**3GPP TSG-SA5 Meeting #148-e *S5-233402***

**e-meeting, 17 April - 25 April 2023**

**Source: China Unicom**

**Title: pCR 28.841 add potential requirements and solutions for monitoring of satellite components**

**Document for: Approval**

**Agenda Item: 6.8.7.3**

# 1 Decision/action requested

***The group is asked to discuss and agree on the proposal.***

# 2 References

[1] 3GPP draft TR 28.841: " Study on Management Aspects of IoT NTN Enhancements v0.4.0".

# 3 Rationale

This pCR is to add potential requirements and solutions for TR 28.841[1].

# 4 Detailed proposal

It proposes to make the following changes to the draft TR 28.841[1].

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| **1st 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".

[2] 3GPP TS 36.300: " Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2".

[3] 3GPP TS 38.300: " NR; NR and NG-RAN Overall description; Stage-2 ".

[4] 3GPP TR 28.808: "Study on management and orchestration aspects of integrated satellite components in a 5G network".

[5] 3GPP TS 23.401: "General Packet Radio Service (GPRS) enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access".

[6] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification".

[7] 3GPP TS 36.304: "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) procedures in idle mode"

[8] 3GPP TR 38.821: " Solutions for NR to support non-terrestrial networks (NTN) ".

[9] 3GPP TS 28.313: "Self-Organizing Networks (SON) for 5G networks".

[10] 3GPP TR 28.809: "Study on enhancement of management data analytics".

[11] 3GPP TS 28.104: "Management and orchestration; Management Data Analytics (MDA)"

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| **2nd change** |

#### 5.2.2.2 Monitoring of the satellite coverage problem

[REQ-FS\_IoT\_NTN-mon-1.1.1] In a NB-IoT/eMTC Non-Terrestrial Network integrating a MEO or GEO satellite components, it shall be possible to monitor the satellite coverage problem.

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| **3rd change** |

#### 5.3.2.2 Solution to monitor the satellite coverage problem

UE uses satellite RAN that provides discontinuous coverage (e.g., for satellite access with discontinuous coverage). UE could predict when e-UTRAN will provide coverage based on the information defined in TS 36.331 [6]. While UE could not obtain the information to judge whether it is in coverage or not due to satellite orbit deviation, etc. To address such problem, ephemeris information could be added in configuration data of coverage problem analysis(clause 8.4.1.1.2 of TS 28.104[11]). Then MDA could be reused to analyze and monitor the coverage problem.

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| **End of change** |