Title: Essential R'99 CR Handling
Source: 3

1. Introduction

In the following we consider some specific CRs, in which we intend to highlight just how 'significant' the changes are on a UE or UTRAN implementation within R'99.

In performing this activity we drew the criteria for assessment from TSG RAN#16 in Marco Island, FL, USA, on the 4th – 7th June 2002, where the following document was agreed.

RP-020448   Guidance for R'99 CRs for TSG-RAN WGs (Chairman)
Decision: The document was noted. The proposal was approved.

Within this document the following conditions were identified to ensure consistent behaviour on handling CRs between the RAN groups.

Before a CR can be considered as essential for Release'99 the following questions shall be considered:

-      Is the correction needed because the system cannot function correctly without this correction? If the answer is no then the CR is not essential for Release'99.

-      If the answer to the previous question is yes then how often this will happen and how serious are the consequence on the system? If the answer to the previous question is rarely or there is little consequences then the CR is not essential for Release'99 and then Improvement can be proposed but for Release 5. Otherwise the CR can be considered as essential and brought to the plenary of 3GPP TSG RAN as essential for approval.

2. Discussion

When considering these conditions, we have reviewed a number of RAN CRs being proposed for this meeting and have highlighted a few possible candidates which do not meet these conditions and as such we believe should be rejected as R'99 changes, and rather accepted as guidance for later releases.

2.1. R3-031793   25.413 CR   631 Correction of RAB Release Request Inter-working

This text within this CR proposes the change of a 'may decide to' to a 'should'. It is clear that this has no requirement on the CN, which is the intended entity to be affected by this change. It still remains as the result of this clarification that the CN 'can' decide not to do this. It clearly is the consensus that the CN functionality when it has decided to release the Iu relies with the CN. Note, it is clearly specified in the preceding paragraph that the responsibility for making the decision for Iu release anyway already lies with the CN.

To have this change in R'99 has NO real impact on any UTRAN behaviour and is therefore considered as non-essential. If some companies really feel that any change is required then in our opinion a clarification could possibly be agreed in Rel-5 or even Rel-6, but most certainly this does not warrant an essential R'99 change.

The other changes proposed in this CR add even less, and can be considered as editorial amendments to the text in this case, where the following highlighted text is added,

> Upon reception of the RAB RELEASE REQUEST message, the CN should normally initiate the appropriate release procedure for the identified RABs in the RAB RELEASE REQUEST message as defined below. It is up to the CN to decide how to react to the request.

2.2. R2-032673   25.331 CR 2119rev2 Traffic Volume Measurement Validity

In TS25.331 section 8.4.1.6.6 it clearly states that upon UE transition to CELL_FACH/CELL_PCH/URA_PCH state if a measurement identity exists which does NOT have validity in CELL_FACH/CELL_PCH/URA_PCH state which may have been received via a MEASUREMENT CONTROL message then the UE should store any corresponding (ie the same value) measurement identity available via the SIBs 11/12, if they exist. Note no inferred measurement validity exists for this 'replacement' process of the identical measurement identity.

This CR adds a note for the general case of what to do for duplicate measurement identities when received in a MEASUREMENT CONTROL message in CELL_FACH/CELL_PCH/URA_PCH state. This will only help UTRAN implementations determine how to handle a TVM measurement control using identical measurement identities with the validity of cell_DCH during state transitions. The note suggests the UE behaviour that 'may' be followed, and ultimately identifies that this is anyway defined in the subsequent part of the specification where the exact handling of the TVM is specified in case of state transitions. Therefore this does nothing but clarify behaviour, which is well defined elsewhere in this version of the specification, and therefore in our opinion is not essential.

2.3. R2-032286   CR   2097 to 25.331   Ensuring C-RNTI is cleared in Cell_DCH

In TS25.301 it is clearly defined that the "C-RNTI for a UE is allocated by a controlling RNC and it is unique within one cell controlled by the allocating CRNC". Therefore in our opinion it is quite clear that in all cases where a UTRAN sends a UE to cell_FACH, from cell_DCH, it must assign a C-RNTI. The UTRAN will not maintain a tracking between U-RNTI and C-RNTI for UEs it has previously assigned a C-RNTI, even if it then subsequently moves the UE to cell_DCH. This is due to the high probability for the UE to revert to idle or have changed cell when terminating the cell_DCH call. This then also enables the CRNC to re-assign the C-RNTI once the original cell_FACH UE has moved to cell_DCH.

Whilst it may not be evident that in this specific case the UE should delete the C-RNTI when moving to cell_DCH from cell_FACH, it is somewhat immaterial. That is due to the fact that the UTRAN will always set a new C-RNTI when the cell_DCH UE reverts to cell_FACH or the resulting CELL UPDATE CONFIRM leaves the UE in cell_FACH.

This network functionality is clear from the cover sheet, which identifies this as the already specified test procedure behaviour. In fact no impact is identified from the impact analysis for not supporting this change, therefore we believe this is not an essential change, rather a general clarification that should be made to rel-5 (or rel-6). To help explain what happens in the extremely unlikely case of a poor UTRAN implementation not according to the principle outline above.

2.4. R2-032719   Agreed CR 2104rev1 to 25.331"Correction to Redirection procedure at RRC Connection Setup"

This CR clarifies that in the case of making an RRC CONNECTION REQUEST the UTRAN may deny the request but use a re-direct IE to send the UE to another carrier or RAT. It is clear that in attempting an initial access on the selected cell for the first identified RRC CONNECTION REQUEST, the PLMN is the NAS PLMN determined from the initial NAS selection criteria. This is the same selected PLMN/ePLMN identified and used throughout the AS cell selection/reselection procedures within TS25.304 and referenced throughout TS25.331. It is also understood that the redirection procedure is a function of load control in that the UTRAN determines to send the UE to another carrier or Access Technology, rather than permit the establishment of an RRC connection on the originally selected cell.

With this understanding it is unclear as to why the UE when receiving this re-direction info would select any other network other than the selected PLMN or ePLMN.

If the UE was to try and select another PLMN, as part of these procedures it is clear that it will try to select a suitable (or acceptable) cell, and then the PLMN associated with this cell would have to be forwarded to the NAS layer. As a result of this activity the NAS will (assuming the coverage is still similar) ultimately select the same cell as originally tried for the first RRC CONNECTION REQUEST. Then ultimately this would lead the UE to would wait for the "wait time as identified in the re-direction procedure before making the RRC CONNECTION REQUEST.

It is clear that this specification is only appropriate for AS procedures and as such will not unilaterally decide on a new NAS selection of another PLMN that does not conform to the original PLMN/ePLMN.

3. Proposal

We ask that as a minimum the CRs highlighted be rejected as R'99 changes on the grounds of their non-essential status and that only the Rel-5 changes are agreed as editorial clarifications. We also ask the TSG RAN to consider the conditions previously identified and already agreed by the group in June 2002 when accepting the agreed WG R'99 changes at this meeting.

We also ask that the WGs continue their good work on evaluating Change proposals during their meetings to determine the essentialness of corrections and robustness of the R'99 UTRAN specifications. We hope the WGs continue the use of these previously identified conditions to aid the agreement process for determining the essentialness of the proposed CRs to R'99 specifications.