**3GPP TSG SA WG2 Meeting #155 *S2-23xxxx***

**Athens, 20-24 February 2023 (revision of S2-220xxxx)**

**Source: Nokia, Nokia Shanghai Bell**

**Title: Considerations on the normative support of KI#5 feature**

**Document for: Discussion and Agreement**

**Agenda Item: 9.14**

**Work Item / Release: eNS\_Ph3/Rel-18**

*Abstract: this paper comments on some aspects related to how to proceed with KI#5*

# 1. Introduction/Discussion

**Topic 1: whether to indicate the support of "Partial Network Slice support in a RA "capability or individual UE support**

Status: there is an editor's note on this in The CR in S2-2301483. Nokia proposes that the feature support indication is the way forward and not the individual UEs, because this allows operators to choose what option to use without worrying of mixed support in the UE installed base. In short this is a sounder approach from an ecosystem standpoint.

**Proposal 1: UEs to indicate the " Support of Partial Network Slice support in a RA "capability.**

*Action 1: remove the EN in clause 5.4.4a*

**Topic 2: Impact on Network Slice based cell reselection and Random Access**

Status: The UE performs cell reselection so it can reselect cells supporting certain S-NSSAIs. So far, the CR in S2-2301483 only adds the Partially Allowed NSSAI S-NSSAI to the ones the NAS passes to the AS. However, we believe the UE should also aim to reselect the cells that also support the Rejected s-NSSAIs partially in the RA so it can trigger the request of these S-NSSAIs. If not, the UE in certain Slice allocation to bands, would not really be able to reselect cells where these S-NSSAIs are supported and, as a consequence, not be able to request Rejected S-NSSAI(s) partially in the RA as e.g. the UE would not camp in cells in the TA where this S-NSSAI is supported.

**Proposal 2: include the** **Rejected S-NSSAIs Partially in the RA in the list of S-NSSAIs the UE considered for Network Slice based cell reselection alongside the Allowed NSSAI and Partially Allowed NSSAI S-NSSAIs.**

*Action 2: Update clause 5.3.4.3.4*

**Topic 3: Computing of RFSP**

Status: The CR in S2-2301483 only adds the Partially Allowed NSSAI S-NSSAI s to the ones that can be considered for RFSP formulation by the PCF. We believe that for similar reasons as quoted in Topic 2 analysis, we should also allow the PCF to consider the "Rejected S-NSSAIs Partially in the RA" also.

**Proposal 3: include the Rejected S-NSSAIs Partially in the RA in the list of S-NSSAIs the PCF can consider considered for RFSP formulation alongside the Allowed NSSAI and Partially Allowed NSSAI S-NSSAIs.**

*Action 3: Update clause 5.3.4.3.1*

**Topic 4: the AMF can decide to consider a S-NSSAI partially supported in the RA Partially allowed or partially rejected based on policy. However, it needs to be clarified that if the S-NSSAI is supported in the cell where the UE Requested the S-NSSAI, then the S-NSSAI not uniformly supported in the RA can only be partially allowed. Furthermore if the S-NSSAI is subject to a requirement that the UE needs to register when exiting the Area of support of the S-NSSAI, then the RA can only be set to match the area of support of the S-NSSAI and the S-NSSAI must be in the Allowed NSSAI (there is no point to make the RA larger as a MRU is required upon exiting the area of support of the S-NSSAI, so there is no gain to make the RA bigger that the area of support of the S-NSSAI)**

Status: The CR in S2-2301483 only states that the AMF decides based on policy and does not clarify the conditions when the decision can be policy based and when a S-NSSAI should be partially allowed or just allowed and RA restricted to its area of support.

**Proposal 4: clarify the conditions under which the AMF decision can be policy based and the conditions under which it only make sense to have the RA fitting the area of support of a S-NSSAI.**

*Action 4: Update clause 5.15.x*

**Topic 5:** **If the network supports for some S-NSSAIs AoS that is smaller than the TA for some of the TAs in the RA, and allocates only zero resources to the network slice in some cells of the TA (i.e. the slice is only available in parts of the TA), then the behaviour of S-NSSAIs indicated in Partially Allowed NSSAI and Rejected Partially in the RA needs further clarification.**

Status: The CR in S2-2301483does not cover this topic.

**Proposal 5: the AMF can indicate to the UE for these TAs the cells where the S-NSSAI is allocated more than zero resources. A UE which receives such S-NSSAI as partially Allowed does not perform Mobility Registration Update upon entering and exiting the cells where the S-NSSAI is indicated to be associated to greater than zero resources.**

 **A UE which receives such S-NSSAI as rejected partially in the RA performs Mobility Registration Update upon entering the cells where the S-NSSAI is indicated to be associated to greater than zero resources.** **If a UE requests the S-NSSAI in a cell of the TA where the S-NSSAI is indicated as associated with zero resources, the AMF can indicate the S-NSSAI in the Partially Allowed NSSAI or as rejected partially in the RA based on AMF policy.**

*Action 5: Update clause 5.15.x accordingly pointing to the CR on AoS that is not matching TA boundary.*

# 2. Proposal

it is proposed that the CRs in S2-2301483 is revised as in S2-230xxxx as per the proposals above.