TSG-RAN Meeting #17 ***RP-020465***
Biarritz, France, September 2002

Title: **Vodafone proposal to handle early mobiles**
Source: **Vodafone Group**
Document for: **Discussion**
Agenda:

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1. Introduction

During RAN #15 there was considerable debate over a change request proposing to introduce an "interim test marker" into the UE capability information that is sent to the network, and that, in the end, the CR was withdrawn. Subsequently, at RAN #16 an LS was received from SA WG2 asking RAN to consider the use of the IMEISV as part of a solution to this problem.

The stimulus for the debate is the concern that mobiles are unable to be fully tested against all of the mandatory 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).

Vodafone Group have reviewed the list of candidate proposals in RP-020449 and are in favour of 4.3; the use of the IMEI-SV using existing procedures to the CN and then the CN providing the IMEI-SV to the RAN.

In addition Vodafone would like to emphasise the importance of vendors' participation in IOT programmes in order to facilitate the reliable delivery of UMTS equipment.

2. Vodafone Proposal for use of IMEI-SV in CN and from CN to RAN

The Vodafone Group proposal is that the IMEI-SV is used because it has a number of benefits over the other candidate methods.

2.1) It allows for regression/changes in the handling of mobiles over time. For example, when a new feature is introduced that results in another feature of a certain brand(s) of mobiles not working, by utilising the IMEI-SV corrective behaviour can be designed and applied for most issues.

2.2) By providing the IMEI-SV to the RAN rather than a bitmap reduces the probability of 'commercial' influence of CN element vendors when indications are required to solve the issue with competitive terminals.

2.3) Some mobile faults will only be evident with specific RNSs. It may be difficult to "standardise" such faults and have them represented in the Bitmap proposed for solution 4.4. In addition, the standardisation of these faults effectively requires an RNC vendor to tell their RNC competitors what features they have implemented and/or are testing.

Vodafone Group have noted the concerns that have been expressed by some delegates that by providing the IMEI-SV to the RAN would allow some vendors to leverage on the relationship between their UE products and Network products. Vodafone are aware of this issue, and will be

evaluating their network vendors' performance against all UE's and therefore any undue bias will be considered unacceptable.

In addition, Vodafone are not convinced (at present) of the necessity of introducing 'hooks' that require changes to the UE when they are used. However Vodafone recognise that hooks would allow changes in behaviour to take place upon first access to the network and could be considered complementary to the IMEI-SV solution.

3. Annex – sub clause from RP-020449

4.3 IMEI-SV (existing procedure to CN, new procedure to provide IMEI-SV to RAN)

Giving UTRAN access to IMEI-SV would enable UTRAN to offer "special behaviour" for problem UEs – both for screening out UEs that don't work properly with new functionality, but could also be used for performance optimisations.

However, currently the IMEI is not available in UTRAN, but it is in the CN. One idea according is to send the IMEI together with the IMSI in the "Common Id" message over Iu. This message is sent after the RRC connection already has been established and therefore no "special behaviour" can be allowed until this message is received.

At first, this method seems very good. However, there are some disadvantages:

1) There is an increased burden on UTRAN to handle an additional database in the IMEI-SV will be complex to manage (say 40 UE manufacturers, 10 models each, 5 software versions per model gives 2000 entries, all with potential different treating). Not all versions and updates will be visible for network vendors and operators until after commercial launch.

4.3.1 Summary of Advantages

1. No changes are required to the UE to provide the smooth handling of early mobiles.
2. Offers a method to provide special handling at many different granularities (single mobile software build to entire mobile population).

4.3.2 Summary of Disadvantages

1. Changes are required to the UTRAN to provide the smooth handling of early mobiles.
2. UTRAN vendor can hide special behaviour designed for commercial advantage.
3. Additional database is required in RNC to map from IMEI-SV to fault handling.
4. Change required to CN to provide the smooth handling of early mobiles.
