3GPP TSG-RAN meeting #19 ***RP-030170***
Birmingham, UK, 11 – 14 March, 2003

Source: Ericsson, TIM, TeliaSonera

Title: Handling of Early Mobiles

Agenda item: 9.9.11

Document for: Decision

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1 Introduction

The objective for the Early UE RAN adhoc [1] was to select the content of the Information Element to be sent from the Core Network to the RNC. The identified solutions where either the full IMEI-SV or a bit string based on IMEI-SV defining specific work around for identified users. No agreement was however reached and the outcome of the adhoc meeting was communicated with a LS to other groups [2].

During SA2 #30 it was concluded that the lack of RAN decision did cause some difficulties and delays to the SA 2 work, it was also noted that the development of the interfaces specified by, SA 2, CN 1, CN 4, RAN 3, GERAN 2, etc only represent a small part of the actual work that needs to be done by the infrastructure manufacturers for this issue [3].

A joint adhoc [4] between RAN3, RAN2 and SA5 SWGD on Trace management for Rel-6 was held in February. One of the objectives for this joint meeting was to discuss Trace requirements and impacts on UTRAN. One identified requirement common both for the "Management Activation" and "Signaling activation" is that IMEI-SV needs to be passed to the SRNC in order to enable equipment trace.

2 Discussion

TSG SA has approved a requirement specification for the WI Subscriber and Equipment trace, TS32.421 Subscriber and Equipment Trace: Trace concepts and Requirements. That specification clearly require that IMSI, IMEI, and IMEI-SV is made available in the following Network Equipments (NEs):

- MSC Server for tracing activities on A, Iu-CS, Mc and MAP (G, B, E, F) interfaces;
- MGW for tracing activities on ATM, IP and TDM interfaces for user plane characteristics;
- HSS for tracing activities on MAP (C, D, Gc, Gr) and Cx interfaces and location and subscription information;
- SGSN for tracing activities on Gb, Iu-PS, Gn, MAP (Gr, Gd, Gf), CAP (Ge) and Gs interfaces;
- GGSN for tracing activities on Gn and Gi interfaces;
- S-CSCF for tracing activities on Mw, Mg, Mr and Mi interfaces;
- P-CSCF for tracing activities on Gm and Go interfaces;
- RNC for tracing activities on Iu-CS, Iu-PS, Iur, Iub and Uu interfaces;
- BSC for tracing activities on Um, Abis, A and Gb interfaces.

Furthermore, it is stated that the Trace Recording Session can start only when the IMSI (in case of subscriber trace), the IMEI / IMEI-SV (in case of MS trace) or public ID (in case of IMS) is made available in the NE. In order to trace the early phases of the call the IMSI (in case of subscriber trace), the IMEI / IMEI-SV (in

case of MS trace) or public ID (in case of IMS) shall be made available to the NE as soon as practically possible.

The requirements on the availability of IMEI-SV in the RNC are similar for both the Early UE handling and for enabling equipment trace. In both cases the information should be available as early as possible in the RNC. It can be assumed that an Early UE solution with IMEI-SV would also fulfil the release 6 requirements for equipment trace, as also noted by CN4 as in their LS [6]. This solution would also guarantee that we don't exceed the limitations due to message size constraints in the SCCP message "Connection Request" reported in a LS from SA2 [5] to the Early UE adhoc.

3 Conclusion

Following from the discussion above, it is proposed that TSG RAN agree on the IMEI-SV solution since this would enable inclusion of support for trace management to benefit from work done for the handling of Early UEs and thus avoid problems due to message size constraints.

4 References

[1] RP-03xxxx, Draft Report of the "Early UE" Ad Hoc meeting (Sophia Antipolis, France 29 – 30 January 2003)
[2] RPA030014, LS on early UE handling (To: SA2, CN1, CN4, RAN3, Cc: RAN2, GERAN**)**
[3] S2-030964, LS on early UE handling (Reply to RPA030014)
[4] R3-030359, Minutes of joint RAN2-RAN3-SA5 SWGD ad hoc on trace management
[5] RPA030013, LS on Message Size Limitations on Iu and A interface (From: SA WG2)
[6] RP-030126 (N4-030220), LS response on Early Ue Handling (Reply to RPA030014)