TSGS#19(03)0125

Source: **TSG SA WG2 (S2-031012)**
Title: **Revised WID for Early UE**
Agenda Item: **7.2.3**

3GPP TSG-SA2 ~~Meeting #28~~ ~~Tdoc ⌘S2-023645~~
#30 Tdoc S2-031012
~~Bangkok, Thailand, 11-15/11/02~~

~~rev~~
~~of S2-023550~~Milan, Italy, 24th ~ 28th February, 2003

Title: Revised WID for Early UE

Source: Vodafone UK

Agenda Item: Work Planning/Early UE report
Document for: Discussion and approval

~~Draft~~Revised Work Item Description

Title: Early UE handling in the 3GPP system

1 3GPP Work Area

X	Radio Access
X	Core Network
	Services

2 Linked study items

RAN SI on Early UE handling

3 Justification

~~The stimulus for the work is the concern that mobiles are unable to be fully tested against all of the features (or combinations of features) in the 3GPP standards. Hence when one of the un-tested features is "switched on" in a network, there is a risk that some mobiles will not work with this feature (or particular combination of features). Hence, Operators are keen that methods are available that provide the ability to handle these early mobiles in a smooth manner.~~
The WI aims at documenting the mechanism to provide the 3GPP network entities with UE Specific Behavior Information (UESBI). UESBI may be used by correcting mechanisms to overcome some of the issues that will be recognized by 3GPP in TR 25.994 or other such documents. The description of these correcting mechanisms is out of the scope of this study.

4 Objective

The objective of this Work Item is to study the 3GPP architecture impacts and merits of handling indications regarding UE maturity (without duplicating work that is within the responsibility of TSG-RAN).

The candidates identified by TSG RAN, as a complement to the new TR (equivalent to 09.94), were:

1) Hooks included into some early RRC messages; hook may be IMEI-SV, derived from IMEI-SV, or other indication
2) Extension mechanism to the RRC messages allowing rel-99 corrections, when rel-4 changes needs to be backwards compatible.
3) IMEI-SV solution to the CN, with an indication to the UTRAN and GERAN; indication may be derived from IMEI-SV or may be IMEI-SV itself. The GERAN impacts are expected to be linked to inter-RAT handover.

In order that the relative merits of these methods can be studied, it is required that outstanding issues with their handling are resolved.

The first objective is to produce a TR describing these alternative architectures.

The next objective is to provide a stage 2 document that specifies how the combination of the selected techniques can be used to handle UEs of different maturity. This stage 2 specification will focus on issues related to UMTS functionality and GSM-UMTS handover. Unless there is a specific request from TSG-GERAN, this stage 2 will not deal with A/Gb issues apart from GSM-UMTS handover. The contents of the stage 2 specification shall not exceed the requirements identified in section 4 ("Network Entities that could use UE Specific Behaviour Information") of TR 23.895.

5 Service Aspects

No

6 MMI-Aspects

No

7 Charging Aspects

No

8 Security Aspects

No

9 Impacts

Affects :	USIM	ME	AN	CN	Others
Yes		*	X	X	
No	X				
Don't know		~~X~~		~~X~~	

~~Some techniques identified by this TR impact the ME while others don't.~~
~~Some techniques identified by this TR impact the CN while others don't.~~

* = recent changes to the R'99 ME specifications have been made. Further changes to the ME are not anticipated to be required by this Feature.

10 Expected Output and Time scale (to be updated at each plenary)

In the following

- UESBI-Uu means UESBI information corresponding to the hook bits sent directly from UE to (UT)RAN across the radio interface
- UESBI-Iu means UESBI information sent by CN to UTRAN over Iu. This could (still under discussion at 3GPP) mean either IMEISV or BMUEF (noting that this BMUEF could be something more elaborate than a bit map).
- UESBI-Iu + IMEISV means in case of architecture 2 sending both IMEISV + BMUEF

General questions

- Which version of following specs should be the object of CRs and TS. Assumption is R5.

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
~~TR ue.8de~~ TR 23.895	Provision of UE Specific Behaviour Information to Network Entities	SA 2		18	18	
TS 23.195	Provision of UE Specific Behaviour Information to Network Entities	SA 2	RAN 2	19	20	

Affected existing specifications				
Spec No.	CR[1]	Subject	Approved at plenary#	Comments
22.016	Alcatel/ SA1	Use of IMEISV for the Provision of UE Specific Behaviour Information to Network Entities	#20	As 22.016 describes the different usage of IMEISV in a PLMN, a CR is needed to point towards the SA2 TS on this topic (new section to create).
23.002	Alcatel/ SA2	Use of EIR for the Provision of UE Specific Behaviour Information to Network Entities	#20	If EIR is chosen as central DB for IMEISV to BMUEF mapping then an indication in sect. 4.1.1.4 "The Equipment Identity Register (EIR)" is needed.
23.003	CN 4	Check allocation of SV	#20	State that SV is incremented by one at each software update, and, starts from 0.
23.012	CN 4	Location mgmt procedures impacted.	#20	CN 4 need to check for any possible impact.
23.016	None	Not in the scope of 23.016 … but final decision is up to N4.	#20	CN 4 need to check for any possible impact. 23.016 gives the stage 2 description of the subscriber data management handling between: - the Home Location Register (HLR) and the Visitor Location Register (VLR); - the Home Location Register (HLR) and the Serving GPRS Support Node (SGSN). and IMEISV, UESBI are not part of this data, so hopefully no impact.
23.018	CN 4	Possibly impacted re gathering of IMEISV across Iu-cs or Gs	#20	CN 4 to check.

[1] Depicts the name of the company that volunteers to produce such a CR.

23.116	None	No impact on supercharger -- but need to be careful in the SA 2 TS to ensure that "all normal LUs" result in IMEISV check when using Supercharger.	-	As 23.116 is about procedures for data exchanged between HLR and SGSN-VLR (and IMEISV, UESBI are not part of these data)
23.009	CN 1	Check relay MSC functions - what is the current description for how IMSI and other parameters are buffered in the relay MSC.	#20	This is work for CN 1
29.002	CN 4	Update of MAP E to transfer UESBI related information from anchor to target MSC at Hand-Over. Relay MSC functionality needs to be checked.	#20	CN 4 to check for impact in this area. MAP_PREPARE_HANDOVER procedure + MAP definition of UESBI information
29.002	Alcatel/ CN 4	Update of MAP_CHECK_IMEI service for SGSN / VLR to get UE Specific Behaviour Information from EIR	#20	If EIR is used as a central database to translate IMEISV into UESBI. Section 8.7.1
29.010	CN 4	Probably no impact		CN 4 to check
29.018	Alcatel/ CN 1	Transfer of UE Specific Behaviour Information to VLR at Gs association establishment (relates to tbd optimisation(s))	#20	Gs BSSAP+-LOCATION-UPDATE-REQUEST message may be upgraded to carry UESBI (+IMEISV if architecture 2 applies) from SGSN to VLR, avoiding VLR to have to request IMEISV through Gs interface MS Information Request message to the SGSN as part of the Gs interface's association establishment procedures. This would also avoid VLR to have to get the translation from IMEISV to UESBI. Gs interface MS Information Request could also contain UESBI translation associated with IMEISV value, avoiding VLR to have to get this translation.
29.060	CN 4	Transfer of UE Specific Behaviour Information from old to new SGSN at SGSN change (* We should probably record in the stage 2 TS that ONLY GTP v1 is being changed *)	#20	Information to be sent in MM Context (7.7.28) IE within SGSN context Response and in Forward Relocation Request
25.413	RAN 3	Carriage of UESBI in RANAP	#19	
25.413	RAN 3	Definition of new inter-RAT handover reject cause?	#20	
48.008	GERAN 2	[Carriage of UESBI in BSSAP and] definition of Handover Reject cause and related BSS behaviour	GERAN #14 (April '03)	For possible influence of GSM to UMTS handover.
23.060	SA 2	Check for any small changes needed	#20	Main description is in the new TS and NOT in 23.060

Specifications believed to be NOT impacted
23.007
23.101
23.116 (Super-charger spec)
23.119 (GLR spec)
23.121 To be checked
23.221 To be checked
29.119 (GLR spec)

11 Work item raporteurs

Chris Pudney (Vodafone Ltd)

12 Work item leadership

SA WG2

13 Supporting Companies

Vodafone Group, H3G, Nokia, Ericsson, Orange, Siemens, Lucent, [NEC], ~~, Nortel,~~ Motorola, Fujitsu, DoCoMo.

14 Classification of the WI (if known)

X	Feature (go to 14a)
	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

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14b The WI is a Building Block: parent Feature

14c The WI is a Work Task: parent Building Block