
TSG-RAN Working Group 4
Bath, December 1999

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Source: TSG-RAN WG4

Title: LS on handover signalling robustness

To: TSG-SA4, TSG RAN2, TSG T1

Cc: TSG-RAN, TSG SA

The AMR speech codec is designed to operate under different radio conditions, including radio conditions that are severely interfered.

To ensure adequate AMR performance, the signalling channels should then also work under these radio conditions.

RAN WG4 has discussed a test case ensuring that the handover signalling being more robust than the traffic channel at minimum QoS in "Requirements for Support of RRM" TS 25.133.

A time delay <0.5 s on the handover signalling from "Active set update message sent to UE" to "Handover completed" (UE is using a new radio link for power control, see R4-99804) is proposed under more severe radio conditions than an AMR codec can cope with (MOS <3), see R4-99873.

TSG SA4 is asked to comment on the required robustness of the signalling required when the UE is operating in the worst radio conditions it is designed to operate in and on whether the 0.5 s is sufficient.

RAN WG2 is asked to clarify whether the protocol is designed to work under these radio conditions, and whether it fulfils the above 0.5 s requirement.

Both groups are asked to inform RAN WG4 whether additional requirements are needed in the RAN4 specifications.

T1 is requested to include a test in their specification to verify correct performance.

Agenda Item: 8.6

Source: Telia AB

Title: **Updating 25.133 v2.2.0 "Requirements for Support of RRM":
HO_COMMAND-HO_COMPLETE delay at AMR codec muted**

Document for: Discussion & Decision

1. INTRODUCTION

25.133 v2.2.0 "Requirements for Support of RRM" emanating from 25.103 has been updated from agreed inputs at RAN/WG4 #8. HO signalling delay specification is TBD.

2. BACKGROUND

Telia has earlier put requirements on handover delay times based on cell overlap constraints to the RTT concept evaluation as well as to the ETSI/SMG2 as CRs 05.08, see R4-99468 & R4-99712. See also R4rrm04 from AH02.

HO_COMMAND-HO_COMPLETE signalling delay being robust to work properly down to E_c/I_0 at which the AMR codec is muted is one of the escape mechanisms to avoid "dead zones" created by BS_ACLR from competing networks or UE receiver intermodulation by uncoordinated BS siting.

3. SUGGESTION

A requirement for HO_COMMAND-HO_COMPLETE signalling delay should be specified as max 10% of the agreed cell overlap, i.e. 0.5 s similar to GSM at FER < 10%. The E_c/I_0 for testing should be lower than what is needed for muting of AMR-FR with the strongest channel coding. According to GSM TR 06.75 (B-99-262 on the ETSI SMG Server) the AMR-FR MOS=3 limit corresponds to C/I = 2 dB per GSM slot at RF input. The channel model should be rural 120 km/h as being most critical.

4. OBSERVATION

HO_COMMAND-HO_COMPLETE signalling delay limit of 0.5 s should also include 2G (GSM).

Note: If the closed loop power control is dropped, the UE output power should shut down after 0.5 s from dropping to avoid excessive interference in its own and adjacent network's uplink.

REFERENCE

TS 25.133 V2.2.0 (1999-11)]