**Notes from 3GPP SA2 eNPN Conference Call: "preparation of eNPN work for SA2#143e"**

Date: 20210126

Convenor: Peter Hedman (Ericsson)

Attendance (sorry if I missed someone):

Ericsson, NTT DoCoMo, Samsung, MediaTek, ETRI, Sharp, Huawei, Orange, Nokia, Tencent, OPPO, Futurewei, Lenovo, DT, LGE, CMCC, IPcom, Charter, Telecom Italia, Interdigital, Altiostar, Perspecta Labs, Intel,Qualcomm, Openet, T-Mobile, Alibaba, Infoblox, Telefonica, ZTE, Vodafone, BT, Sony, Xiaomi, Spirent, Trideaworks, FirstNet, Philips, Ospite, Convida, CableLabs,

Agenda:

1. Check outcome of eNPN moderated email discussion
   1. We walked through the proposed way forward of the available outcome of the eNPN moderated email discussion here: <ftp://ftps.3gpp.org/tsg_sa/WG2_Arch/TSGS2_143e_Electronic/INBOX/CCs/Moderated_Email_Discussion/eNPN/S2-21xxxxx-eNPN-issues-normative_FINAL_r01.docx>
      1. KI#1-Q3: AMF selection and UE identities
         1. Different understanding of what question was meant to cover.
         2. UE ID aspect for NF selection during UE registration to SNPN supporting SP was not really part of the question as the NOTE in 8.1.2 was meant to cover only mobility between e.g. SNPNs and question would then be whether UE uses Initial or Mobility Registration and whether and when UE uses UE ID from previously registered SNPNs).
            1. Agreed that SA2 need to wait for SA1 LS reply before resolving the mobility aspects
         3. However, also discussed that the UE ID and related NF selection during UE registration to SNPN supporting SP needs to be clarified (DP or enough with CRs).
      2. KI#2-Q1: How existing mechanisms and information can be used to enable support for VIAPA services:
         1. No discussion and proposal kept
      3. KI#4-Q1: Need for additional SIB information
         1. Agreed to support onboarding enabled indication, but different understanding whether more info is needed.
         2. It was discussed that the relation to KI#1 GID was not well discussed and there is a need to discuss whether KI#1 GID can be re-used for KI#4 or whether a separate GID would be needed if enabled for KI#4 (or no GID is to be supported for KI#4). It was also discussed whether such GID would correspond to DCS or to SO.
            1. Therefore the relation to KI#1 GID should be clarified and there were different opinions whether such discussion should be part of study or normative work. The proposal is to have a discussion e.g. DP done as part of normative work.
            2. It was agreed that all other SIB enhancements to be deferred to later release.
      4. KI#4-Q2:Instructions to the UE for using CP or UP provisioning in PNI-NPN
         1. The two options were discussed and option 1 was clarified in relation to NSSAA. Option 2 was clarified that UE would always indicate whether the UE supports CP/UP provisioning as the UE might not know for PNI-NPN that the UE should be provisioned.
         2. Rapporteur will prepare a SoH input accordingly, dependent on SA3 feedback for support of CP provisoning
      5. KI#4-Q3: Signalling used when ON is a PLMN
         1. Majority agreed with the proposed way forward but MediaTek argued that UE logic needs to be the same for O-SNPN and when ON is a PLMN. Therefore a statement was added " Any proposal that proposes RRC/NAS Onboarding indications for PLMNs would need to be well justified"
            1. MTK argued that UE may have have only Default UE Credentials and not PLMN USIM profile or finds no network to camp on using USIM profile and then UE should be able to find a PLMN support UE Onboarding.
   2. A new revision as per above discussions at the meeting is now available here: <ftp://ftps.3gpp.org/tsg_sa/WG2_Arch/TSGS2_143e_Electronic/INBOX/CCs/Moderated_Email_Discussion/eNPN/S2-21xxxxx-eNPN-issues-normative_FINAL_r02.docx>
2. Work Plan for eNPN
   1. Draft WP available here: <ftp://ftps.3gpp.org/Email_Discussions/SA2/eNPN>
      1. Rapporteur provided a version of the WP including the file names of available CR file (see zip file below): <ftp://ftps.3gpp.org/Email_Discussions/SA2/eNPN/S2-21xxxxx-eNPN-workplan_r20.docx>
   2. Due to time constraints there was no time to check the WP and discuss the overlaps, i.e. **the resolution of overlaps and progress of CRs was left for discussions by e-mail using SA2 discussion mail-list or between interested companies**.
3. Discuss available CR packs for eNPN
   1. A zip file with available CRs is available here (with a prefix for the task CR relates to): <ftp://ftps.3gpp.org/Email_Discussions/SA2/eNPN/CC-20210126-CRs/20210126-available-CRs.zip>
   2. Due to time constraints there was no time to open and review the actual CRs but the following issues were discussed per KI
      1. KI#1:
         1. terminology for Separate entity
            1. Some wanted to keep separate entity while it was not acceptable for others
            2. SP as in Service Provider was not acceptable to some operators
            3. Credential Owner and Subscription Owner were proposed, but a preference for Subscription Provider i.e. proposal was to use SP as in Subscription Provider. However, then there was a request to use a 3 letter abbreviation instead of only SP. Home SP was proposed but not liked by some operator. **Rapporteur to continue discussion starting from Subscription Provider (SP)**
         2. Terminology for SNPN
            1. It was suggested by DT to create a new NPN type i.e. in addition to SNPN and PNI-NPN. However, that was not acceptable by many as most is re-used and extended from SNPN and when SNPN is used in SBA protocols the name cannot be changed.
            2. **Agreed to use SNPN also when NPN supports Subscription Provider**. It was proposed by Intel that we may add a note explaining that for “historical reasons” SNPN is kept also for this case while the SNPN has ability to communicate with an SP. There were different opinion whether such note is needed, but agreed that we need some form of clarification as in this case the SNPN is not "completely standalone".
            3. On usage of V-SNPN and Visited SNPN there were concerns raised by some operators while the use of Serving SNPN was aceptable. **It is proposed to use Serving SNPN, when needed/useful**.
      2. KI#2:
         1. 5QI-DSCP mapping table in SA2 or CT3?

Vivo asked if these are different mechanisms?

Nokia, same mechanism but about the mapping i.e. re-using R16 mechanism

Vivo, what about NAS signaling?

Nokia, no conclusion for NAS was reached at the study

Huawei, for NAS Huawei may provide a DP, on the question it depends on the on text around the table

Ericsson explained the reasoning for letting CT3 do the table (as CT3 can then reference RFCs and look into this from a stage 3 perspective) while having text in SA2 about the purpose and usage of the table with the mapping.

After some discussion it was **agreed to do a work split between SA2 and CT3 with actual table in CT3 and with a description in 23.501 annex pointing to CT3 TS** (e.g. TS 29.513) for a mapping table.

* + 1. KI#3:
       1. Emergency by overlay SNPN or not (any content in CR or none)

Nokia and E/// proposed to not support emergency via N3IWF towards overlay SNPN

QC, ECGI of underlay network can be provided in SIP INVITE

ECGI of underlay nw not known/useful by overlay

QC, scenario can be that UE is not supporting E-UTRA that is used for emergency by PLMN i.e. UE uses NR to PLMN and PDU Session with best effort QoS used and UE establish connection to N3IWF of SNPN

After some further discussion it was **agreed to not support/specify the scenario** i.e.

* + - * 1. No need for any specification, besides **a NOTE that scenario using emergency for SNPN as overlay network is not specified**
        2. **UE will not attempt overlay nw for emergency**
      1. Emergency support indication proposed per SNPN, why?
         1. Ericsson, MOCN cell, existing imsEmergencySupported are for PLMNs and some SNPNs may support and some not
         2. Intel and some more assumed RAN can redirect based on which network supporting emergency
         3. Ericsson, that would not work as Network ID is used as input to secuirty procedures i.e. UE need to know network id used.
         4. Vodafone assumed that no authentication and null encryption is used, but others believe that cannot be assumed acceptable in all regions
         5. Intel, SA2 will need to answer RAN question as RAN2 is working on this now.
         6. Ericsson **suggested to keep conclusion on support per SNPN, but also suggest that we check specs further off-line**.
    1. KI#4:
       1. Documentation in separate clause or merge into existing ones?
          1. Separate clause preferred by many, but then it seems Nokia and QC wanted to merge in SIB, UE configuartion and network selection into existing SNPN clauses while Intel and Ericsson wanted to keep also those aspects in separate clause for UE Onboarding
          2. **It was proposed to agree that O-SNPN selection beyond UE configuration and “O-SNPN list” (and usage is UE implementation) is not to be part of CR to Q1, DP if more logic is needed, e.g. prio of O-SNPN list, can be added in Q2**
          3. **No firm conclusion were to put the above text i.e. discussions to continue by mail.**
          4. For 23.502, a separate Registration or merged into existing?
          5. Option to merge into existing or create a new flow for registration and explain difference to existing one was discussed. No firm conclusion, but conclude by mail
       2. Terminology
          1. Onboarding

Proposal: UE Onboarding=Onboarding Connectivity + UE Remote Provisioning

Due to lack of time the proposal was not discussed.