**3GPP TSG-RAN4 Meeting # 110bis *draft R4-2405993 revised R4-2405320***

**Changsha, China, 15th – 19th April, 2024**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.101-5** | **CR** | **draft-CR** | **rev** | **-** | **Current version:** | **18.5.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network |  |

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|  | | | | | | | | | | |
| ***Title:*** | Draft CR to TS 38.101-5: Chapter 3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Samsung | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_NTN\_enh-Core | | | | |  | ***Date:*** | | | 2024-4-7 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | To amend the defintion of terms Mobile and Fixed VSAT. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | To amend VSAT related terms in 3.1;  To amend VSAT related abbreviations in 3.3. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The terms of mobile and fixed VSAT is not given in spec. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 3.1; 3.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | Depending on discussion in R4-2305315 | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

## **<Start of Change>**

## 3.1 Terms

For the purposes of the present document, the terms given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

**Co-polarized transmission:** when the DUT transmission antenna polarization is aligned with test antenna polarization.

**Cross-polarized transmission:** when the DUT transmission antenna polarization is aligned with the tangent of the test antenna polarization.

**Emissions disables state:** Radio state in which the ESOMP is not emitting (e.g. before system monitoring pass, before the control channel is received, when a failure is detected, when an ESOMP is commanded to disable, and

when the ESOMP is in a location requiring cessation of emissions).

**Enhanced channel raster**: channel raster with a 10 kHz granularity in bands with a 100 kHz channel raster.

Feeder link: A radio link from an earth station at a given location to a space station, or vice versa, conveying information for a space radiocommunication service other than for the fixed-satellite service. The given location may be at a specified fixed point, or at any fixed point within specified areas.

**Fixed Satellite Service**: A radiocommunication service between earth stations at given positions, when one or more satellites are used; the given position may be a specified fixed point or any fixed point within specified areas; in some cases this service includes satellite-to-satellite links, which may also be operated in the inter-satellite service; the fixed-satellite service may also include feeder links for other space radiocommunication services.

**Fixed VSAT**: VSAT used in FSS system at given position; the given position may be a specified fixed point or any fixed point within specified areas.

NOTE: Mobile VSAT is excluded from this definition.

**Geostationary satellite:** A geosynchronous satellite whose circular and direct orbit lies in the plane of the Earth’s equator and which thus remains fixed relative to the Earth; by extension, a geosynchronous satellite which remains approximately fixed relative to the Earth.

**Geostationary-Satellite Orbit:** The orbit of a geosynchronous satellite whose circular and direct orbit lies in the plane of the Earth's equator.

**Geosynchronous Earth Orbit:** Earth-centered orbit at approximately 35786 kilometres above Earth's surface and synchronised with Earth's rotation. A geostationary orbit is a non-inclined geosynchronous orbit, i.e. in the Earth’s equator plane.

**Geosynchronous satellite:** An earth satellite whose period of revolution is equal to the period of rotation of the Earth about its axis.

**Low Earth Orbit:** Orbit around the Earth with an altitude between 300 km, and 1500 km.

**Mobile VSAT**: VSAT used in MSS systems on moving platform, in three types: airborne, maritime or land based*.*

NOTE: Mobile VSAT can be also referred to as ESIM or ESOMP.

**Non-terrestrial networks:** Networks, or segments of networks, using an airborne or space-borne vehicle to embark a transmission equipment relay node or base station.

**Plane perpendicular to the GSO arc:** The plane that is perpendicular to the “plane tangent to the GSO arc,” as defined below, and includes a line between the [earth station](https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=78b6a8b2410df19c2611058edc75e85f&term_occur=999&term_src=Title:47:Chapter:I:Subchapter:B:Part:25:Subpart:A:25.103) in question and the GSO [space station](https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=0b6c8478b2f4db9e2b4a8a65a86a965f&term_occur=999&term_src=Title:47:Chapter:I:Subchapter:B:Part:25:Subpart:A:25.103) that it is communicating with (FCC 47 CFR 25.103).

**Plane tangent to the GSO arc:** The plane defined by the location of an [earth station](https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=78b6a8b2410df19c2611058edc75e85f&term_occur=999&term_src=Title:47:Chapter:I:Subchapter:B:Part:25:Subpart:A:25.103)'s transmitting antenna and a line in the equatorial plane that is tangent to the GSO arc at the location of the GSO [space station](https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=0b6c8478b2f4db9e2b4a8a65a86a965f&term_occur=999&term_src=Title:47:Chapter:I:Subchapter:B:Part:25:Subpart:A:25.103) that the [earth station](https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=78b6a8b2410df19c2611058edc75e85f&term_occur=999&term_src=Title:47:Chapter:I:Subchapter:B:Part:25:Subpart:A:25.103) is communicating with (FCC 47 CFR 25.103).

**Satellite:** A space-borne vehicle embarking a bent pipe payload or a regenerative payload telecommunication transmitter, placed into Low-Earth Orbit (LEO), Medium-Earth Orbit (MEO), or Geostationary Earth Orbit (GEO).

**Satellite Access Node:** see definition in TS 38.108[4].

**UE transmission bandwidth configuration**: Set of resource blocks located within the UE channel bandwidth which may be used for transmitting or receiving by the UE.

## **<Unchanged Skipped>**

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP 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 3GPP TR 21.905 [1].

ACLR Adjacent Channel Leakage Ratio

ACS Adjacent Channel Selectivity

A-MPR Additional Maximum Power Reduction

BW Bandwidth

BWP Bandwidth Part

CP-OFDM Cyclic Prefix-OFDM

CW Continuous Wave

DFT-s-OFDM Discrete Fourier Transform-spread-OFDM

DM-RS Demodulation Reference Signal

DTX Discontinuous Transmission

EIRP Equivalent Isotropically Radiated Power

ESIM Earth Station in Motion

ESOMP Earth Stations on Mobile Platforms

EVM Error Vector Magnitude

FR Frequency Range

FRC Fixed Reference Channel

FSS Fixed Satellite Service

GEO Geosynchronous Earth Orbit

GSCN Global Synchronization Channel Number

GSO Geostationary-Satellite Orbit

IBB In-band Blocking

ITU-R Radiocommunication Sector of the International Telecommunication Union

LEO Low Earth Orbiting

MBW Measurement bandwidth defined for the protected band

MEO Medium Earth Orbiting

MOP Maximum Output Power

MPR Allowed maximum power reduction

MSD Maximum Sensitivity Degradation

MSS Mobile Satellite Services

NGEO Non-Geostationary Earth Orbiting

NGSO Non-Geostationary-Satellite Orbit

NR New Radio

NR-ARFCN NR Absolute Radio Frequency Channel Number

NS Network Signalling

NTN Non-Terrestrial Network

OCNG OFDMA Channel Noise Generator

OOB Out-of-band

PRB Physical Resource Block

QAM Quadrature Amplitude Modulation

RAN Radio Access Network

RE Resource Element

REFSENS REFerence SENSitivity

RF Radio Frequency

RMS Root Mean Square (value)

RSRP Reference Signal Receive Power

RSRQ Reference Signal Receive Quality

RX Receiver

SAN Satellite Access Node

SC Single Carrier

SCS Subcarrier spacing

SEM Spectrum Emission Mask

SNR Signal-to-Noise Ratio

SRS Sounding Reference Symbol

SS Synchronization Symbol

TN Terrestrial Network

TX Transmitter

TxD Tx Diversity

UE User Equipment

VSAT Very Small Aperture Terminal

## **<End of Change>**