**3GPP TSG-SA5 Meeting #141-e *S5-221422rev1***

e-meeting, 17 -26 January 2022 (revision of xx-yyxxxx)

**Source: Nokia, Nokia Shanghai Bell**

**Title: New SID on further Enhancements of Management of Trace/MDT**

**Document for: Approval**

**Agenda Item: 6.2**

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: Study on further Enhancements of Management of Trace/MDT

Acronym: FS\_e5GMDT\_Ph2

Unique identifier: TBD

{A number to be provided by MCC at the plenary}

Potential target Release: Rel-18

# 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes |  |  | X | X |  |
| No |  | 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 …

|  |  |
| --- | --- |
|  | Feature |
|  | Building Block |
|  | Work Task |
| X | 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.

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| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
|  | N/A |  |  |

### 2.3 Other related Work Items and dependencies

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| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| TBD | Further enhancement of data collection for SON (Self-Organising Networks)/MDT (Minimization of Drive Tests) in NR and EN-DC (RP-213553) | This work item specifies the data collection enhancements in RAN |
| 801000 | Study on RAN-centric Data Collection and Utilization for LTE and NR | Preceding Study Item in RAN |
| 870025 | Management of MDT enhancement in 5G | Preceding Work Item (e\_5GMDT) |
| 880076 | Study on enhancement for data collection for NR and ENDC | Preceding study Item in RAN on functional framework for RAN intelligence |
| TBD | Artificial Intelligence (AI)/Machine Learning (ML) for NG-RAN | Normative works of TR 37.817 “Study on enhancement for Data Collection for NR and EN-DC” |

# 3 Justification

MDT Trace Session management for 5GC and NG-RAN has been added to the relevant specifications in Release 16. Enhancements have been specified in Release 17. RAN3 and RAN2 plan to work on further enhancements of data collection for MDT in Release 18 (RP-213553 covering RAN3 & RAN2). A corresponding work is needed for management system. It is obvious, that work for management system can only be done, when first agreements are made by RAN WGs.

Trace Management has been originally introduced in the framework of Integration Reference Point (IRP). With the introduction of SBMA in Release 15, the model driven approach came into focus and the dedicated operations got less and less. In the context of IRP, the element manager was aware of the changes in the network even during handovers where network elements change their assignment. This may be different in case of SBMA e.g. what happens with the TraceJob MOI during or after a handover for signalling based activation. For the network it's specified that MDT configuration shall be passed during handover. Another open issue is, how to stop the Trace session after receipt of a trace session deactivation message.

Furthermore, PerfMetricJob has been introduced in Release 16. This IOC has been evolved along the SBMA principles e.g. reporting of performance measurements. There are similarities which might be useful for improvement of TraceJob. One example to consider is to align the reporting control.

RAN3 has studied in Release 17 SI on enhancement for data collection for NR and ENDC solutions for location of training and inference models for the use cases network energy saving, load balancing and mobility optimization. One identified option is to host AI/ML Model Training in OAM [TR 37.817]. Besides, possible input and output parameters of the AI functions has been documented. In the Release 18 WI [RP-213602] this work will continue with the normative phase. This SI shall study if enhancements for management of MDT are necessary to support the identified input and output parameters which could include predictions.

Data collection is also considered in MADCOL Rel-17 WI. While MADCOL targets to specify an approach to collect data in a simplified way and to cover both TraceJob and PerfMetricJob, this SI focuses on the enhancements or improvement of TraceJob.

# 4 Objective

The objectives of this study item include:

* Study the alignment of TraceJob and PerfMetricJob e.g. regarding reporting control
* Study further changes for Trace/MDT necessary due to SBMA framework (e.g. how to handle TraceJob in NRM in case of handover for signalling based activation, meaning of name containment for TraceJob)
* Study on clean-up of existing specifications related to Trace/MDT
* Study on management of data collection enhancement of logged and immediate MDT specified by RAN2 and RAN3
* Study on management of MDT enhancements for NPN and RACH enhancements specified by RAN2 and RAN3.
* Study on MR-DC related MDT configuration and reporting specified by RAN2 and RAN3
* Study on enhancement of reporting and internode communication specified in RAN2 and RAN3, e.g. RLF and accessibility measurements, Successful Handover reporting
* Study on MDT enhancements for the management system to support input and output parameters of AI/ML functions specified by RAN3 e.g. resource status prediction or energy efficiency prediction.
* Derive recommendations for a normative work item.

# 5 Expected Output and Time scale

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| **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** |
| Internal TR | 28.XXX | Study on further enhancements of Management of Trace/MDT | TSG#97 | TSG#98 | Allwang Christiane, Nokia, christiane.allwang@noka.com  |

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# 6 Work item Rapporteur(s)

Allwang, Christiane, Nokia, christiane.allwang@nokia.com

# 7 Work item leadership

SA5

# 8 Aspects that involve other WGs

None identified yet.

# 9 Supporting Individual Members

{At least 4 supporting Individual Members are needed. There is an expectation that these companies will provide resources to progress the work. Note that having 4 supporting companies is a necessary but not sufficient condition: the usual TSG approval process by consensus is needed for the WID approval}

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| Supporting IM name |
| Nokia |
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