**SA WG2 Meeting #142e S2-200**

**Nov16th – 20th , 2020 ; Elbonia (revision of S2-200)**

**Source: Nokia, Nokia Shanghai Bell**

**Title: Handling of LS on IP address to GPSI translation (S2-2008358 / S6-202008)**

 **Document for: Agreement (P-CR)**

**Agenda Item: 4.1**

**Work Item / Release: EDGEAPP / Rel-17**

*Abstract of the contribution: proposed a “moderated email discussion”*

# 1 Discussion

there may be multiple answers about S2-2008358 = S6 LS on IP address to GPSI translation

1. Due to the closing of the study item SA2 agrees not to address this issue in the Rel-17 time frame
2. SA2 Completes NEF API specification to support UE addressing information as UE identifier as much as possible but a statement tells that: “In this release the case of UE addressing information corresponding to NATed Traffic is not supported”
3. SA2 Completes NEF API specification to support UE addressing information as UE identifier as much as possible including support of NAT
4. SA2 provides the exposure API to return a GPSI (if GPSI is available for the UE identified by IP address) when an IP address of the UE is provided.

# 2 Proposal

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| --- | --- | --- | --- |
| **Company** | **supports** | **Objects to** | **Free text** |
| **Nokia** | 2,3 | 1, 4 | it does not look to be a good idea to not handle in R17Application requests targeting an UE identified by UE addressing information when 3GPP claims Edge Computing is a flagship of R17 . Conversely R17 is more than full.Having said that, solving the issue of UE addressing information corresponding to NATed IP address may be a second level of discussionAs explained in nokia’s paper, providing back a GPSI to the AF as in alternative 4 does NOT solve the NAT or IP address overlap issues as anyhow Alternative 4 starts with the AF providing UE IP addressing information |
| **China Mobile** | 2, and a new solution which I described in the text | 4 |  In our understanding for SA6 slides and LS, the requirement from their side is they thinking the IP address is not sufficient for a EAS to invoke the EES or NEF capability. This un-sufficient, part reason is from private or public IP address, other part reason is that they want to have a speific UE ID. For their new LS, SA6 do not intent to let us solve the IP address problem, So their requirement is for whether SA2 and SA3 can create a method to provide some UE ID to EAS. Our answer is, the UE ID can not be MSISDN, so using GPSI is not accuracy. **The new solution proposal:** While some external ID can be considered. I mean NEF can have a negotiation with the application and create a external ID for specific UE. SA3 may also need to be involved to protect the external ID e.g. changing this periodic. |
| **AT&T** | 4, 3 | 1, 2? | Having the translation API for IP address to GPSI (i.e. “EAS-specific UE External Id”) is essential to support EAS use cases. The GPSI in the form of “EAS-specific UE External Id” (not GPSI in the form of MSISDN) is needed so that:* the UE/user is anonymous to the EAS while EAS still can correctly identify this particular UE/user over API requests to EES/NEF.
* Add in addition to being an anonymous UE Identifier, the “EAS-specific UE External Id”, as the name implies, is an App-specific UE identifier so that UE’s behaviour across EASs cannot be tracked behind the scene by cooperating EAS players.

The function of mapping the static UE GPSI (i.e. External Identifier extracted from UDR/UDM by NEF) to an “EAS-specific UE External Id” can be provided by NEF if the EAS has been onboarded onto the NEF directly. Or this mapping function can be provided by the EES since EASs are onboarded onto EES and not NEF.Example use case: The App is fired up for the first time on the UE, user traffic reaches EAS which needs to uniquely but anonymously identify the UE/User. This cannot be done using UE’s IP address as UE IP address changes from one session to the next. So, EAS calls up IP\_Addr\_To\_GPSI\_Translation API onto EES/NEF and receives an “EAS-specific UE External Id” in response. EAS creates a record for this new user and also records the “EAS-specific UE External Id”. Time goes by and a week later the same UE/user starts up the App again, the EAS sees the source UE IP address and has no clue who it is and whether this is a returning user of a new one, so EAS calls up the IP\_Addr\_To\_GPSI\_Translation API onto EES/NEF (to identify the user) and receives an “EAS-specific UE External Id” in response. EAS looks up in its db for “EAS-specific UE External Id” and finds the user’s record/profile and customizes the App environment for the user accordingly. Next if EAS needs to know the UE’s location, it can make a Location API request onto EES/NEF using the “EAS-specific UE External Id” which uniquely identifies the user across sessions for as long as the user wants.As you see in the above example use case, EAS does not to keep track of UE IP Address to GPSI mapping. |
| **Samsung** | 4, 2?, 3? | 1, 2?, 3? | Supports 4 since 5GC can return the static UE identifier as requested by SA6.Can support 2 or 3 if 5GC returns a static UE identifier. Can not support 2 or 3 if 5GC does not return a static UE identifier.Once returning the static UE identifier is supported, the support of NAT’ed UE identifier  |
| **Intel** | 4 | 1,2,3 | Only option 4 addresses the SA6 request for returning a static identifier to the AF. We support Option 4 for both NATted and non-NATted addresses. It is also acceptable for Rel-17 to support only the case of non-NATted addresses. |
| **NTT DOCOMO** | 2, 4 |  | Agree with the analysis of AT&T. Additional considerations:- In order to consider privacy issues, the GPSI should be in the form of an external UE Id.- Based on Ericsson comments in the email thread, there can be multiple ways of implementing 4; the UE ID could be (SA3 feedback should be considered):a. GPSIb. GPSI with some additions to use a specific external ID for each applicationc. Other e.g. A NEF generated token/handleIn order to properly evaluate the detailed requirements and appropriate solutions, we propose to go for option 2 and address option 4 in Rel-18. |
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*End of changes*