**SA WG2 Meeting #148E S2-2108599r08**

**Nov 15 - 22, 2021, Electronic**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **23.288** | **CR** | **0480** | **rev** | **-** | **Current version:** | **17.2.0** |  |
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| *For* ***HE******LP*** *on using this form: comprehensive instructions can be found at  http://www.3gpp.org/Change-Requests.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | User consent for analytics and model training | | | | | | | | | |
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| ***Source to WG:*** | CATT, Nokia, vivo, Huawei | | | | | | | | | |
| ***Source to TSG:*** | S2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eNA\_Ph2 | | | | |  | ***Date:*** | | | 2021-10-11 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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. | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) Rel-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
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| ***Reason for change:*** | | 1. The user consent indicates whether the user authorizes the collection and usage of its data for a particular purpose e.g., analytics or model training. So if the NWDAF receives a request for ML model related to user(s), the NWDAF should also check user consent before collecting user data for model (re)training. 2. If the requested analytics or ML model is only about one user (i.e. Target of Analytics Reporting or Target of ML model Reporting is set to one SUPI), and if user consent is not granted, the NWDAF should reject the request. 3. For enhanced procedures for data collection as specified in clause 6.2.6, before collecting user data from the NF via the DCCF or the NWDAF hosting DCCF, the NWDAF should also check user consent. | | | | | | | | |
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| ***Summary of change:*** | | 1. Add descriptions on NWDAF checking user consent before collecting user data for model (re)training. 2. Add descriptions that the NWDAF rejects the request for analytics or ML model related to only one user if the user consent is not granted. 3. Clarify that the NWDAF should also check user consent before collecting user data from an NF as described in clause 6.2.6. | | | | | | | | |
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| ***Consequences if not approved:*** | | It is unclear whether and how user consent is applied to model training and to enhanced procedures for data collection. | | | | | | | | |
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| ***Clauses affected:*** | | 6.2.9 | | | | | | | | |
| ***“*** | |  | | | | | | | | |
|  | | **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 Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 6.2.9 User consent for analytics

Depending on local policy or regulations, to protect the privacy of user data, the data collection, ML model training and analytics generation for a SUPI or GPSI, Internal or External\_Group\_Id or "any UE" may be subject to user consent bound to a purpose, such as analytics or model training. The user consent is subscription information stored in the UDM, that includes:

a) whether the user authorizes the collection and usage of its data for a particular purpose;

b) the purpose for data collection, e.g., analytics or model training.

The NWDAF retrieves the user consent to data collection and usage from UDM for a user, i.e. SUPI prior to collecting user data from an NF as described in clause 6.2.2 and clause 6.2.6.

If a request for analytics is for "any UE", meaning that the consumer requests analytics for all UEs registered in an area, such as a S-NSSAI or DNN or AoI, then the NWDAF resolves "any UE" into a list of SUPIs using the Namf\_EventExposure service with EventId "Number of UEs served by the AMF and located in an area of interest" and retrieves user consent for each SUPI. If a request for analytics is for an Internal or External Group Id, NWDAF resolves it into a list of SUPIs and retrieves user consent for each SUPI.

If a request for ML model as specified in clause 6.2A is for "any UE", meaning that the consumer (i.e. an NWDAF containing AnLF) requests ML model for an analytics on all UEs registered in an area, such as a S-NSSAI or DNN or AoI, then the NWDAF containing MTLF resolves "any UE" into a list of SUPIs using the Namf\_EventExposure service with EventId "Number of UEs served by the AMF and located in an area of interest" and retrieves user consent for each SUPI. If a request for ML model is for an Internal or External Group Id, the NWDAF containing MTLF resolves it into a list of SUPIs and retrieves user consent for each SUPI.

If user consent for a user is granted, then the NWDAF subscribes to user consent updates in UDM using Nudm\_SDM\_Subscribe service operation. Otherwise, the NWDAF rejects the request for analytics or ML model if the request is only for one UE (i.e. SUPI of this user), or excludes the corresponding SUPI from the request to collect data and generate analytics or ML model on the other users for which user consent is granted if the request is for a group of UE or "any UE".

To avoid user consent retrieving from the UDM repeatedly, if the NWDAF containing AnLF has retrived user consent for a UE and indicates it to the NWDAF containing MTLF during ML model subscription, then the MTLF performs UE related data collection for ML model training based on the user consent obtained from the AnLF. Otherwise, the MTLF will retrieve the user consent from UDM.

When Data is collected from the UE Application, the ASP is responsible to obtain user consent to share data with the MNO.

If the UDM notifies that the user consent changed, then the NWDAF checks if the user consent is not granted for the purpose of analytics or model training. If user consent was revoked for a UE, the NWDAF stops data collection for that UE. For analytics subscriptions to UE related analytics with target for analytics set to that UE, the NWDAF stops generation of new analytics and stops providing affected analytics to consumers. For ML model subscriptions to UE related model with Target of ML Model Reporting set to that UE (i.e. ML Model(s) characterising individual UE), the NWDAF containing MTLF stops (re-)training of ML model(s) using data from the UE and stops providing the ML model(s) to consumers (NWDAF containing AnLF) for analytics. The NWDAF may delete the stored data, ML model(s) and analytics related to the UE according to local regulatory requirements. If the target for analytics or Target of ML model Reporting is either an Internal or External Group Id or a list of SUPIs or "any UE", the NWDAF skips those SUPIs that do not grant user consent for the purpose of analytics or model training. The NWDAF may unsubscribe to be notified of user consent updates from UDM for users for which data consent has been revoked.

NOTE: The NWDAF can provide analytics or ML model to consumers that request analytics or ML model for an Internal or External Group Id, or for "any UE", skipping those users for which consent is not granted or is revoked.

The Analytics ID that needs to check user consent before collecting input data are those that collect input data per user, i.e. per SUPI, GPSI, Internal or External Group Id, or those with Target for Analytics or Target of ML model Reporting set to a SUPI, GPSI or External or Internal Group Id, and are described in clause 6.

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