The MnS producer for AI/ML inference management should have a capability enabling an authorized consumer to define the reporting characteristics of historical inference outputs related to a specific instance of an ML entity. | AI/ML Inference History - tracking inferences and context (clause 6.5.5.2.1) |

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| **End of modification** |