**3GPP TSG-RAN WG3 Meeting #122 *R3-23xxxx***

**Chicago, USA, 13th – 17th November, 2023**

Agenda Item: 17.3

Source: Huawei, Ericsson, CATT

Title: (TP to 38.300) OAM Requirements for UE Location Verification

Document for: Others

# 1. Introduction

In discussion paper [1], it has proposed that ephemeris information of the satellites as well as the association between the satellite and TRP should be configured to LMF via OAM. In this contribution, we capture the relevant updates in stage 2 TS 38.300 also linked to TS 38.305 [2].

# 2. TP to 38.300

/\*\*\*\*\* Begin of Change\*\*/

3.1 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1], in TS 36.300 [2] 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] and TS 36.300 [2].

5GC 5G Core Network

5GS 5G System

5QI 5G QoS Identifier

A-CSI Aperiodic CSI

AGC Automatic Gain Control

AKA Authentication and Key Agreement

AMBR Aggregate Maximum Bit Rate

AMC Adaptive Modulation and Coding

AMF Access and Mobility Management Function

ARP Allocation and Retention Priority

BA Bandwidth Adaptation

BCCH Broadcast Control Channel

BCH Broadcast Channel

BFD Beam Failure Detection

BH Backhaul

BL Bandwidth reduced Low complexity

BPSK Binary Phase Shift Keying

C-RNTI Cell RNTI

CAG Closed Access Group

CAPC Channel Access Priority Class

CBRA Contention Based Random Access

CCE Control Channel Element

CD-SSB Cell Defining SSB

CFR Common Frequency Resource

CFRA Contention Free Random Access

CG Configured Grant

CHO Conditional Handover

CIoT Cellular Internet of Things

CLI Cross Link interference

CMAS Commercial Mobile Alert Service

CORESET Control Resource Set

CP Cyclic Prefix

CPA Conditional PSCell Addition

CPC Conditional PSCell Change

DAG Directed Acyclic Graph

DAPS Dual Active Protocol Stack

DFT Discrete Fourier Transform

DCI Downlink Control Information

DCP DCI with CRC scrambled by PS-RNTI

DL-AoD Downlink Angle-of-Departure

DL-SCH Downlink Shared Channel

DL-TDOA Downlink Time Difference Of Arrival

DMRS Demodulation Reference Signal

DRX Discontinuous Reception

E-CID Enhanced Cell-ID (positioning method)

EHC Ethernet Header Compression

ePWS enhancements of Public Warning System

ETWS Earthquake and Tsunami Warning System

FS Feature Set

FSA ID Frequency Selection Area Identity

G-CS-RNTI Group Configured Scheduling RNTI

G-RNTI Group RNTI

GFBR Guaranteed Flow Bit Rate

GIN Group ID for Network selection

GNSS Global Navigation Satellite System

GSO Geosynchronous Orbit

H-SFN Hyper System Frame Number

HAPS High Altitude Platform Station

HRNN Human-Readable Network Name

IAB Integrated Access and Backhaul

IFRI Intra Frequency Reselection Indication

I-RNTI Inactive RNTI

INT-RNTI Interruption RNTI

KPAS Korean Public Alarm System

L2 Layer-2

L3 Layer-3

LDPC Low Density Parity Check

LEO Low Earth Orbit

LMF Location Management Function

MBS Multicast/Broadcast Services

MCE Measurement Collection Entity

MCCH MBS Control Channel

MDBV Maximum Data Burst Volume

MEO Medium Earth Orbit

MIB Master Information Block

/\*\*\*\*\* NEXT Change \*\*/

16.14.7 O&M Requirements

The following NTN related parameters shall be provided by O&M to the gNB providing NTN access:

- Ephemeris information describing the orbital trajectory information or coordinates for the NTN payload. This information is provided on a regular basis or upon demand to the gNB;

- Two different sets of ephemeris format shall be supported:

- Set 1: NTN payload position and velocity state vectors:

- Position;

- Velocity.

- Set 2: At least the following parameters in orbital parameter ephemeris format, as specified in NIMA TR 8350.2 [51]:

- Semi-major axis;

- Eccentricity;

- Argument of periapsis;

- Longitude of ascending node;

- Inclination;

- Mean anomaly at epoch time.

- The explicit epoch time associated to ephemeris data;

- The location of the NTN Gateways;

NOTE 1: The ephemeris of the NTN payloads and the location of the NTN Gateways, are used at least for the Uplink timing and frequency synchronization. It may also be used for the random access and the mobility management purposes.

- Additional information to enable gNB operation for feeder/service link switch overs.

NOTE 2: The NTN related parameters provided by O&M to the gNB may depend on the type of supported service links, i.e., Earth-fixed, quasi-Earth-fixed, or Earth-moving.

NOTE 3: The ephemeris information, as well as the association between the TRP and the satellite are configured by O&M to LMF for the UE location verfication as specified in TS 38.305 [42].

/\*\*\*\*\* End of Change \*\*/

# 4. References

1. R3-237300, Discussion on OAM requirements for UE location verification, CATT, & al.
2. R3-237428, OAM Requirements for UE Location Verification, Ericsson, & All