Source: Vodafone Group, Nortel, Nokia, Ericsson, Siemens

Title: Status of early UE handling with proposed study item

Agenda item:

During last two RAN plenary meetings a number of methods have been discussed to handle problems that may arise within early mobiles. The discussion resulted in RP-020449 at RAN #16, that summarised a number of these proposals.

During RAN#17, no agreement could be reached regarding which solution(s) were required, and a number of issues were raised with respect to how these methods are used for 'system' problems, such as handover, relocation, etc.

The candidates, 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 RAN; indication may be derived from IMEI-SV or may be IMEI-SV itself.

For the hook all that is needed at this stage in RAN is an extension container that may or may not be used. The actual content of the hooks can be decided at a later stage.

All candidates have impacts on UTRAN which based on discussion should be studied.

The supporting companies propose the following:

1) A more detailed examination of how the 'hooks' work within RAN, for relocation/handover/etc, performed as part a new RAN SI.
   a. Discussion is invited in RAN on when to include the extension container in RRC
2) A more detailed examination of how the 'network indication' (either IMEI-SV/bitmap) work within RAN, for relocation/handover/etc, performed as part of a new RAN SI.
3) RAN asks SA to create a Work Item studying the overall architecture and signalling principles for early UE handling. It is expected that this WI will cover early UE handling, in RAN, CN, and GERAN.
4) At RAN#18 the results of the SI are presented

Study Item Description

Title: Early UE handling in UTRAN

1   3GPP Work Area

X	Radio Access
	Core Network
	Services

2   Linked study items

SA WI on Early UE handling?
CN SI on early UE handling?
GERAN 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 R'99 standard. 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.

4   Objective

The objective of this Study Item is to study the UTRAN impacts and merits of handling indications regarding UE maturity.

The candidates, 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 RAN; indication may be derived from IMEI-SV or may be IMEI-SV itself.

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

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	X	
No	X			X	
Don't know					

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

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
TR	SI on Early UE handling in RAN	RAN WG2	RAN WG3	18	18	
Affected existing specifications						
Spec No.	CR	Subject		Approved at plenary#		Comments

11   **Work item raporteurs**

Alan Law (Vodafone Ltd)

12   **Work item leadership**

RAN WG2

13   **Supporting Companies**

Vodafone Group, Nortel, Nokia, Ericsson, Siemens

14   **Classification of the WI (if known)**

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

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

14b   The WI is a Building Block: parent Feature

14c   The WI is a Work Task: parent Building Block
Early UE handling (SA2)?