3GPP TSG_CN#6/
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TSG_CN#6 NP-99529

S2#10, 29.11.-3.12.1999, Abiko, Japan S2-99F52_accepted_by_email

Source: S2

To: TSG CN
CC: TSG SA, WG N2

Liaison Statement concerning Transcoder Free operation

Related to:

1. not numbered: "LS on TRAU issues", agreed on S2 email list 20.10.1999, revision of S2-99 A02 from 3GPP TSG SA WG2 #8, September 13-17, 1999 Bonn, Germany; attached.

S2 highlights some open issues about location and control of speech codec in an outgoing liaison statement destined to N2 on the issue of transcoder free operation (or TRAU issues).

Unfortunately, due to misunderstanding in S2 it seems that the liaison statement did not arrive as an input paper to N2.

We therefore would like to highlight the open issues to TSG CN and ask them to take them into consideration when discussing the submission of work not yet completed in R99.

3GPP TSG SA WG2 #8 **S2-99 A02**
September 13-17, 1999
Bonn, Germany

Proposed Liaison statement

To: TSG N2

From: TSG S2

Cc: S4, R1, R3, N1

Title: LS on location and control of speech codec

S2 thanks N2 for their LS on 'on tandem-free and out of band transcoder control' (Tdoc N2-99976). Taking into consideration this LS and its appendix, SA2 believe that there are still some open issues to be clarified by N2. The following paragraphs explain more in detail the current situation.

SA2 started a report on 'Location and Control at the UMTS Core Network Border'. The purpose of the study is to describe the implications of transcoding at the border of the UMTS core network, the output network configuration shall be specified afterwards following a basic set of requirements. These requirements shall cover at least the following points:

- Location of transcoders within the UMTS core network to achieve efficient usage of the core network transmission resources
- Interaction with TFO
- Control of transcoders within the UMTS core network to achieve efficient usage of the core network transmission resources
- Interaction with supplementary services
- Interaction with network bearer control protocols
- Interactions as a result of GSM-UMTS handover (and vice versa)
- Interaction with call control (;e.g., for mobile terminating calls)
- Other benefits (including transcoder free operation for mobile to mobile calls)
- Assessment of expected transmission cost gains

The solution should be applicable independently of the core network transmission technology.

The decision to choose an in-band or out-band protocol solution to control the transcoders for R99 shall be consistent with the bullet items listed above.

The discussion on adopting either an in-band or out-band solution has to be spilt into two different phases of a call:

1. Negotiation of codecs during call setup.
2. Renegotiation of codecs and codec mode during active call due to e.g. changed radio conditions and handover.

. Within SA2 it was concluded that for a codec mode change during an active call an inband solution will be adopted. This was agreed as the only feasible mechanism to handle synchronisation requirements of signaling and data streams.

For the end-to-end negotiation of the codecs during call setup no decision has been taken within SA2 yet. N2 has created the work item "Technical Report on Out of band transcoder control". In order to ensure consistency among the work of the relevant WGs, SA2 likes N2 to clarify the following issues on version 1.1.0 of the technical report on Out of band transcoder control:

1. In order to reduce the capacity required within the UMTS network any mechanism – in-band or out-band – has to fulfil the requirement to locate the speech codec anywhere between the serving switches of a call, this means at the edge of the UMTS-network. By that, transmission capacity can be saved within an UMTS-network, even if the transit or terminating network does not provide all necessary capabilities. SA2 likes to have clarification on this issue within the study of N2.
2. An important point is the interworking between GSM and UMTS. SA2 likes to have this considered within the study of N2, too.
3. The study performed within N2 is highly dependent on the schedule of ITU where the basis of this work item will be provided. Some members within SA2 raise the concern on the finalisation of the work item within ITU in order to have a stable basis for UMTS release 99.
4. The choice of an in-band or out-of-band protocol solution has some impacts on the work of other WGs (e.g. SA4). SA2 asks N2 to clarify possible impacts and to notify the relevant groups .