**3GPP TSG-SA5 Meeting #162 *S5-254044***

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**Source: Huawei**

**Title: Pseudo-CR on TR 28.886 Enhance the mobility performance analysis use case**

**Document for: Approval**

**Agenda item: 6.20.6**

**Spec: 3GPP TR 28.866**

**Version: 0.0.0**

**Work Item: FS\_eMDAS\_Ph4**

**Comments**

The new SID SP-250497 [1] on study on MDA was approved at the SA #108 meeting. The objectives including:

**WT-3** Investigate new and enhanced analytics related capabilities

**WT-3.1** Study possible new MDAS capabilities to provide analytics on the status/performance/usage of the managed network and to recommend optimization or repair actions.

Regarding the mobility performance analysis use case defined in TS 28.104 [2], in clause 7.2.5.1.3, REQ-MRO\_MDA-01 states “MDA capability for mobility performance issue analysis shall include providing the mobility performance in NSA and SA deployment architectures.”. However, the corresponding solution of NSA related mobility performance analysis is missing. In clasue 7.2.5.1.3, REQ-MRO\_MDA-02 states “MDA capability for mobility performance issue analysis shall include providing the mobility issue analysis including too-early handovers, too-late handovers and ping-pong handovers.”, however, the correscponding solutions are missing.

According to TS 37.340 [3], in clasue 10.18, PSCell addition/change in SN mobility scenarios are defined in cluding PSCell change failure such as too late/too early PSCell change, PSCell change to wrong PSCell and Conditional PSCell addition or change failure such as too Late CPC Execution, too Early CPC/CPA Execution and CPC/CPA Execution to wrong PSCell. Therefore, the mobility performance anlaysis should be enhanced with these mobility issue.

This contribution proposes to enhance the use case of mobility performance anlaysis with adding the corresponding requirements to support mobility performance analysis in NSA deployment scenarios.

**Proposed Changes**

\* \* \* First Change \* \* \* \*

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

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[x] 3GPP TS 28.104: " Management Data Analytics (MDA)".

\* \* \* Next Change \* \* \* \*

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

CPA Conditional PSCell Addition

CPC Conditional PSCell Change

\* \* \* Next Change \* \* \* \*

# X Use cases

## X.Y Investigate new and enhanced analytics related capabilities

### X.Y.Z Use case Z: Enhance the Mobility performance analysis use case

#### X.Y.Z.1 Description

This use case is to enhance the existing MDA capability for mobility performance analysis. The enhancements to the existing mobility performance analysis are targeted towards to solve the mobility problems in NSA deployment architecture and to recommend optimization or repair actions.

The existing use case for mobility performance analysis is described in TS 28.104 [2]. This analysis output includes information such as mobility issue root cause, mobility issue location. The descriptions and requirements in the existing use cases also mention performance analysis under NSA deployment scenarios. However, the current solution does not provide additional information (e.g. mobility issue type such as NSA mobility issue and SA mobility issue, or the root cause of NSA mobility issue, or the recommended actions) which may enable the consumer to anticipate the impacts to the network more effectively.

The mobility performance related problems in NSA deployment scenarios may result from too-early/too-late PSCell change or too-early/too-late conditional PSCell addition or change due to inappropriate handover parameters. MDAS can be used to analyse network performance during handover period in different mobility scenarios. MDAS producer may also be capable to provide the recommendations of optimal handover parameters to MDAS consumer.

Correspondingly, the root cause of mobility issue in NSA deployment scenarios may be of interest to the consumer and can be provided in the analytics report. The root cause can be high interference in both uplink and downlink, wireless resource issues (such as high utilization of uplink and downlink PRBs), transport layer reasons (including insufficient transport resources leading to SN addition failure, such as S1 interface transport, X2 interface transport), and UE capability issues.

#### X.Y.Z.2 Potential requirements

**REQ-MRO\_MDA-x1**: MDA capability for mobility performance issue analysis should provide the NSA mobility issue including too-early PSCell change, too-late PSCell change, too Late CPC Execution and too Early CPC/CPA Execution.

**REQ-MRO\_MDA-x2**: MDA capability for mobility performance issue analysis should include providing recommended actions to solve the mobility performance issue.

#### X.Y.Z.3 Potential solutions

TBD

#### X.Y.Z.4 Evaluation of solutions

TBD

\* \* \* End of Changes \* \* \* \*