**SA WG2 Meeting #149eS2-2200101r10**

**February 14th – 25th, 2022, Elbonia**

**Source: China Mobile, Samsung, CATT, Ericsson, vivo**

**Title: Key Issue: support UE access EHE in a VPLMN in roaming scenario**

**Document for: Approval**

**Agenda Item: 9.11**

**Work Item / Release: FS\_ EDGE\_Ph2 / Rel-18**

*Abstract of the contribution: Propose the key issue which is related with WT#1*

# 1 Discussion

This paper is to propose a new key issue according to the WT#1 of FS\_ EDGE\_Ph2.

WT#1:Improvements to roaming, to support access to EHE in a VPLMN

# 2 Proposal

**It is proposed to update TR 23.700-48 on FS\_ EDGE\_Ph2 as follows.**

*FIRST CHANGE*

## 5.1 KI#1: Accessing EHE in a VPLMN when roaming

### 5.1.1 Description

Editor's note: This key issue corresponds to Work Task #1 in SP-211638. This sub-clause can be further improved based on contributions.

The purpose of this key issue is to define 5GS improvements to support the UE access to an EHE in a VPLMN.

Two scenarios (i.e. UE accessing EHE in VPLMN via an LBO PDU Session and UE accessing EHE in VPLMN via HR PDU Session) are described in clause 5.1.2.

For the scenario using LBO PDU Session, potential solutions should address the following:

- how to establish the LBO PDU Session towards the correct S-NSSAI/DNN pair in order to access an EHE in the VPLMN;

- how to support Rel-17 edge computing related procedures, such as EAS (re-)discovery, as specified in TS 23.548 [03], clause 6.

For the scenario using a PDU Session with a PSA in the HPLMN, potential solutions should address the following:

- how to authorize the PDU session to support local traffic routing to access an EHE in the VPLMN;

- whether and how to support charging for the local traffic of a PDU session that supports local traffic routing to access an EHE in the VPLMN;

- how to support Rel-17 edge computing related procedures, such as EAS (re-)discovery, as specified in TS 23.548 [03], clause 6;

- how to ensure proper policy control and QoS enforcement

NOTE 1: Interaction with SA5 is expected regarding charging aspects.

- potential impact on Policy and QoS control;

- how to configure the VPLMN ECS address to UE in roaming scenarios;

* how to support the edge relocation in roaming scenarios.

NOTE 2: In Rel-17, the ECS address is provided by UDM, which requires further consideration in scenarios with ECS in a VPLMN. This may need some coordination with SA6.

### 5.2.2 Scenarios

Editor's note: This clause will document the scenarios (and potential associated use cases) applicable to KI#1, if any. This clause will be removed if left empty.

For a roaming UE, accessing to EHE in VPLMN might be needed to fulfil use cases requiring edge computing. Two main scenarios should be considered:

1) UE accessing V-EHE via a Local Breakout (LBO) PDU Session.

 The scenario supports all connectivity models and assumes that an LBO PDU Session is used to access an EHE in VPLMN for EC applications.

 With a LBO PDU Session, the UE can access an EHE in VPLMN.

NOTE 1: At least two different PDU Sessions are required to access an EHE in VPLMN and Home DN in HPLMN. With this scenario, it requires more than two sets of configurations (i.e. DNN and S-NSSAI pair).

2) UE accessing V-EHE via a Home Routed (HR) PDU Session (i.e. with PSA in HPLMN).

 This scenario assumes the session breakout for the HR PDU Session is used to access EHE in VPLMN for EC application.

 With a single PDU Session, UE can access an EHE in VPLMN and also the DN in HPLMN.

NOTE 2: With a single PDU Session and (DNN+S-NSSAI), it can support both EC and non-EC applications in either roaming or non-roaming case.

 To support such PDU Session, it needs to be studied how the UE can access the V-EHE via a HR PDU Session. Two sub-scenarios need to be considered:

2.1) HPLMN has the knowledge of EAS deployment information in VPLMN for specific services. The HPLMN triggers EAS discovery and local traffic routing in VPLMN.

2.2) HPLMN does not have the knowledge of EAS deployment information in VPLMN. The VPLMN triggers EAS discovery and local traffic routing in VPLMN.

### 5.1.3 Assumptions

Editor's note: This clause will document assumptions applicable to KI#1, if any. This clause will be removed if left empty.

*End of CHANGE*