3GPP WG-SA2 Meeting #154 S2-220XXXX

Toulouse, France, November 14 – 18, 2022 (revisio n(*revision of* *S2-2208649r04*)

**Source: China Mobile, vivo**

**Title: New WID on Enablers for Network Automation for 5G - phase 3**

**Document for: Approval**

**Agenda Item: 10.3**

3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>   
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

**Title:** Enablers for Network Automation for 5G – phase 3

**Acronym:** eNA\_Ph3

**Unique identifier:** TBD

**Potential target Release:** Rel-18

# 1 Impacts

{For Normative work, identify the anticipated impacts. For a Study, identify the scope of the study}

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes |  |  |  | X |  |
| No |  | X | X |  |  |
| Don’t know | X |  |  |  | X |

# 2 Classification of the Work Item and linked work items

## 2.1 Primary classification

### This work item is a …

|  |  |
| --- | --- |
| X | Feature |
|  | Building Block |
|  | *Work Task* |
|  | Study Item |

## 2.2 Parent Work Item

For a brand-new topic, use “N/A” in the table below. Otherwise indicate the parent Work Item.

|  |  |  |  |
| --- | --- | --- | --- |
| Parent Work / Study Items | | | |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| FS\_eNA\_Ph3 | SA2 | 940073 | Study on Enablers for Network Automation for 5G - phase 3 |

### 2.3 Other related Work Items and dependencies

|  |  |  |
| --- | --- | --- |
| Other related Work Items (if any) | | |
| Unique ID | Title | Nature of relationship |
| 840022 | Study on Enablers for Network Automation for 5G - phase 2 | Antecedent study item (TR 23.700-91) |
| 900031 | Enablers for Network Automation for 5G - phase 2 | Antecedent Work item (TS 23.288) |
| 760047 | Study of enablers for Network Automation for 5G | Antecedent study item (TR 23.791) |
| 830047 | Enablers for Network Automation for 5G | Antecedent Work item (TS 23.288) |
| 830034 | Study on UPF enhancement for control and SBA | Related to how UPF report data to NWDAF |
| 940071 | Study on 5G System Support for AI/ML-based Services | Related to how NWDAF analytics data exposed to AF or UE |
| 940058 | Study on Enhancement to the 5GC LoCation Services-Phase 3 | Related to how NWDAF generates and provides analytics with location information from LCS system as input data |

# 3 Justification

In Rel-15, Rel-16, and also Rel-17 the framework and solutions of eNA had been investigated for supporting network automation leveraging 5GC information exposure and network data analytics. The study in Rel-18 have further discussion on architecture enhancement, new cases and Rel-17 leftover.

The intent of this work item in Rel-18 is to complete the normative work based on the conclusions of the study in Rel-18 on further architecture enhancement, new cases and even Rel-17 leftover.

# 4 Objective

This work item aims at further enhancements for NWDAF, based on what has been specified in the previous releases to allow 5GS to support network automation. This work item focuses on architecture enhancement, new scenarios and the necessary inputs and outputs to the NWDAF based on the conclusions of the study in Rel-18, as described in clause 8 of TR 23.700-81, which leads to the normative work focusing on 11 key aspects as follows:

* Improve correctness of NWDAF analytics
* NWDAF-assisted application detection
* Data and analytics exchange in roaming case
* Enhancements on Data collection and Storage
* Enhancements on trained ML Model sharing
* NWDAF-assisted URSP
* Enhancements on QoS Sustainability analytics
* Supporting Federated Learning in 5GC
* Enhancement of NWDAF with finer granularity of location information
* Interactions with MDAS/MDAF
* UPF data report to NWDAF to support UPF data report for analytics as specified in R16/R17 and additional UPF data identified in R18

# 5 Expected Output and Time scale

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| New specifications {One line per specification. Create/delete lines as needed} | | | | | |
| Type | TS/TR number | Title | For info  at TSG# | For approval at TSG# | Rapporteur |
|  |  |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} | | | |
| TS/TR No. | Description of change | Target completion plenary# | Remarks |
| 23.501 | Architectural and Conceptual enhancements to support the stated objectives | TSG#99  (March 2023) | impacts tbc according to conclusions |
| 23.502 | Procedural enhancements to support the stated objectives | TSG#99  (March 2023) | impacts tbc according to conclusions |
| 23.503 | Policy enhancements to support the stated objectives | TSG#99  (March 2023) | impacts tbc according to conclusions |
| 23.288 | Architecture enhancements and use cases for 5G System (5GS) to support network data analytics services | TSG#99  (March 2023) | impacts tbc according to conclusions |

# 6 Work item Rapporteur(s)

Aihua Li, China Mobile, [liaihua@chinamobile.com](mailto:liaihua@chinamobile.com), Primary Rapporteur

Xiaobo Wu, vivo, xiaobo.wu@vivo.com, Secondary Rapporteur

# 7 Work item leadership

SA2

# 8 Aspects that involve other WGs

Coordination with SA3 and SA5 is expected during the work.

# 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| China Mobile |
| vivo |
| China Telecom |
| Huawei |
| China Unicom |
| China Southern Power Grid Co., Ltd |
| AT&T? |
| CATT |
| KDDI? |
| CAICT |
| NEC? |
| Alibaba |
| Lenovo |
| ZTE |
| Intel? |
| Deutsche Telekom |
| Convida Wireless? |
| Orange? |
| NTT DoCoMo |
| ETRI? |
| Tencent |
| Spreadtrum Communications |
| Academy of Broadcasting Science |
| Charter Communications? |
| Oracle? |
| Spirent? |
| Sandvine? |
| Rakuten Mobile? |
| Ericsson |
| Nokia? |
| Nokia Shanghai Bell? |
| Samsung? |
| OPPO |
| Verizon UK Ltd. ? |
| Vodafone? |
| Inspur |
| DISH Network? |
| AsiaInfo |
| Microsoft? |
| MATRIXX Software |
| Futurewei |
| Qualcomm Incorporated |