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| **CONTRIBUTION** | | |
| **Source:** | Volkswagen AG, Technische Universität Braunschweig | |
| **Title:** | Proposal of a Noise Distortion Measure | |

**Update of the Noise Distortion Measure Proposal**

**(Signal Enhancement Subsystem)**

On the last FG CarCom meeting on 12.-13.04.2011 in Kyoto, we presented an improved objective noise distortion measure focussing on musical tones, which can be applied to both wideband and narrowband noise distortion measurement. The group has come to an agreement to include this noise distortion measure as a diagnostic tool into an Annex of the FG CarCom draft “SubSystem Requirements for Automotive Speech Services”. In addition, it was recommended by the group to update the two QoS tables for wideband and narrowband systems in the Annex text by adding a column to each table containing the subjective descriptions associated with each QoS class. We have now updated our Annex text according to this recommendation.

Four documents are attached:

At first, the updated Annex text “NoiseDistortion\_Annex\_VolkswagenTUBS\_V3.0.docx”. Secondly, “ITG\_2012.pdf” is now the paper version accepted for publication describing the algorithm. The other two documents are the same as in our last contribution and are added for information only.

* “NoiseDistortion\_Annex\_VolkswagenTUBS\_V3.0.docx” is the updated Annex text as proposed for inclusion into the Draft of the “SubSystem Requirements for Automotive Speech Services”.
* “ITG\_2012.pdf” is a paper accepted for publication on the ITG|VDE Conference on Speech Communication to be held in Braunschweig, Germany, September 26-28, 2012. It describes the proposed noise distortion measures *for wideband signals* in more detail.
* “DAGA\_2012.pdf” has been presented and discussed already in an earlier FG CarCom contribution. It has been published on DAGA 2012, Darmstadt, Germany in March 2012, describes the proposed noise distortion measures *for narrowband signals* in more detail.
* “LimitsMappingFunction\_V2.0.pdf” has been presented and discussed already in an earlier CarCom contribution. It describes the procedure about how we obtained the values of the noise distortion measure for classification into quality of service (QoS) categories. It also contains two mapping functions of the raw objective noise distortion measure to the absolute category rating (ACR) of the perceived amount of musical tones for wideband and narrowband signals.

Attachments:

New: 

New (wideband): 

Old (narrowband): 

Old (narrowband and wideband): 

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