

ITU-R

Radiocommunication Sector of ITU

Recommendation ITU-R BT.1203-2 (02/2015)

User requirements for generic video bit-rate reduction coding of digital TV signals for an end-to-end television system

BT Series
Broadcasting service
(television)



Foreword

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Series of ITU-R Recommendations

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Series	Title
BO	Satellite delivery
BR	Recording for production, archival and play-out; film for television
BS	Broadcasting service (sound)
BT	Broadcasting service (television)
F	Fixed service
M	Mobile, radiodetermination, amateur and related satellite services
P	Radiowave propagation
RA	Radio astronomy
RS	Remote sensing systems
S	Fixed-satellite service
SA	Space applications and meteorology
SF	Frequency sharing and coordination between fixed-satellite and fixed service systems
SM	Spectrum management
SNG	Satellite news gathering
TF	Time signals and frequency standards emissions
V	Vocabulary and related subjects

Note: This ITU-R Recommendation was approved in English under the procedure detailed in Resolution ITU-R 1.

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RECOMMENDATION ITU-R BT.1203-2

User requirements for generic video bit-rate reduction coding of digital TV signals for an end-to-end television system

(Question ITU-R 12/6)

(1995-2007-2015)

Scope

This Recommendation is intended to provide user requirements for video bit-rate reduction coding of digital TV signals for an end-to-end television system, with respect to picture formats, coding schemes, picture quality, etc.

Keywords

Video bit rate reduction, Satellite News Gathering (SNG)

The ITU Radiocommunication Assembly,

considering

- a) that rapid progress is being made in bit-rate reduction coding techniques;
- b) that video bit-rate reduction coding of digital TV signals has found wide applications for SNG¹/ENG², studio production, contribution, both primary and secondary distribution and emission by terrestrial and satellite delivery;
- c) that in the total chain of broadcasting, a number of codecs will be used in a cascade, and this may lead to a loss of picture quality;
- d) that Recommendations ITU-T H.262 | ISO/IEC 13818-2 (MPEG-2 Video), H.264 | ISO/IEC 14496-10 (MPEG-4 AVC) and H.265 | ISO/IEC 23008-2 (MPEG-H HEVC) are already used or proposed for codecs for the applications above;
- e) that there could be advantages to having generic (i.e. related) bit-rate reduction coding in the various applications so that maximum commonality among various applications can be utilized;
- f) that interoperability should be achieved between different video formats and distribution media;
- g) that digital and analogue broadcasting systems will both exist during a transition period,

recommends

- 1 that the same picture format or closely related signal formats should be used as far as possible, throughout the broadcasting chain;
- 2 that the picture format of both input and output signals for coding and decoding should be the same;

¹ The definition of SNG (Satellite News Gathering) can be found in Annex 1, § 1.1 of Recommendation ITU-R SNG.770.

² The definition of ENG (Electronic News Gathering) can be found in Annex 3, § 2 of Recommendation ITU-R SA.1154 and § 3 of Report ITU-R BT.2069.

- 3 that the same or closely related coding schemes should be used as much as possible for terrestrial and satellite emission and secondary distribution in order to minimize the receiver cost and the quality degradation;
- 4 that the encoder should as far as possible allow non-changing parameters that may be used in subsequent coding processes, e.g. motion information to be down-loaded into the subsequent codecs;
- 5 that the interface between the codecs should be simple,
- further recommends*
- 1 that the values listed in Table 1 should be used for the input of the encoder and output of the decoder;
- 2 that the functional and operational requirements described in Table 6 should be satisfied;
- 3 that the benefits of generic coding applied to the total or parts of the total broadcasting chain should be studied in terms of ease of operation, equipment cost, and picture quality;
- 4 that the choice between Recommendation ITU-T H.262 | ISO/IEC 13818-2 (MPEG-2 Video), Recommendation ITU-T H.264 | ISO/IEC 14496-10 (MPEG-4 AVC)³, or Recommendation ITU-T H.265 | ISO/IEC 23008-2 (MPEG-H HEVC) for the source coding method used by individual administrations should depend on a number of considerations including, for instance, interoperability with legacy equipment, efficient use of the bit rate available in the delivery channel, and harmonization with source coding methods adopted by neighbouring administrations for digital terrestrial and satellite broadcast channels.

³ *Note from the Secretariat:* Recommendations ITU-T H.262, H.264 and H.265 are available in electronic form at the ITU-T website.