3GPP TSG CN Meeting #27 **NP-050119**
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Source: **Nokia, T-Mobile International, Siemens**

Title: **Network initiated SCUDIF in Rel-6**

Agenda item: **9.21**

Document for: **Discussion / Decision**

Introduction

The network initiated SCUDIF procedures have been introduced for 3GPP Rel-6. A common view on the procedures for downgrading has been reached and the user aspects related to the network initiated upgrade procedures have been discussed in more detail.

This document presents some additional user aspects, which should be considered while discussing the level of the optimization in Rel-6 upgrade procedures.

Discussion

The work has been based on the requirements in [1], which is under the responsibility of TSG SA WG1. The requirements for Rel-6 have been focusing to maintain the ongoing call by downgrading the current call mode from CS video to speech in decreasing radio conditions and by upgrading back to CS video as soon as there would be resources available again for the CS video. To avoid any inconvenient upgrades back to CS video, the users shall always be asked before the switch back to video.

In TSG CN WG3 #35 some additional requirements were proposed for the Rel-6 SCUDIF in [2]. The requirement about users to be asked before the network changes back to multimedia is already included in [1] from Rel-5 onwards. The additional requirements, that the speech connection should not be broken while the user confirmation for the upgrade is checked and that a user should be able to deny the upgrade without the other part knowing the reason for the upgrade failure, could be seen as justified additions from end user perspective, if those requirements can be fulfilled without major added complexity in the procedures for SCUDIF Rel-6.

One important issue, which has not been discussed very much so far, is that the network initiated service change in Rel-6 should work with Rel-5 SCUDIF terminals. This approach is preferable and it also seems to be one of the working principles for the agreed downgrade procedure.

In case network initiated SCUDIF requires new signaling procedures for Rel-6 terminals, it would be necessary to inform the network at the beginning of the call and sometimes also during the call (e.g. during relocation), whether the terminal is based on Rel-5 or Rel-6, in order to avoid sending Rel-6 messages to the Rel-5 SCUDIF terminals.

For the users it would be very inconvenient if there were major differences in how the CS video services work for Rel-5 and Rel-6 SCUDIF terminals. Such a situation should be avoided, where only Rel-6 SCUDIF terminal users can be offered and enjoy network-initiated upgrades back to CS video.

It is also assumed that operators using network initiated SCUDIF would prefer a Rel-6 solution, which works for all SCUDIF terminals.

Figure 1 describes one alternative solution for network-initiated SCUDIF, which avoids unnecessary interruptions and still maintains the principle that the network initiated service change procedures should work with Rel-5 based SCUDIF terminals.

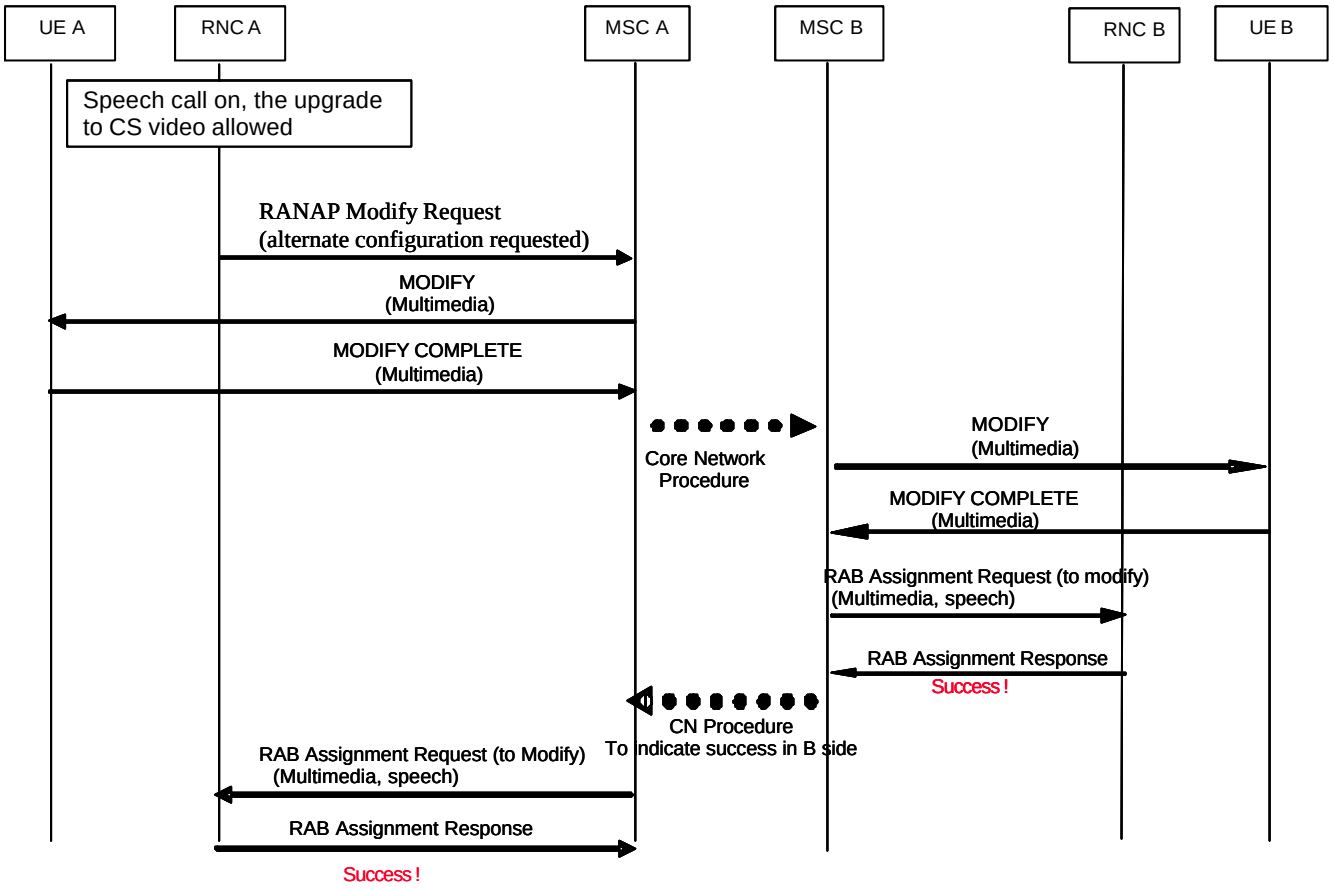

Figure 1: Network initiated service change from speech to CS video, successful case

In this procedure it is assumed that the ongoing call mode is kept active during the MODIFY-procedure, so that the speech connection can be maintained while the users are asked for acceptance to upgrade the call back to CS video. The new call mode is available after the RAB modifications, i.e. the Radio Bearer reconfiguration, is completed on both sides.

The main change to the current procedures is that the user's acceptance on the side where upgrading is started (can be subscriber A or B) is checked before the procedures between the core networks are initiated. Secondly the RAB modification on the side where upgrading is started is initiated only after the procedures have been successfully completed on the terminating side. With these two optimisations the speech connection is not interrupted in case user A does not accept the upgrade proposal. An additional benefit is that the RAB modifications on the A side can be avoided in case the RAB modification in RNC B fails.

A similar approach to avoid the interruption in the ongoing speech connection, while asking the user acceptance for the upgrade, has been presented in [3].

Proposal

This document presents the end user aspect of SCUDIF, that all users with SCUDIF capable terminals should be able to get similar SCUDIF services. It is also a strong operator interest to have only one SCUDIF terminal release, which would cover all the major SCUDIF needs.

The signaling flow in the Discussion clause above presents a possible solution as an example how the current Rel-5 signaling flows could be optimized for network-initiated upgrade for Rel-6 and still support the Rel-5 SCUDIF terminals.

It is proposed to allow and request the TSG CN WG3 to complete their work for Rel-6 SCUDIF by June 2005 and to encourage the working group to look for a reasonable solution, in order to avoid unnecessary complexity and still to include support for Rel-5 SCUDIF terminals.

References

[1] 3GPP TS 22.101, “Service aspects; Service principles”

[2] N3-050096, “Support of Service Change in SCUDIF”, LM Ericsson, 3GPP TSG-CN WG3#35, Sydney, Australia, 14-18 February 2005.

[3] N3-050123, “Service Change at Loss and Recovery of Coverage”, Siemens, 3GPP TSG-CN WG3#35, Sydney, Australia, 14-18 February 2005.