

International Telecommunication Union

**ITU-T**

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

**P.1201.2**  
**Corrigendum 1**  
(04/2014)

SERIES P: TERMINALS AND SUBJECTIVE AND  
OBJECTIVE ASSESSMENT METHODS

Models and tools for quality assessment of streamed  
media

---

Parametric non-intrusive assessment of audiovisual  
media streaming quality – Higher resolution  
application area

**Corrigendum 1**

Recommendation ITU-T P.1201.2 (2012) –  
Corrigendum 1

ITU-T



ITU-T P-SERIES RECOMMENDATIONS  
**TERMINALS AND SUBJECTIVE AND OBJECTIVE ASSESSMENT METHODS**

Vocabulary and effects of transmission parameters on customer opinion of transmission quality	Series	P.10
Voice terminal characteristics	Series	P.30
		P.300
Reference systems	Series	P.40
Objective measuring apparatus	Series	P.50
		P.500
Objective electro-acoustical measurements	Series	P.60
Measurements related to speech loudness	Series	P.70
Methods for objective and subjective assessment of speech quality	Series	P.80
		P.800
Audiovisual quality in multimedia services	Series	P.900
Transmission performance and QoS aspects of IP end-points	Series	P.1000
Communications involving vehicles	Series	P.1100
<b>Models and tools for quality assessment of streamed media</b>	<b>Series</b>	<b>P.1200</b>
Telemeeting assessment	Series	P.1300
Statistical analysis, evaluation and reporting guidelines of quality measurements	Series	P.1400
Methods for objective and subjective assessment of quality of services other than voice services	Series	P.1500

*For further details, please refer to the list of ITU-T Recommendations.*

# Recommendation ITU-T P.1201.2

## Parametric non-intrusive assessment of audiovisual media streaming quality – Higher resolution application area

### Corrigendum 1

#### Summary

Corrigendum 1 to Recommendation ITU-T P.1201.2 (2012) provides some corrections.

#### History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T P.1201.2	2012-10-14	12	<a href="http://handle.itu.int/11.1002/1000/11729">11.1002/1000/11729</a>
1.1	ITU-T P.1201.2 (2012) Amd. 1	2013-05-14	12	<a href="http://handle.itu.int/11.1002/1000/11936">11.1002/1000/11936</a>
1.2	ITU-T P.1201.2 (2012) Amd. 2	2013-12-12	12	<a href="http://handle.itu.int/11.1002/1000/12111">11.1002/1000/12111</a>
1.3	ITU-T P.1201.2 (2012) Cor. 1	2014-04-29	12	<a href="http://handle.itu.int/11.1002/1000/12176">11.1002/1000/12176</a>

---

\* 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.

## Recommendation ITU-T P.1201.2

### Parametric non-intrusive assessment of audiovisual media streaming quality – Higher resolution application area

#### 1) Clause 6.3.1.7

- a) *In the scene cut estimation pseudo-code in clause 6.3.1.7, the value of P\_1 should be replaced by 0.70:*

Original text

```
set P_1 = 0.75;  
set P_2 = 1.35;  
set P_3 = 0.65;  
set P_4 = 1.55;
```

Corrected text:

```
set P_1 = 0.70;  
set P_2 = 1.35;  
set P_3 = 0.65;  
set P_4 = 1.55;
```

- b) *In the scene cut estimation pseudo-code in clause 6.3.1.7, a "median" term should be changed to "mean":*

Original text:

```
if (b_prev && Num_b_frames>1)  
{  
set bmean_prev to the median of the b_prev b-frames in the previous GOP;  
set bmean_curr to the mean of the previous b_curr b-frames in the current GOP;  
set I_b = bmean_prev/bmean_curr;  
}
```

Corrected text:

```
if (b_prev && Num_b_frames>1)  
{  
set bmean_prev to the mean of the b_prev b-frames in the previous GOP;  
set bmean_curr to the mean of the previous b_curr b-frames in the current GOP;  
set I_b = bmean_prev/bmean_curr;  
}
```

#### 2) Clause 6.3.1.8

*To address the case of packets stuffed with zeros, add the following text after the paragraph following Equation 2a which reads*

*"Note that the number of GOPs for the first scene includes the first GOP of the first scene.":*

To capture the specific case of many packets stuffed with zero, that is, for instance, when the encoder is not using all available bits, the following condition is added:

$$\mathbf{if} (s_{sci}^I / s_{sci}^P < 1.2) \ \&\& \ (s_{sci}^B / s_{sci}^P > 0.8)$$

$$\mathbf{ContentComplexity} = 0.1$$

where  $s_{sci}^I$ ,  $s_{sci}^P$ , and  $s_{sci}^B$  are the I-, P-, and B-frame sizes averaged over scene  $sci$ .

### 3) Clause 6.4

In clause 6.4, "quality modules", a typo in the fifth line of the MOSfromR function is to be corrected as below:

#### Original text

```
function MOS = MOSfromR(Q)
set MOS_MAX = 4.9;
set MOS_MIN = 1.05;
if (Q > 0 & Q < 100),
MOS = (1+(MOS_MAX-MOS_MIN)/100×Q+Q×(Q-60)×(100-Q)×7.0E-6);
elseif (Q >= 100),
MOS = MOS_MAX;
else
MOS = MOS_MIN;
end
```

#### Corrected text:

```
function MOS = MOSfromR(Q)
set MOS_MAX = 4.9;
set MOS_MIN = 1.05;
if (Q > 0 & Q < 100),
MOS = (MOS_MIN+(MOS_MAX-MOS_MIN)/100×Q+Q×(Q-60)×(100-Q)×7.0E-6);
elseif (Q >= 100),
MOS = MOS_MAX;
else
MOS = MOS_MIN;
end
```

### 4) Clause 6.4.3

In clause 6.4.3, "quality modules", the weightings of QQAV and QQFVA in equation (15c) are to be reversed:

#### Original text

$$QAV=0.7\times QQAV+0.3\times QQFAV \quad (15c)$$

#### Corrected text:

$$QAV=0.3\times QQAV+0.7\times QQFAV \quad (15c)$$



## SERIES OF ITU-T RECOMMENDATIONS

Series A	Organization of the work of ITU-T
Series D	General tariff principles
Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
Series G	Transmission systems and media, digital systems and networks
Series H	Audiovisual and multimedia systems
Series I	Integrated services digital network
Series J	Cable networks and transmission of television, sound programme and other multimedia signals
Series K	Protection against interference
Series L	Construction, installation and protection of cables and other elements of outside plant
Series M	Telecommunication management, including TMN and network maintenance
Series N	Maintenance: international sound programme and television transmission circuits
Series O	Specifications of measuring equipment
<b>Series P</b>	<b>Terminals and subjective and objective assessment methods</b>
Series Q	Switching and signalling
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	Data networks, open system communications and security
Series Y	Global information infrastructure, Internet protocol aspects and next-generation networks
Series Z	Languages and general software aspects for telecommunication systems