

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

J.248

(06/2008)

SERIES J: CABLE NETWORKS AND TRANSMISSION
OF TELEVISION, SOUND PROGRAMME AND OTHER
MULTIMEDIA SIGNALS

Measurement of the quality of service

Requirements for operational monitoring of video-to-audio delay in the distribution of television programs

Recommendation ITU-T J.248

Recommendation ITU-T J.248

Requirements for operational monitoring of video-to-audio delay in the distribution of television programs

Summary

Since the advent of digital television networks for program transmission, and the introduction of high-efficiency bit-rate reduction (BRR) devices and of other types of digital image processing devices, audiences sometimes complain that the television programs they receive are out of "lip-sync". Lip-sync errors are generally due to the fact that audio and video are separately processed in the television chain, and processing delays are typically different for video than for the accompanying audio signal.

Recommendation ITU-T J.248 analyses the problem and provides guidance on means to measure lip-sync errors in the context of operational monitoring in television programme transmission chains.

Source

Recommendation ITU-T J.248 was approved on 13 June 2008 by ITU-T Study Group 9 (2005-2008) under Recommendation ITU-T A.8 procedure.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

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

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure e.g., interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at <http://www.itu.int/ITU-T/ipr/>.

© ITU 2009

All rights reserved. No part of this publication may be reproduced, by any means whatsoever, without the prior written permission of ITU.

CONTENTS

Page

1	Scope	1
2	References.....	1
3	Definitions	1
3.1	Terms defined elsewhere	1
3.2	Terms defined in this Recommendation.....	1
4	Abbreviations and acronyms	2
5	Conventions	2
6	The reference television chain	2
6.1	Television program production	2
6.2	Primary distribution.....	2
6.3	Secondary distribution.....	2
6.4	Presentation	2
7	Main causes for loss of lip-sync	2
8	User requirements for operational monitoring	4
8.1	Operational aspect	4
8.2	Measurement aspect	4
	Appendix I – Perceptual limits for lip-sync errors.....	5
	Appendix II – Detection and adjustment of lip-sync errors.....	6
II.1	Perceptual verification of lip-sync along television chains.....	6
II.2	Maintaining lip-sync along the television chain – The ideal solution.....	6
II.3	Maintaining lip-sync along the television chain – A practical approximate solution	6