The AIML\_CN WID is [SP-240991](https://www.3gpp.org/ftp/tsg_sa/TSG_SA/TSGS_104_Shanghai_2024-06/Docs/SP-240991.zip).

The conclusions related to the AIML\_CN WID are in [TR 23.700-84](https://www.3gpp.org/ftp/Specs/archive/23_series/23.700-84/23700-84-100.zip), section 8.

This document is meant to be an initial list of the clauses that will be impacted by the CRs that are needed to implement the objectives of the AIML\_CN WID.

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| --- | --- | --- | --- | --- |
| **Topic** | **Specification** | **Impacted Clause** | **Reason for Change** | **Interested Companies** |
| **KI#1: Enhancements to LCS to support Direct AI/ML based Positioning** |
| **High Level feature**  | 23.273 | New clause 5.X | The AI based positioning is a new feature for LMF, introduce the AI based positioning and how to use it.  | vivo, ETRI, OPPO， Qualcomm, DCM, MediaTek, Samsung, InterDigital, Nokia |
| **LMF supports AI positioning** | 23.273 | 4.3.8, 4.3.12, 5.1 | Proposes to enhance the NF profile of the LMF by adding its AI/ML-based positioning capability. | ZTE, vivo, ETRI, OPPO, Qualcomm, MediaTek, InterDitgital |
| **MTLF supports model training for AI/ML positioning** | 23.288 | 5.2, 6.2A, 7.1, 7.5, 7.6 | MTLF should supports AI/ML based positioning model training and model provisioning for LMF to retrieve ML model.  | vivo, ETRI, OPPO, Qualcomm, MediaTek, Samsung, InterDigital, Lenovo, Nokia |
| **LMF retrieves ML models** | 23.273 | New clause 6.X | Introduce how LMF retrieve ML Model to perform inference and determine location.  | vivo, ETRI, Qualcomm, DCM, MediaTek, Samsung, InterDigital, Lenovo, Nokia |
| **Data collection from LMF** | 23.273 | New clause 6.X | Introduce how MTLF/LMF collect data for Model training.  | vivo, OPPO, Qualcomm, MediaTek, Samsung, InterDigital, Lenovo |
| **Performance monitoring** | 23.273 | New clause 6.X | Clarify that performance monitoring is aligned with R18. | vivo, Qualcomm, MediaTek, Samsung, InterDigital, Lenovo, Nokia |
| **LS on Data collection to RAN** |  |  |  | Nokia |
| **LS on model training via OAM to SA5** |  |  |  | Nokia |
| **Extend model retrieval service with LMF as consumer** | 23.501 |  |  | Nokia |
| **KI#2: 5GC Support for Vertical Federated Learning** |
| **High level feature for VFL** | 23.288 | New clause 5.X | High level introduces the VFL.  | vivo, ETRI, OPPO, KDDI, LGE, Samsung, ICS, InterDigital, Lenovo, Nokia |
| **NWDAF supports VFL** | 23.288 | 5.2, new clause 6.2X | Proposes to enhance the NF profile of the NWDAF by adding its VFL capability.  | vivo, ETRI, OPPO, KDDI, LGE, Samsung, ICS, InterDigital, Lenovo, Nokia |
| **AF supports VFL** | 23.502 | 4.15, 5.2.7.2, 5.2.6.x | Introduce that NEF may help AF to register its VFL capability.  | vivo, ETRI, OPPO, KDDI, LGE, DCM, Samsung new NEF service is also needed to support VFL, Futurewei, ICS, InterDigital, Lenovo, Nokia |
|  |  |  |  |  |
| **Sample and/or feature alignment (NWDAF as Server)** | 23.288 | new clause 6.2X | Introduce the procedure of how to perform sample **and/or feature** alignment when the NWDAF is VFL Server.  | vivo, ETRI, OPPO, KDDI, LGE,Tencent, Samsung, Futurewei, ICS, InterDigital, Lenovo, Nokia |
| **Sample and/or feature alignment (AF as Server)** | 23.288 | new clause 6.2X | Introduce the procedure of how to perform sample **and/or feature** alignment when the AF is VFL Server. | vivo, ETRI, OPPO, KDDI, LGE,Tencent, Samsung, Futurewei, ICS, InterDigital, Lenovo, Nokia |
| **VFL training (NWDAF as Server)** | 23.288 | new clause 6.2X | Introduce the procedure of how to perform VFL training when the NWDAF is VFL Server. | vivo, ETRI, OPPO, KDDI, LGE,Tencent, Samsung, ICS, InterDigital, Lenovo, Nokia |
| **VFL training (AF as Server)** | 23.288 | new clause 6.2X | Introduce the procedure of how to perform VFL training when the AF is VFL Server. | vivo, ETRI, OPPO, KDDI, LGE,Tencent, Samsung, ICS, InterDigital, Lenovo, Nokia |
| **VFL Inference (NWDAF as Server)** | 23.288 | new clause 6.2X | Introduce the procedure of how to perform VFL inference when the NWDAF is VFL Server. | vivo, ETRI, OPPO, KDDI, LGE,Tencent, Samsung, Lenovo, Nokia |
| **VFL Inference (AF as Server)** | 23.288 | new clause 6.2X | Introduce the procedure of how to perform VFL inference when the AF is VFL Server. | vivo, ETRI, OPPO, KDDI, LGE,Tencent, Samsung, Lenovo, Nokia |
| **Performance monitoring** | 23.288 | new clause 6.2X | Clarify that performance monitoring is aligned with R18. | vivo, ETRI |
| **Enhancements to NWDAF services to support VFL** | 23.288 | 7.5, 7.10, other clauses are FFS.  | Enhancements to NWDAF services to support VFL, e.g. model provisioning, model training and inference.  | Samsung |
| **NF profile of NWDAF and NEF and these high-level functionalities** | 23.501 | 6.2.5.0, 6.2.6.2, 6.2.18, 6.3.13, 6.3.25 |  | KDDI, ICS, Nokia |
| **Changing FL terminology to HFL** | 23.288 | 5.2, 5.3 … | To avoid ambiguities between VFL and HFL | Nokia |
| **Definitions** | 23.288 | 3.1 |  | Nokia |
| **NRF extensions for VFL** | 23.502 |  |  | Nokia |
| **KI#3: NWDAF-assisted policy control and QoS enhancement** |
| **NWDAF provides assistance info analytics** | 23.288 | New clause 6.X | Enhancement or new analytics for NWDAF to provide assistance information to assist Policy control and QoS enhancement.  | ETRI, OPPO, Qualcomm, DCM, Samsung, InterDigital, Lenovo, Nokia |
| **Analytics Exposure** | 23.288 | 6.1.3 | Modify Contents of Analytics Exposure | ETRI, Qualcomm |
| **Performance monitoring** | 23.288 | 6.2D.2, 6.2D.3 | Add descriptions on accuracy monitoring for QoS policy assistance information analytics | ETRI, Qualcomm, Samsung, InterDigital |
| **NWDAF service enhancements** | 23.288 | 7.2.2, 7.3.2 | Modify NWDAF service operations to support QoS policy assistance information analytics | ETRI, Qualcomm, Samsung, InterDigital |
| **NF profile for NWDAF capability** | 23.501 | 6.2.6.2 | Introduce the new capability for NWDAF to provide QoS policy assistance information | ETRI, Qualcomm, Samsung, InterDigital |
| **NRF service enhancements** | 23.502 | 5.2.7.2.2, 5.2.7.3.2 | Modify NRF service operations to support QoS policy assistance information | ETRI, Qualcomm |
| **New feature introduction**  | 23.503 | 6.1.1.3, other clauses are FFS | Introduce the new feature information. | Qualcomm, Samsung |
| **Enhancements to analytics ID(s) to support policy control and QoS**  | 23.288 | 6.6.3, 6.9.2, 6.9.3, | Enhancements to existing analytics ID(s) to assist PCF with policy and QoS, i.e. QoS sustainability, Network Performance analytics.  | Samsung, InterDigital, Nokia |
| **Support QoS flow analytics** | 23.288 | New clause 6.X or existing clauses  | Introduce QoS flow level analytics to support PCF on QoS determination and modification.  | Samsung |
| **KI#4: NWDAF-assisted Network Abnormal Behaviour Mitigation and Prevention** |
| **New analytics ID to support Signalling storm Mitigation and Prevention** | 23.288 | New clause 6.X | New analytics ID to support Signalling storm Mitigation and Prevention | SK Telecom, vivo, ETRI, OPPO, DCM, China Telecom, Samsung, InterDigital, Lenovo, Nokia |
| **New feature introduction** | 23.501 |  | Introduce the new feature information.  | vivo, OPPO,Tencent, China Telecom, Samsung |
| **New NF Service Discovery** | 23.502 | 5.2.7 | Introduce the influence of the new Service.  | vivo, China Telecom |
| Extending Abnormal behaviour related network data analytics for signalling storm caused by massive UE signalling | 23.288 | 6.7.5 | Extending Abnormal behaviour related network data analytics for signalling storm caused by massive UE signalling | Nokia |
| example mitigation actions for signalling storm caused by NF signalling | 23.502 | 4.17.9 | Add SCP based mitigation actions | Nokia |