Recommendation ITU-R BT.1666-1

(02/2025)

BT Series: Broadcasting service (television)

User requirements for television applications intended for presentation in a theatrical environment

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 Resolution ITU‑R 1. Forms to be used for the submission of patent statements and licensing declarations by patent holders are available from <https://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.

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| Series of ITU-R Recommendations (Also available online at <https://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 |

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| ***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.1666-1

User requirements for television applications
intended for presentation in a theatrical environment

(2003-2025)

The ITU Radiocommunication Assembly,

considering

*a)* that it may be beneficial to develop a uniform or compatible hierarchy of technical standards for programme recording, mastering, exchange, delivery and exhibition, harmonised with those established for the recording and mastering, exchange and delivery of programmes for other applications, since this can ease international programme exchange;

*b)* that the possibility for theatre operators to present various types of programmes in their theatres (e.g. dramas, plays, sporting events, concerts, cultural events, etc.) have opened new commercial opportunities, which could be attractive both to theatre operators and to their public;

*c)* that there is a need to encourage the development of fully interoperable, competitive products that can be maintained at relatively low cost;

*d)* that television programmes, including high definition television (HDTV), ultra-high definition television (UHDTV), and high dynamic range television (HDR-TV) programmes, will be distributed to audiences in theatres utilising real-time and non-real-time delivery by satellite, cable, fibre, terrestrial broadcast, or via recorded media;

*e)* that it is essential to adopt open technical standards for distribution and display of programmes intended for presentation in a theatrical environment, and that those standards should consider existing standards,

recommends

that the user requirements in Annex 1 for theatrical presentation of television programmes should be taken into account when specifying a hierarchy of technical approaches for television applications designed for collective viewing in a theatrical environment.

Annex 1

User requirements for theatrical presentation of television programmes

Performance

– Technical specifications for specific performance levels should be established.

– Theatrical presentations should be capable of providing a range of subjective picture and sound qualities based on a family of applications, e.g. ranging from commercials through sporting events to highest quality drama, plays, etc.

– For applications at the highest performance level of the television system, the subjective overall picture and sound quality should parallel or exceed the one currently enjoyed by audiences in a theatrical environment.

Interoperability

– Content shall be playable with uniform results on different makes and technologies of playback and projection equipment.

– The image and sound digital representation, encoding, encryption, storage and playout should conform to open technical standards applicable around the world.

– The metadata accompanying television programmes should also conform to open technical standards applicable around the world.

– Technical equipment developed for television distribution and presentation should be fully interoperable among various vendor systems.

Delivery method and verification

– Television systems should allow for the real-time delivery interfaces used in the cable, optical fibre, broadcast and satellite industries, as well as non-real-time delivery interfaces used in telecommunications.

– Release masters of content intended for presentation in a theatrical environment should be deliverable over the whole variety of release media on which distributors may choose to release them, such as physical media, terrestrial, satellite, cable or optical fibre transmission.

Signal formats

– Technical systems and formats adopted for television should facilitate the interfacing and presentation in a theatrical environment.

Security

– Provisions for the implementation of effective and secure conditional access and copy protection methods, when needed, should conform to open technical standards applicable around the world.

Remote monitoring

– Automatic and remote monitoring of equipment performance and status reporting should comply with the industry standards that are compatible with secure networks.

Content packaging/interchange

– The system should allow the operator in a theatrical environment to have discretion over presentation of all contents and also should allow the ability to select language(s) and rating version(s) if applicable.

Compression

– Video and audio decoders should support broadcast decoding.