**3GPP TSG-SA5 Meeting #156 *S5-244126rev1***

Maastricht, Netherlands, 19 - 23 August 2024

**Source: CSCN**

**Title: pCR TR 28.846 Add business scenarios for roaming from terrestrial operator network to satellite operator network**

**Document for: Approval**

**Agenda Item: 7.5.1**

# 1 Decision/action requested

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

# 2 References

[1] 3GPP TS 23.501 V19.0.0 System architecture for the 5G System (5GS)

[2] 3GPP TR 28.844 V18.0.0 Study on charging aspects of satellite in the 5G System (5GS)

[3] S5-241672 Discussion on charging between satellite network operator and terrestrial network operator

[4] S5-241830 New Study on charging aspects of satellite access Phase 3

[5] S5-243006 DP on business scenarios and charging requirements for roaming from terrestrial operator network to satellite operator network

# 3 Rationale

3.1Business scenario for roaming from terrestrial operator network to satellite operator network

3.1.1General roaming

Users of terrestrial network operator can roam into satellite operator network. Satellite network operator should be able to generate billing information based on data connectivity and mobility management (referred to TS 32.255 and TS 32.256).



Figure 3.1.1-1: General roaming

3.1.2Data plan stacking

Terrestrial network operator adds a satellite data plan to their user’ plans, and the satellite data plan information needs to be synchronized to the satellite network operator. When users of terrestrial network operator roam into the satellite network, the satellite network operator should be able to generate billing information based on the satellite data plan.



Figure 3.1.2-1: Data plan stacking

# 4 Detailed proposal

Business scenarios for roaming should be written into R19 TR28.846.

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| **1st Change** |

## 5.X Business scenario for roaming from terrestrial operator network to satellite operator network

Depending on the collaboration model between satellite and terrestrial operators, there are two roaming scenarios.

Business scenario#1a: General roaming. Subscriber of terrestrial network operator can roam into satellite operator network. Terrestrial network operator could be charged by Satellite network operator. Subscriber could be charged by terrestrial network operator.

Business scenario#1b: Terrestrial network operator sells satellite data plan. Terrestrial network operator can collaborate with SMNO to sell satellite network data plan to their own subscriber. Subscriber of terrestrial network operator can purchase an additional data plan for satellite network. The additional data plan can be a standalone data plan which contain quota or credit that can be used for satellite communication services. Based on this satellite data plan, subscriber of terrestrial network operator can roam into the satellite network. Terrestrial network operator could be charged by Satellite network operator. Subscriber could be charged by terrestrial network operator. Optionally, the satellite data plan information can be synchronized to the satellite network operator before user roam in. Synchronization is currently outside the scope of 3GPP, it can be implemented depends on the agreement between operators.

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| **End of change** |