3GPP TSG-S4#14 meeting
November 27 – December 1, 2000, Bath, UK

Tdoc S4 (00)0700R

Source:	**3GPP TSG SA WG4**
Title:	**Liaison to 3GPP TSG RAN WG1 and 3GPP TSG RAN WG2 on the Efficiency of Packet-Switched ConversationalMultimedia Service**
Document for:	**Approval**
Agenda Item:	**11.5**

Introduction:

3GPP TSG SA WG4 set up a new work item called "Multimedia Codecs and Protocols for Conversational Packet-Switched Services" that is targeting Rel4 and Rel5.

3G PS multimedia terminals provide real-time video, audio, or data, in any combination, including none, over 3GPP IM CN Subsystem. Terminals are based on IETF defined multimedia protocols SIP, SDP, RTP and RTCP. The media control is based on a declaration of terminal media capability sets in the SDP part of the appropriate SIP messages. The terminal shall declare the mandatory and any optional media streams using the codec specific MIME types in the associated SDP syntax. The MIME types for the mandatory codecs shall be according to the corresponding types registered by IANA.

The packetisation of the media streams into RTP is defined by RTP payload formats specified by IETF. The RTP packets will be transmitted via UDP and IP. Relation of application level SDP signaling and radio access bearer assignment, and any SDP QoS attribute mapping for WCDMA and GERAN channels is specified by TSG-SA WG2 and TSG-CN WG.

Example of Efficiency Constraints using IETF's AMR RTP Payload Format

The AMR speech codec specifies class A, B and C-bits for each speech frame according to its importance. Class A bits are most and class C bits least important. Therefore an unequal error-protection will be used in CS domain. However the current AMR RTP payload format does not distinguish between these classes. This might lead to the concept that the assignment of radio bearer resources may be driven by QoS requirement of the class A bits. Therefore class B and C bits may be "over-protected" and radio resources would be wasted. Note that this is only an example and this efficiency constraint applies to many other media types transported in RTP payload formats.

Conclusion

Taking into account that all media bits are transported by media specific RTP payload formats, radio resource will be wasted, because all bits will be protected by the highest QoS set, as required by the most sensitive bits.

If this assumption is true, SA4 would like to get information from RAN1 and RAN2 to understand:

(1) Has the above mentioned efficiency constraint been considered by RAN1 and/or RAN2 and are there efficient solutions for the transportation of such RTP encapsulated media available in Rel4?

(2) If no solution is available for Rel4, will it be considered for Rel5?

(3) In case of a PS AMR conversational speech service, what is the expected overhead of using the same QoS requirement for all AMR bits?

SA4 thanks RAN1 and RAN2 for their cooperation and is looking forward to hearing from RAN1 and RAN2 soon.