**Post SA2#148E e-meeting Email Discussion**

**Source: China Mobile, vivo**

**Title: Email discussion on Rel-18 FS\_eNA\_Ph3**

# 1. Work Tasks for Rel-18 FS\_eNA\_Ph3

## 1.1 Importance of Work Tasks

### 1.1.1 Work Tasks Description

The “ Study on Enablers for Network Automation for 5G - phase 3” (FS\_eNA\_Ph3) was approved at SA2#148E e-meeting in S2-2109361, which contains the following Work Tasks and TU estimation.

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| **Work Task ID** | **Work Task Description** | **RAN Dependency**  **(Yes/No/Maybe)** | **TU Estimate**  **(14 + 9 )** | **Inter Work Tasks Dependency** |
| WT#1.1 | whether and how new types of output need to be provided by NWDAF and how would those outputs be defined | NO | 0.5+0.5 | WT#1.1 is self-contained |
| WT#1.2 | Study possible mechanisms for improved correctness of NWDAF analytics | NO | 0.5+0.5 | WT#1.2 is self-contained |
| WT#2.1 | Whether and how NWDAF can assist application detection | NO | 1+0.5 | WT#2.1 is self-contained |
| WT#2.2 | Whether and how to support data and analytics exchange in roaming case (including network sharing) | NO | 1+0.5 | WT#2.2 is self-contained |
| WT#3.1 | data collection and data storage enhancements (including DCCF and ADRF enhancements, e.g., DCCF relocation, ADRF selection, ML model storage) | NO | 0.5+0.5 | WT#3.1 is self-contained |
| WT#3.2 | Whether and how to enhance trained ML Model sharing for different vendors | NO | 1+0.5 | WT#3.2 is self-contained |
| WT#3.3 | UPF data report to NWDAF to support UPF data report for analytics as specified in R16/R17 and additional UPF data identified in R18 | NO | 0.5+0.5 | WT#3.3 is self-contained, but may coordinate with SID FS\_UPCAS |
| WT#3.4 | Study whether and how interactions between NWDAF can leverage MDAS/MDAF functionality for data collection and analytics | NO | 1+0.5 | WT#3.4 is self-contained |
| WT#3.5 | Enhancements related to analytics subscription transfer between NWDAFs (i.e. when analytics are for a group of UEs) | NO | 0.5+0.5 | WT#3.5 is self-contained |
| WT#3.6 | Impact of non-typical situations (e.g. un-scheduled events, disaster) on data collection and analytics | NO | 0.5+0.5 | WT#3.6 is self-contained |
| WT#3.7 | NWDAF-assisted URSP | NO | 1+0.5 | WT#3.7 is self-contained |
| WT#3.8 | enhancements on QoS Sustainability analytics | NO | 1+0.5 | WT#3.8 is self-contained except that “Investigate QoS prediction in Multi-MNO/Cross-border environments” is related with WT#2.2. |
| WT#4.1 | Study whether and how to enhance architecture to support federated learning in the 5GC | NO | 2+1 | WT#4.1 is self-contained |
| WT#4.2 | NWDAF enhancements considering the finer granularity of location information than TA and cell level | NO | 0. 5+0.5 | WT#4.2 is self-contained |
| WT#4.3 | NWDAF enhancements considering inputs from SCP | NO | 0.5+0.5 | WT#4.3 is self-contained |
| WT#4.4 | Study whether and how UE consume data analytics from NWDAF | NO | 1+0.5 | WT#4.4 is self-contained |
| WT#4.5 | Study whether and how to enhance architecture to support online learning in the 5GC | NO | 1+0.5 | WT#4.5 is self-contained |

### 1.1.2 Companies View for the Work Tasks

**Question 1: Whether or not WT#X is essential to be included in Rel-18 FS\_eNA\_Ph3 SID?**

**Please indicate the reason why you think the corresponding WT is not essential in case that Company View is marked as “NO”.**

#### 1.1.2.1 WT#1.1 whether and how new types of output need to be provided by NWDAF and how would those outputs be defined

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| Company Name | Company View  (Yes/No) | Notes  (View on importance of the particular Work Task and whether this task is required to be included in Rel-18. Provide the rationale and justification for the proposal e.g. deployment scenarios, design choices, etc.) |
| Nokia | No | NWDAF was designed to support other entities with statistics and predictions to enable network automation. We do not think NWDAF should be able to provide other types of output (e.g. recommendations) as this would require NWDAF to understand the internal logic of 5GC NFs. Additionally, the work task is too open and cannot be studied within just 0,5 TU. |
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#### 1.1.2.2 WT#1.2 Study possible mechanisms for improved correctness of NWDAF analytics

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| Company Name | Company View  (Yes/No) | Notes  (View on importance of the particular Work Task and whether this task is required to be included in Rel-18. Provide the rationale and justification for the proposal e.g. deployment scenarios, design choices, etc.) |
| Nokia | Yes |  |
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#### 1.1.2.3 WT#2.1 Whether and how NWDAF can assist application detection

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| Company Name | Company View  (Yes/No) | Notes  (View on importance of the particular Work Task and whether this task is required to be included in Rel-18. Provide the rationale and justification for the proposal e.g. deployment scenarios, design choices, etc.) |
| Nokia | No | This was not concluded in R17 and we do not see what should be studied again.  We believe DPI has its own logic which is internal, and we do not see how NWDAF can help here. DPI can do detection, no need to use a prediction from NWDAF. Why would we move application detection to NWDAF while DPI already does some analysis? |
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#### 1.1.2.4 WT#2.2 Whether and how to support data and analytics exchange in roaming case (including network sharing)

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| Company Name | Company View  (Yes/No) | Notes  (View on importance of the particular Work Task and whether this task is required to be included in Rel-18. Provide the rationale and justification for the proposal e.g. deployment scenarios, design choices, etc.) |
| Nokia | Yes | This should be moved to Objective #1, as this task had been deprioritized from R17 (🡪 objective #1). |
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#### 1.1.2.5 WT#3.1 data collection and data storage enhancements (including DCCF and ADRF enhancements, e.g., DCCF relocation, ADRF selection, ML model storage)

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| Company Name | Company View  (Yes/No) | Notes  (View on importance of the particular Work Task and whether this task is required to be included in Rel-18. Provide the rationale and justification for the proposal e.g. deployment scenarios, design choices, etc.) |
| Nokia | Yes | During the work on Rel-17 on enhanced procedures for data collection, SA2 identified areas which need further work, e.g.:  - ADRF selection principles, e.g., how to discover ADRF when there are multiple ADRFs in a network,  - Storing in ADRF other types of information in ADRF than just analytics or data for analytics,  - Inter DCCF coordination with possible DCCF relocation upon UE mobility. |
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#### 1.1.2.6 WT#3.2 Whether and how to enhance trained ML Model sharing for different vendors

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| Company Name | Company View  (Yes/No) | Notes  (View on importance of the particular Work Task and whether this task is required to be included in Rel-18. Provide the rationale and justification for the proposal e.g. deployment scenarios, design choices, etc.) |
| Nokia | No | This has dependency with SA5 and we propose to first let SA5 progress on this.  Going beyond what was achieved in Rel-17 for trained ML Model sharing would require much more significant effort than just a 1 TU work task and could require a SID on its own. |
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#### 1.1.2.7 WT#3.3 UPF data report to NWDAF to support UPF data report for analytics as specified in R16/R17 and additional UPF data identified in R18

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| Company Name | Company View  (Yes/No) | Notes  (View on importance of the particular Work Task and whether this task is required to be included in Rel-18. Provide the rationale and justification for the proposal e.g. deployment scenarios, design choices, etc.) |
| Nokia | No | This is dependent on UPEAS study. SA2 cannot progress this work task until UPEAS study has concluded, so study part shall be removed.  Once UPEAS has concluded, SA2 could define the eNA related aspects of UPF exposure for UPF data that is specified up to Rel-17, but this would require effort only during normative phase. |
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#### 1.1.2.8 WT#3.4 Study whether and how interactions between NWDAF can leverage MDAS/MDAF functionality for data collection and analytics

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| Company Name | Company View  (Yes/No) | Notes  (View on importance of the particular Work Task and whether this task is required to be included in Rel-18. Provide the rationale and justification for the proposal e.g. deployment scenarios, design choices, etc.) |
| Nokia | Yes |  |
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#### 1.1.2.9 WT#3.5 Enhancements related to analytics subscription transfer between NWDAFs (i.e. when analytics are for a group of UEs)

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| Company Name | Company View  (Yes/No) | Notes  (View on importance of the particular Work Task and whether this task is required to be included in Rel-18. Provide the rationale and justification for the proposal e.g. deployment scenarios, design choices, etc.) |
| Nokia | Yes | Rel-17 specification does not specify NWDAF behaviour for transfer of analytics context and analytics subscription for the cases where analytics are for a group/list of UEs or "any UE".  This gap should be studied in Rel-18. |
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#### 1.1.2.10 WT#3.6 Impact of non-typical situations (e.g. un-scheduled events, disaster) on data collection and analytics

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| Company Name | Company View  (Yes/No) | Notes  (View on importance of the particular Work Task and whether this task is required to be included in Rel-18. Provide the rationale and justification for the proposal e.g. deployment scenarios, design choices, etc.) |
| Nokia | Yes |  |
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#### 1.1.2.11 WT#3.7 NWDAF-assisted URSP

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| Company Name | Company View  (Yes/No) | Notes  (View on importance of the particular Work Task and whether this task is required to be included in Rel-18. Provide the rationale and justification for the proposal e.g. deployment scenarios, design choices, etc.) |
| Nokia | No | The scope of this WT seems to be quite broad, and it is not clear what is covered by it. |
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#### 1.1.2.12 WT#3.8 enhancements on QoS Sustainability analytics

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| Company Name | Company View  (Yes/No) | Notes  (View on importance of the particular Work Task and whether this task is required to be included in Rel-18. Provide the rationale and justification for the proposal e.g. deployment scenarios, design choices, etc.) |
| Nokia | Yes |  |
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#### 1.1.2.13 WT#4.1 Study whether and how to enhance architecture to support federated learning in the 5GC

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| Company Name | Company View  (Yes/No) | Notes  (View on importance of the particular Work Task and whether this task is required to be included in Rel-18. Provide the rationale and justification for the proposal e.g. deployment scenarios, design choices, etc.) |
| Nokia | No | Unclear if federated learning is really needed in the 5GC.  We also see a dependency with SA5. Proposal to first let SA5 investigate this topic. |
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#### 1.1.2.14 WT#4.2 NWDAF enhancements considering the finer granularity of location information than TA and cell level

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| Company Name | Company View  (Yes/No) | Notes  (View on importance of the particular Work Task and whether this task is required to be included in Rel-18. Provide the rationale and justification for the proposal e.g. deployment scenarios, design choices, etc.) |
| Nokia | Yes | eLCS phase 2 study should progress first. |
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#### 1.1.2.15 WT#4.3 NWDAF enhancements considering inputs from SCP

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| Company Name | Company View  (Yes/No) | Notes  (View on importance of the particular Work Task and whether this task is required to be included in Rel-18. Provide the rationale and justification for the proposal e.g. deployment scenarios, design choices, etc.) |
| Nokia | Yes |  |
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#### 1.1.2.16 WT#4.4 Study whether and how UE consume data analytics from NWDAF

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| Company Name | Company View  (Yes/No) | Notes  (View on importance of the particular Work Task and whether this task is required to be included in Rel-18. Provide the rationale and justification for the proposal e.g. deployment scenarios, design choices, etc.) |
| Nokia | No | We don't think UE should be able to directly consume network data analytics from NWDAF.  eNA is a study to investigate "enablers for network automation" and we do not see how exposing data analytics to the UE is going to enable/support network automation.  1 TU for this work task seems over optimistic. |
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#### 1.1.2.17 WT#4.5 Study whether and how to enhance architecture to support online learning in the 5GC

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| Company Name | Company View  (Yes/No) | Notes  (View on importance of the particular Work Task and whether this task is required to be included in Rel-18. Provide the rationale and justification for the proposal e.g. deployment scenarios, design choices, etc.) |
| Nokia | No | NWDAF containing MTLF, already in Rel-17, can get training data from ADRF, so we believe online learning using that data is already supported and we do not see what is missing that would need to be studied. |
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### 1.x.3 Summary

Editor’s Note: This clause should contain the brief summary of companies view e.g. n# of companies prefer to go with option A vs. m# of companies prefer to go with option B.

### 1.x.4 Proposed Way Forward

Editor’s Note: This clause should contain propose a way forward. For e.g. Given that majority of companies prefer to go with option A, it is proposed that Option A is agreed as way forward.