

ITU-R

Radiocommunication Sector of ITU

Recommendation ITU-R BT.1380-1
(07/2006)

**Standards for bit rate reduction
coding systems for SDTV**

BT Series
Broadcasting service
(television)



International
Telecommunication
Union

Foreword

The role of the Radiocommunication Sector is to ensure the rational, equitable, efficient and economical use of the radio-frequency spectrum by all radiocommunication services, including satellite services, and carry out studies without limit of frequency range on the basis of which Recommendations are adopted.

The regulatory and policy functions of the Radiocommunication Sector are performed by World and Regional Radiocommunication Conferences and Radiocommunication Assemblies supported by Study Groups.

Policy on Intellectual Property Right (IPR)

ITU-R policy on IPR is described in the Common Patent Policy for ITU-T/ITU-R/ISO/IEC referenced in Annex 1 of Resolution ITU-R 1. Forms to be used for the submission of patent statements and licensing declarations by patent holders are available from <http://www.itu.int/ITU-R/go/patents/en> where the Guidelines for Implementation of the Common Patent Policy for ITU-T/ITU-R/ISO/IEC and the ITU-R patent information database can also be found.

Series of ITU-R Recommendations

(Also available online at <http://www.itu.int/publ/R-REC/en>)

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.1380-1

Standards for bit rate reduction coding systems for SDTV^{*,}**

(Question ITU-R 12/6)

(1998-2006)

Scope

This Recommendation covers the use of ITU-T Recommendations H.262 (MPEG-2 Video) and H.264 (MPEG-4 AVC) as a choice of the video source coding schemes for a series of SDTV broadcasting applications.

The ITU Radiocommunication Assembly,

considering

- a) that rapid progress is being made in bit rate reduction coding techniques;
- b) that bit rate reduction coding of digital SDTV signals has found wide applications for emission by terrestrial means and by satellite, for SNG¹/ENG², for contribution, for both primary and secondary distribution by telecommunication networks and by cable networks;
- c) that a number of Radiocommunication Groups are studying the uses of bit rate reduction coding in the various applications;
- d) that ITU-R Recommendations on user requirements have been established for emission by terrestrial means and by satellite, for contribution, for both primary and secondary distribution by telecommunication networks and by cable networks;
- e) that Recommendation ITU-R BT.1203 for user requirements for generic bit rate reduction coding for an end-to-end television system (SNG/ENG, contribution, primary and secondary distribution, emission and related applications) has been established;
- f) that ITU-T Recommendation H.264 (MPEG-4 AVC) offers a broader compression toolkit and a more efficient compression than ITU-T Recommendation H.262 (MPEG-2 Video), and that for certain applications it may provide a superior choice since it offers a greater pixel depth, over the one offered by ITU-T H.262, as well as improved coding efficiency,

* In this Recommendation the acronym SDTV refers to signals based on Recommendation ITU-R BT.601 (Part A).

** Radiocommunication Study Group 6 made editorial amendments to this Recommendation in October 2010 in accordance with Resolution ITU-R 1.

¹ The definition of satellite news gathering (SNG) can be found in Annex 1 § 1.1 of Recommendation ITU-R SNG.770 .

² The definition of electronic news gathering (ENG) can be found in Annex 3 § 2 of Recommendation ITU-R SA.1154 and § 3 of Report ITU-R BT.2069.

recommends

1 that for the use of ITU-T Recommendation H.262, the following profiles and levels should preferably be used respectively for SNG/ENG, contribution, studio production, primary and secondary distribution and for the emission of SDTV signals by terrestrial and satellite delivery;

SNG/ENG	Contribution	Studio production	Primary distribution	Terrestrial emission	Satellite emission	Secondary distribution
MP@ML	422P@ML ⁽¹⁾	422P@ML ⁽²⁾	422P@ML ⁽¹⁾	MP@ML	MP@ML	MP@ML

NOTE 1: For studio production, DV-based coding⁽³⁾ may also be used.

⁽¹⁾ Taken from ITU-T Recommendation J.89.

⁽²⁾ Bit rate limited to 50 Mbit/s, taken from Recommendation ITU-R BR.1376.

⁽³⁾ Bit rate limited to 25 Mbit/s either for 4:2:0 or for 4:1:1 sampling structure and at 50 Mbit/s for 4:2:2 sampling structure, taken from Recommendation ITU-R BR.1376.

2 that for the use of ITU-T Recommendation H.264, the following profiles and levels should preferably be used respectively for SNG/ENG, contribution, studio production, primary and secondary distribution and for the emission of SDTV signals by terrestrial and satellite delivery;

SNG/ENG	Contribution	Studio production	Primary distribution	Terrestrial emission	Satellite emission	Secondary distribution
Level 3/ high 10	Level 3/ high 4:2:2	Level 3/ high 4:2:2	Level 3/ high 4:2:2	Level 3/ main ⁽¹⁾	Level 3/ main	Level 3/ main

⁽¹⁾ Some administrations have already selected this main profile for this application.

NOTE 1 – The choice between ITU-T Recommendation H.262 or ITU-T Recommendation H.264 for the source coding method used by individual administrations will depend on a number of considerations including interoperability with legacy equipment, efficient use of the bit rate available in the delivery channel, harmonization with source coding methods adopted by neighbouring administrations for digital terrestrial and satellite broadcast channels, etc.

Note from the Secretariat: ITU-T Recommendations H.262 and ITU-T H.264 are available in electronic form at the following address: <http://www.itu.int/md/R03-WP6A-C-0110/en>.