

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

J.343.3

(11/2014)

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

Measurement of the quality of service - Part 3

**Hybrid-RRe objective perceptual video quality
measurement for HDTV and multimedia
IP-based video services in the presence of a
reduced reference signal and encrypted
bitstream data**

Recommendation ITU-T J.343.3

ITU-T

Recommendation ITU-T J.343.3

Hybrid-RRe objective perceptual video quality measurement for HDTV and multimedia IP-based video services in the presence of a reduced reference signal and encrypted bitstream data

Summary

Recommendation ITU-T J.343.3 provides hybrid reduced-reference encrypted (Hybrid-RRe) objective perceptual video quality measurement methods for HDTV and multimedia when a reduced reference signal and encrypted bitstream data are available. The following are example applications that can use this Recommendation:

- potentially real-time, in-service quality monitoring at the headend;
- video television streams over cable/IPTV networks including those transmitted over the Internet using Internet protocol;
- video quality monitoring at the receiver when a reduced reference signal and encrypted bitstream data are available;
- video quality monitoring at measurement nodes located between point of transmission and point of reception when a reduced reference signal and encrypted bitstream data are available;
- quality measurement for monitoring of a transmission system that utilizes video compression and decompression techniques, either a single pass or a concatenation of such techniques;
- lab testing of video transmission systems.

This Recommendation includes an electronic attachment containing test vectors, including video sequences, bitstream files and predicted objective model scores.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T J.343.3	2014-11-29	9	11.1002/1000/12318

* 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

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 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 2015

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

Table of Contents

	Page
1 Scope.....	1
1.1 Applications.....	2
1.2 Limitations.....	2
2 References.....	3
3 Definitions	3
3.1 Terms defined elsewhere	3
3.2 Terms defined in this Recommendation.....	3
4 Abbreviations and acronyms	3
5 Conventions	4
6 Performance metrics	4
7 Description of the hybrid reduced-reference methodology	4
8 Models	5
Annex A – YHyRRe (Hybrid-RRe model).....	6
A.1 Introduction	6
A.2 Hybrid-RRe VQM computation	6
Bibliography.....	10

Electronic attachment: Test vectors, including video sequences, bitstream files and predicted objective model scores.
