**SA WG2 Meeting ##153-e S2-220xxxx**

**10-17 October 2022, Electronic Meeting**

Title: Draft Response to “LS to 3GPP SA2 on VoLTE Roaming GBR Handling”

Response to: S2-2203630 = NRG 13\_201r2

Release: -

Work Item: -

Source: Vodafone [SA2]

To: GSMA-NRG

Cc: CT4, SA4, CT 3

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Attachments: None

**1. Overall Description:**

SA2 thanks GSMA NRG for their LS on this topic, and thanks CT 4 and SA4 for their assistance to SA2. Over the last few meetings, SA2 has been actively discussing this topic and consulting with SA4 and CT4: the related LSs are in S2-2204724, S2-2208158 (=S4-221192) and S2-2208133 (=C4-224401).

With regard to the NRG suggestion for the VPLMN to have the “possibility to override also the GBR parameter value sent by HPLMN during the bearer setup process”, SA2 do not believe that this is an advisable thing to do because of (a) the response from SA4, and (b) unilateral MME action to downgrade the GBR would cause a mismatch between the GBR on the CDRs and what the VPLMN’s RAN delivers (the SGW and PGW CDRs would have the same, inappropriate, value).

SA2 acknowledge the operational complexity of having a GBR agreed between every pair of HPLMN and VPLMN and observe that the situation is likely to get worse as:

* the number of VoLTE roaming agreements increases (and they become bi-directional);
* they are expanded to cover VoNR;
* EPS fallback is used (where IMS sees the access type as NR, but the GBR bearer is established on LTE); and
* satellite access (Non-Terrestrial Networks) gets deployed - where the maximum GBR might be very low (e.g. in Release 18, RAN working groups are studying NR enhancements for NTN access in order to support VoIP at 4.75 kbps).

SA2 (with CT4’s help) has discussed one (or more) potential solution(s), which would require updates to many entities in the VPLMN and HPLMN (e.g. MME, Serving GW, PDN GW, PCRF, plus a number of IMS nodes, and for VoNR also impact the AMF, SMF and PCF). Designing, specifying, implementing, and rolling out any such solution would obviously take some time.

An alternative solution might be for GSMA to come to an agreement on a common voice GBR value to be used in all IMS roaming agreements. In SA2 view such a value can be codec rate agnostic and will need to be the minimum 5QI/QCI1 GBR value to be supported in all VPLMNs and needs to be above the maximum codec rate of the codecs specified in 3GPP TS 26.114, and/or IR.92. Alternatively, codec specific values can be defined by GSMA, and roaming partners need to agree in their roaming agreements on the codecs that are supported, also referring to the codec specific GBR values. However, this approach may still lead to issues with e.g. satellite access systems in VPLMNs.

SA2 also observes that GSMA has attempted this approach in IR.88 (Annex E Table 1 Roaming QoS values) with a recommend GBR 156kbps (assuming three concurrent streams), but the scenario raised in NRG 13\_201r2/S2-2203630 (see below) shows that MNO A and MNO C are not following this recommendation:

*The following scenario shows how this can prevent commercial VoLTE roaming launch:*

* *MNO A is using a value of GBR=64kbps*
* *MNO B is using a value of GBR=156kbps*
* *MNO C is using a value of GBR=512kbps*

**2. Actions:**

**To** **GSMA NRG**

**ACTION:** SA2 requests GSMA NRG to take the above information into account and, if desired, provide feedback.

**3. Date of Next SA2 Meetings:**

They may still change so please look at the [3GPP calendar for SA2.](https://portal.3gpp.org/?tbid=375&SubTB=385#/)