

Recommendation

ITU-T G.113 (2007) Amd. 3 (01/2023)

SERIES G: Transmission systems and media, digital systems and networks

International telephone connections and circuits – General Recommendations on the transmission quality for an entire international telephone connection

Transmission impairments due to speech processing

Amendment 3: Revised Appendix V – Provisional planning values for the fullband equipment impairment factor, and the fullband packet loss robustness factor and the fullband burstiness robustness factor



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Transmission impairments due to speech processing

Amendment 3

Revised Appendix V – Provisional planning values for the fullband equipment impairment factor, and the fullband packet loss robustness factor and the fullband burstiness robustness factor

Summary

Amendment 3 to Recommendation ITU-T G.113 revises Appendix V with up-to-date information on available values of fullband equipment impairment factors and packet loss robustness factors.

History

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9.3	ITU-T G.113 (2007) Amd. 3	2023-01-26	12	11.1002/1000/15458

* To access the Recommendation, type the URL <http://handle.itu.int/> in the address field of your web browser, followed by the Recommendation's unique ID. For example, <http://handle.itu.int/11.1002/1000/11830-en>.

FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

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Revised Appendix V – Provisional planning values for the fullband equipment impairment factor, and the fullband packet loss robustness factor and the fullband burstiness robustness factor

1) *Appendix V*

Revise Appendix V as follows:

Appendix V

Provisional planning values for the fullband equipment impairment factor, ~~and~~ the fullband packet loss robustness factor and the fullband burstiness robustness factor

(This appendix does not form an integral part of this Recommendation.)

This appendix provides up-to-date information on available values of fullband equipment impairment factors, $I_{e,fb}$, ~~and~~ packet loss robustness factors, $B_{pl,fb}$, and burstiness robustness factors, $B_{rf,fb}$. It is intended to be updated regularly. These values are to be used on an extended transmission rating scale (R -scale) as it is defined in [b-ITU-T G.107.2]. It should be noted that I_e, eff, fb values refer to a codec at a specified bitrate. In case of variable bitrate codecs, it should be specified whether the corresponding value has been obtained with a constant or variable bitrate setting, as this may have an influence on the impairment under transmission error conditions.

See Table V.1 for the information on the fullband equipment factor, and Table V.2 for the information on the fullband packet loss robustness factor and the fullband burstiness robustness factor.

Table V.1 – Provisional planning values for the fullband equipment impairment factor, $I_{e,fb}$, for fullband codecs when a diotic sound presentation is assumed

Codec type	Reference	Operating rate [kbit/s]	$I_{e,fb}$ value (diotic)
ACELP / MDCT	EVS (SWB mode) [1]	48	10.2
		32	8.7
		24.4	7.2
		16.4	10.8
		13.2	17.1
		9.6	22.7

Provisional planning values for the fullband equipment impairment factor, $I_{e,fb}$, for wideband codecs (downward-compatible to the wideband E-model) can be derived based on the extension of the R -scale by the following procedure.

$I_{e,fb}$ values for WB codecs correspond to the sum of the I_e value defined for the WB case and the difference between the FB and the WB "direct" channel, the latter having a position of 129 on the R -scale:

$$I_{e,fb} = \sum_{codecs} I_{e,wb} + (148 - 129) = \sum_{codecs} I_{e,wb} + 19$$

Table V.2 – Provisional planning values for the fullband packet loss robustness factor, $B_{pl,fb}$, and fullband burstiness robustness factor, $B_{rf,fb}$, for fullband codecs when a diotic sound presentation is assumed

Codec type	Reference	Operating rate [kbit/s]	$I_{e,fb}$ value (diotic)	$B_{pl,fb}$ value (diotic)	<u>$B_{rf,fb}$ value (diotic)</u>
ACELP/ MDCT	EVS (SWB mode) [b-3GPP TS 26.445]	48	10.2	9.6	(Note 1)
		32	8.7	9.3	(Note 1)
		24.4	7.2	11.4	(Note 1)
		16.4	10.8	10.3	(Note 1)
		13.2	17.1	11.7	3.28
		9.6	22.7	13	(Note 1)
NOTE 1 – For further study					

2) Bibliography

Add the following references to the Bibliography:

[b-ITU-T G.107.2] Recommendation ITU-T G.107.2 (2019), *Fullband E-model*.

[b-3GPP TS 26.445] 3GPP Spec TS 26.445 (2019), *Codec for Enhanced Voice Services (EVS); Detailed Algorithmic Description*.

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