

Agenda Item: 7.3.2
Source: Motorola, Qualcomm, NEC, Panasonic, etc
Title: Releasing RRC Connection when emergency camping
Document for: Discussion

1 Introduction

At RAN#20, CR numbers 1988, 1989 and 1990 were agreed to 25.331 releases 99, 4 and 5 respectively. The CRs for all three releases permitted the UE to either release or maintain the RRC connection when out of coverage and emergency camping on a forbidden PLMN.

RAN2 has technically endorsed CR 2034 to 25.331 release 5 to propose a change that mandates that UE maintains the RRC connection when out of coverage and emergency camping on a forbidden PLMN. The final decision regarding this CR is to be made by RAN plenary.

2 Discussion

When deciding whether this change request is essential for release 5 the following points need to be considered:

1. Due to the need to handle legacy mobiles from at least release 99 and release 4, networks will always need to be capable of handling mobiles that do not release the RRC connection when they emergency camp on a cell of a forbidden PLMN. When the UE returns from emergency camping on the forbidden PLMN to the registered PLMN it is permitted to perform a Routing Area Update which will resolve the UE-UTRAN desynchronisation but it is also possible that not all UEs will perform the RAU and networks will need to be able to handle both cases.
2. In addition to the release of the RRC connection when emergency camping on a cell of a forbidden PLMN, the specifications contain many other scenarios when the RRC connection can be released by the UE without the UTRAN being aware, although it is accepted that these cases may be less likely depending on the stability and load of the network. Note that for these cases a RAU is not performed and so alternative means is needed to resolve the UE-UTRAN desynchronisation, for example 'double' paging as described in 23.060. The fact that these cases exist also implies that networks will always need to be capable of handling them.
3. As networks will always need to be able to handle cases when the RRC connection is released by the UE, the only benefit of mandating this behaviour in release 5 is if it is believed that some reduction in the signalling load can be achieved due to the reduction of Routing Area Update traffic when UEs return to the registered PLMN. We do not consider the benefits in signalling load are sufficient to justify the additional complexity imposed on the mobiles by mandating this behaviour.
4. UMTS coverage should increase rapidly over the next few years and as it does so the situations where the UE releases the RRC connection due to emergency camping should become much less likely. This in itself will help to reduce any load caused by RAUs if this

is seen to be an issue, and brings into question the benefits of introducing the CR for release 5.

5. The release 5 specifications introduce HSDPA and IMS and are now reaching a level of stability where development of HSDPA and IMS capable terminals can begin. If the extra functionality of maintaining the RRC connection is mandated in release 5 then this could impose extra delay to the development schedule of these terminals for a doubtful benefit.

3 Proposal

Given the points raised above, it is our proposal that the change request to release 5 should not be approved.