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Technical Specification

**3rd Generation Partnership Project;
Technical Specification Group Radio Access Network;
Universal Terrestrial Radio Access (UTRA) and
Evolved Universal Terrestrial Radio Access (E-UTRA);
Radio measurement collection for
Minimization of Drive Tests (MDT); Overall description;
Stage 2
(Release 10)**

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Foreword

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Introduction

Using drive tests for network optimization purposes is costly and causes also additional CO_2 emissions, so it is desirable to develop automated solutions, including involving UEs in the field, in 3GPP to reduce the operator costs for network deployment and operation. The studies done as part of the study item phase have shown that it is beneficial to collect UE measurements to enable a more efficient network optimisation and it is feasible to use control plane solutions to acquire the information from devices. This information, together with information available in the radio access network can be used for Coverage Optimization purposes.

1   Scope

The present document provides an overview and overall description of the minimization of drive tests functionality.

The document describes functions and procedures to support autonomous collection of UE measurements using Control Plane architecture for both UTRAN and E-UTRAN. Details of the signalling procedures for single-RAT operation are specified in the appropriate radio interface protocol specification.

NOTE: The focus in on conventional macro cellular network deployments. It is presently not envisioned that H(e)NB deployments and MBMS will be supported by the MDT functionality.

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".

[2]   3GPP TS 25.133: "Requirements for support of radio resource management (FDD)"

[3]   3GPP TS 36.133: "Requirements for support of radio resource management (FDD)"

[4]   3GPP TS 25.331: "Radio Resource Control (RRC); Protocol specification"

[5]   3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification".

[6]   3GPP TS 32.422: "Subscriber and equipment trace; Trace control and configuration management"

3   Definitions, symbols and abbreviations

3.1   Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [1] apply.

Immediate MDT: MDT functionality involving measurement performance by UE in CONNECTED state and reporting of the measurements to eNB/RNC available at the time of reporting condition.

Logged MDT: MDT functionality involving measurement performance by UE in IDLE mode, CELL_PCH and URA_PCH states (when UE is in UTRA) at points in time when configured conditions are satisfied, its storage in measurement log for reporting to eNB/RNC at a later point in time.

MDT measurements: Measurements determined for MDT.

MDT PLMN: A PLMN that is the RPLMN for the UE at the point of receiving MDT measurement configuration.

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