**3GPP TSG-SA WG6 Meeting #68S6-253657**

**Gothenburg, Sweden 25th – 29th August 2025 (revision of S6-253069)**

**Source: China Telecom**

**Title: Key Issue on** **Satellite based AIML service maintainance while losing connetction with terrestrial network**

**Spec: 3GPP TR 23.700-02 V0.0.0**

**Agenda item: 9.12**

**Document for: Approval**

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**1. Introduction**

Considering the scenario where AIML models are deployed on satellites, AIML service continuity must be maintained during a period in which the AIML models on the satellite lose contact with the terrestrial network. There are several ways to maintain AIML service ccontinuity in satellite based senarios (e.g. predicting & managing satellite available time windows for AIML service, utilizing a roaming AIMLE platform as a proxy for connection between on board AIML models and terrestrial network).

**2. Reason for Change**

Enhancements in satellite access based AIML service, to improve on board AIML service continuity.

**3. Conclusions**

<Conclusion part (optional)>

**4. Proposal**

It is proposed to agree the following changes to 3GPP TR 23.700-02 V0.0.0.

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

# 4.X Key Issue #X: Satellite based AIML service maintainance while losing connetction with terrestrial network

## 4.x.1 Description

The relative positions of satellites (such as low-orbit and medium-orbit satellites) other than geosynchronous Earth orbit (GEO) satellites to the AIML service platform on the terrestrial network are constantly changing. Considering the scenario where AIML models are deployed on satellites, there are specific time windows during which the AIML model on the satellite can establish data and signaling communications with the AIML service platform. Outside of these time windows, the AIML model on the satellite loses contact with the terrestrial network. If the time required for the onboard AIML model to collect remote sensing data exceeds the satellite-to-ground network communication window, AIML service continuity must be maintained during the extended period (e.g., 1. Waiting for the satellite to reestablish contact with the ground network and obtain the collected remote sensing data; 2. Switching to another AIML satellite providing remote sensing services and taking over the data and processing results frodm the original AIML satellite; 3. Maintaining data and signaling communication between the ground network and the AIML satellite via an AIMLE server-to-AIMLE server mechanism).

It is worthwhile to explore ways to ensure onboard AIML service continuity by leveraging inter-satellite handovers and predicting/managing the AIML satellite's available time windows, thereby maintaining user services even after the AIML satellite leaves the available time window. Furthermore, it is worthwhile to investigate interconnection solutions between AIMLE platforms in the ground network. By using a roaming AIMLE platform as a proxy for the original AIMLE platform, a data and signaling communication path could be established between the original AIML satellite, the roaming AIMLE platform, and the original AIMLE platform to ensure user service continuity.

## 4.x.2 Open Issues

This key issue will study:

1. Whether and how to support satellite based AIML service maintainance(management) while(when) losing connetction with terrestrial network (e.g. When a satellite is supporting AIML service connection or related data collection, the satellite keeps connection with terrestrial network due to exceeding the available time window).

2. Whether and how to maintain and reestablish communication between UE and AIMLE layer while collecting/transmitting remote data via satellite (e.g. predict/manage available time window of satellites related to (based on) AIML data collection and transmission informantion).

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