



3RD GENERATION
PARTNERSHIP
PROJECT 2
"3GPP2"

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3GPP SA4
Jarvinen, Kari, Chairman
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Re: "Response to S4-040857 on speech codecs for PoC"

Dear 3GPP SA4;

3GPP2 TSG-C thanks SA4 for including 3GPP2 in your LS to OMA POC WG on PoC codecs. We welcome the opportunity to discuss PoC related issues with 3GPP SA4 and ensure transcoder free interworking. In this response, we would like to update SA4 on the status of speech codecs for various services in 3GPP2 and respond to SA4's suggestion of harmonizing speech codecs for PoC in 3GPP and 3GPP2.

OMA Question to 3GPP and 3GPP2 (S4-040391) : If one or both organizations specify two or more codecs in order to do transcoding free interworking, what codec do you think should be suitable to be the "common denominator" and do you think that this method be advantageous over transcoding.

SA4 Response to OMA POC WG and Cc to 3GPP2 (S4-040857):

SA4 considers transcoding free interworking across 3GPP and 3GPP2 networks an important aspect to avoid transcoding equipment at the network interconnections and to keep the service quality at a maximum possible level.

It seems feasible to SA4 to use the AMR and/or AMR-WB as a common codecs for PoC in 3GPP and 3GPP2, as these codecs are already agreed as options in MMS between 3GPP and 3GPP2.

SA4 further would like to point out that AMR-WB is in addition approved by ITU-T and provides interoperability modes with VMR-WB specified in 3GPP2.

The common usage of AMR or AMR-WB would allow to avoid transcoding, without undue additional terminal implementation costs, when these Codecs are already implemented due to other services.

3GPP2 agrees with SA4 on the importance of transcoder-free operations. As mentioned in our liaison to OMA and copied to 3GPP SA4 (S4-040613), it requires significant cooperation between 3GPP and 3GPP2 to arrive at common set of codecs and realize transcoder free interworking across 3GPP and 3GPP2 networks. We welcome 3GPP SA4 to join us in this collaboration.

Here, we provide a brief status of 3GPP codecs in 3GPP2 multimedia services.

1. AMR-WB is not adopted for any services in 3GPP2. 3GPP2 has defined VMR-WB for wideband speech services in 3GPP2 [3, 4]. Note that VMR-WB is interoperable with AMR-WB codec mode 2 at 12.65 kbps. TSG-C recognizes that additional protocol support may be required to provide “transcoder free” interoperability between AMR-WB and VMR-WB. We look forward to working with 3GPP SA4 towards this objective.
2. AMR was adopted as one of the speech codecs for 3GPP2 MMS (C.S0045-0) to provide for transcoder free interworking with 3GPP MMS. While this enables 3GPP2 terminals that support AMR to receive MMS messages with AMR content from GSM/UMTS without transcoding, transcoders in the network are still required for messages with non-AMR speech content bound for 3GPP terminals, unless 3GPP adopts one of the other 3GPP2 speech codecs for MMS.
3. As communicated in 3GPP2 LS to OMA (S4-040613), 3GPP2 has already adopted EVRC for PoC services. As pointed out in the previous bullet, it is not adequate for 3GPP2 to adopt AMR for PoC services to eliminate transcoders in the network and ensure transcoder free interworking.

In order to minimize transcoding for PoC services, 3GPP2 proposes that:

- a) 3GPP to consider adoption of EVRC [1, 2] as an optional codec for 3GPP PoC services.
- b) 3GPP2 to consider adoption of AMR as an optional codec for 3GPP2 PoC services.

Actions:

- 3GPP to inform 3GPP2 their decision on EVRC as an optional PoC codec in 3GPP.

Regards,



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References

- [1] 3GPP2 C.S0014-A, *Enhanced Variable Rate Codec, Speech Service Option 3 for Wideband Spread Spectrum Digital Systems*
- [2] 3GPP2 C.S0018, *Minimum Performance Specification for the Enhanced Variable Rate Codec, Speech Service Option 3 for Spread Spectrum Digital Systems*
- [3] 3GPP2 C.S0052-0, *Source-Controlled Variable-Rate Multimode Wideband Speech Codec (VMR-WB) Service Option 62 for Spread Spectrum Systems*
- [4] 3GPP2 C.S0053, *Minimum Performance Specification for the Source-Controlled Variable-Rate Multimode Wideband Speech Codec (VMR-WB), Service Option 62 for Spread Spectrum Systems*

The above references are available at

http://www.3gpp2.org/Public_html/specs/index.cfm#tsgc