



International Organization for Standardization  
Organisation internationale de normalisation  
Международная организация по стандартизации

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# ISO/TC 36 Cinematography Strategic Business Plan Approved 18 July 2024

## EXECUTIVE SUMMARY

ISO/TC 36 Cinematography has the following scope:

Standardization of definitions, dimensions, digital data formats, methods of measurement and test, and performance characteristics relating to materials and apparatus used in silent and sound motion picture photography; in sound recording and reproduction related thereto; in the installation and characteristics of projection and sound reproduction equipment; in laboratory work; and in standards relating to sound and picture films used in television.

The key areas of the industries served include the manufacture of motion-picture film stock, digital infrastructure (data and file formats, interfaces, and relevant measurement metrics), the production, post-production, and laboratory work for entertainment feature-length motion picture films, the distribution and cinema theatrical exhibitions, and long-term preservation of motion pictures, in both film and digital form, around the world.

International Standards permit the international exchange of the related products and services.

## 1. INTRODUCTION

### 1.1 *ISO technical committees and business planning*

The extension of formal business planning to ISO Technical Committees (ISO/TCs) is an important measure which forms part of a major review of business. The aim is to align the ISO work programme with expressed business environment needs and trends and to allow ISO/TCs to prioritize among different projects, to identify the benefits expected from the availability of International Standards, and to ensure adequate resources for projects throughout their development.

### 1.2 *International standardization and the role of ISO*

The foremost aim of international standardization is to facilitate the exchange of goods and services through the elimination of technical barriers to trade.

Three bodies are responsible for the planning, development and adoption of International Standards: [ISO](#) (International Organization for Standardization) is responsible for all sectors excluding Electrotechnical, which is the responsibility of [IEC](#) (International Electrotechnical Committee), and most of the Telecommunications Technologies, which are largely the responsibility of [ITU](#) (International Telecommunication Union).

ISO is a legal association, the members of which are the National Standards Bodies (NSBs) of 170 countries (organizations representing social and economic interests at the international level), supported by a Central Secretariat based in Geneva, Switzerland.

The principal deliverable of ISO is the [International Standard](#).

An International Standard embodies the essential principles of global openness and transparency, consensus and technical coherence. These are safeguarded through its development in an ISO Technical Committee (ISO/TC), representative of all interested parties, supported by a public comment phase (the ISO Technical Enquiry). ISO and its [Technical Committees](#) are also able to offer the ISO Technical Specification (ISO/TS), the ISO Publicly Available Specification (ISO/PAS) and the ISO Technical Report (ISO/TR) as solutions to market needs. These ISO products represent lower levels of consensus and have therefore not the same status as an International Standard.

ISO also offers the International Workshop Agreement (IWA) as a deliverable which aims to bridge the gap between the activities of consortia and the formal process of standardization represented by ISO and its national members. An important distinction is that the IWA is developed by ISO workshops and fora, comprising only participants with direct interest, and so it is not accorded the status of an International Standard.

## 2. BUSINESS ENVIRONMENT OF THE ISO/TC

### 2.1 *Description of the Business Environment*

The following political, economic, technical, regulatory, legal and social dynamics describe the business environment of the industry sector, products, materials, disciplines or practices related to the scope of this ISO/TC, and they may significantly influence how the relevant standards development processes are conducted and the content of the resulting standards:

Over the last two decades, the motion picture industry has transitioned from being an industry that primarily created, distributed, and exhibited motion picture content using the photochemical medium of film (both film negatives and film prints) into being an industry that primarily creates, distributes, and exhibits motion-picture and alternative forms of content using the medium of digital data structures (file formats) together with the application of new digital capture and exhibition systems.

Furthermore, the rise of direct-to-consumer streaming services and the growth of the videogame sector have impacted the motion picture industry in both consumer viewing behavior and technologies used in production, distribution, and presentation. With respect to technologies, the motion picture industry makes use of and/or adapts technologies developed for other media applications, e.g., television, streaming, videogames, etc. This dynamic requires ISO/TC 36 to pay attention to standardization work in these and other sectors through liaison relationships and other relevant ISO mechanisms.

During this transition period,

- the range and quantity of motion picture and alternative content destined for cinema has increased dramatically;
- key actors of the photochemical era that played some form of gate-keeping quality control have left or have had their position significantly affected;
- new actors have entered the industry that are not necessarily familiar with the industry norms that are unrelated to the technological shift from film to digital; and
- the industry's application of free or open source solutions has also increased.

Combined, these trends challenge the interoperability and average quality of the resulting cinematic experiences. Furthermore,

- the industry has witnessed a 2x growth in the number of cinema screens during this same transition period, which has largely been focussed in Asia;
- the number of main Hollywood-based filmmaking studios has consolidated as has the number of cinema chains;
- digital filmmaking, distribution and exhibition technologies have enabled more locally-produced motion pictures and greater content choice for exhibitors;
- the economical driver behind the digital transition and how it was shaped, the Virtual Print Fee model, is at its end and there is no apparent studio-desire for this to be replaced; and
- the exhibition community has formed a global federation that is becoming more active in setting the future direction of the industry in light of the new range of sound, picture, and experiential innovation that exploits the conclusion of the industry's focus on the digital transition.

The industry's healthy level of new innovation is a mix of innovation that is developed specifically for cinema and innovation that is being applied to cinema that has otherwise been developed for other entertainment channels, which, together with the increase in live and other alternative forms of content being exhibited in cinema. Furthermore, it should be noted that all of the work carried out so far by ISO/ TC 36 towards the codification of the new digital cinema standards has been oriented around the post-production, distribution and exhibition stages of the supply-chain and not so far for the production. New work oriented towards digital production is expected.

The total combination of this radical shift in business environment results in a much greater need for TC36 to act as a custodian of both the established norms as well as to attract the right expertise to continue to codify new norms as their need materialises in this new vibrant digital era.

## 2.2 Quantitative Indicators of the Business Environment

The following list of quantitative indicators describes the business environment in order to provide adequate information to support actions of the ISO/TC:

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Sales are generally measured in terms of box office receipts. Prior to the global pandemic, global box office had grown 6% per year from 2009 to 2018. After a sharp pandemic-caused decline in 2020 (-72%), global box office receipts began to recover in 2021, but were still 21% below the pre-pandemic peak.

Regional variations 2023 versus 2022 are as follows:

- North America: +22.0%
- Europe, Middle East, and Africa: +22.3%
- Latin America: +35.7%
- Asia: +36.6%

For 2014 - 2023, worldwide box office receipts (billion USD) were:

Year	Global	Latin America	Europe, Middle East & Africa	North America	Asia Pacific
2023	33.1	1.9	8.3	9.1	13.9
2022	25.8	1.4	6.8	7.4	10.2
2021	21.1	0.7	4.9	4.6	10.9
2020	11.7	0.4	3.2	2.3	5.6
2019	41.9	2.4	10.2	11.4	18.0
2018	41.5	2.2	10.0	11.9	17.4
2017	40.3	2.9	10.1	11.1	16.3
2016	38.6	2.8	9.5	11.4	14.9
2015	38.4	3.4	9.7	11.1	14.2
2014	36.4	3.0	10.6	10.4	12.4

The top 10 2023 markets (billion USD) were:

- U.S. 7.80
- China 7.76

- Japan 1.50
- India 1.48
- France 1.40
- U.K. 1.22
- South Korea 0.967
- Germany 0.965
- Mexico 0.88
- Canada 0.66

The global average ticket price in 2023 was USD \$6.20 and global average attendance was 0.8 tickets per person per year

Sources: Omdia (box office 2019-2023, screen count), ComScore presentation at CinemaCon 2019 (box office 2014-2018), Consultancy UK analysis, Theatrical Market Statistics Report 2017 (box office 2014-2017)

***Business-to-business data:***

Not available at this time.

### **3. BENEFITS EXPECTED FROM THE WORK OF THE ISO/TC**

The main priority in the work of the Committee is standardization of image, sound and related data formats and playback specifications for cinematographic works. As motion picture production has become globalized in the same way as theatrical exhibition, the standardization of these formats enables the worldwide exchangeability and interoperability during production, distribution and presentation; the playback specifications guarantee the consistent replay according to the creative intent. In other words, by using these standards, cinematographic works can be co-produced in multiple countries. Reducing technical barriers also enabled greater cultural diversity.

With the advent of digital technologies, new creative capabilities for filmmakers such as High Dynamic Range, Immersive Sound and Higher Frame Rates are coming to market. The Committee will address the need for standardization of these new capabilities in new standards documents and updates to existing standards as required by the market.

Worldwide standards reduce motion picture production costs by reducing the creation of multiple, locally-defined data formats. Just as standardized digital project formats enable any movie to be played in any theater around the world, production standards enable motion pictures to be produced in any one nation (or, more commonly, several nations) and then be efficiently distributed and exhibited worldwide.

Furthermore, digital formats allow, on the one hand, cost-effective distribution and eliminate environmentally unfriendly chemical processes; on the other hand, digital formats are also more vulnerable to illegal copying and theft. By standardizing a commonly accepted security mechanism, efficient distribution and playback can be ensured while simultaneously protecting the creative work.

Cinematography standards enable accessibility, e.g., subtitles for the hearing-impaired and descriptive sound tracks for the sight-impaired, and ensure health protection, e.g., appropriate sound and light levels during exhibition.

Standards are cited, and are expected to be cited, as normative references in other International Standards.

## **4. REPRESENTATION AND PARTICIPATION IN THE ISO/TC**

### **4.1 Membership**

The membership of ISO/TC 36 can be found here:

<https://www.iso.org/committee/48090.html?view=participation>.

This list is comprised of 11 Participating (P) members, including Belgium, China, France, Germany, India, Japan, Republic of Korea, the Russian Federation, Sri Lanka, the United Kingdom and the United States, as well as 20 Observing (O) members, including Argentina, Austria, Cuba, Cyprus, Czech Republic, Egypt, Ethiopia, Finland, Greece, India, Islamic Republic of Iran, Italy, Democratic People's Republic of Korea, Pakistan, Poland, Portugal, Romania, Serbia, Spain and Tunisia.

### **4.2 Analysis of the participation**

Worldwide cinematography market forces are well represented in the technical committee through both P-members and O-members. This includes equipment manufacturers, feature film production and distribution as well as theatrical exhibition.

ISO/TC 36 currently has liaison relationships with ISO/IEC JTC 1/SC 29, Coding of audio, picture, multimedia and hypermedia information, IEC/TC 100, Audio, visual and multimedia systems and equipment, and ISO/TC 42, Photography.

ISO/TC 36 also has liaison relationships with the following external organizations:

- European Broadcasting Union (EBU)
- International Commission on Illumination (CIE)
- International Telecommunications Union (ITU)
- Society of Motion Picture and Television Engineers (SMPTE)
- United Nations Educational, Scientific, and Cultural Organization (UNESCO)
- World Customs Organization (WCO)

## **5. OBJECTIVES OF THE ISO/TC AND STRATEGIES FOR THEIR ACHIEVEMENT**

### **5.1 Defined objectives of the ISO/TC**

The TC will continue to maintain existing International Standards and develop new International Standards in the area of cinematography. Expected new items of work include the area of Digital Cinema production, post-production, presentation, and archiving of cinematographic materials.

Recent developments in artificial intelligence technology and increased attention to environmental sustainability may also produce new items of work as they may relate to the TC's scope of work covering motion picture production, processing, distribution, presentation, and archiving.

### **5.2 Identified strategies to achieve the ISO/TC's defined objectives**

The strategies are to maintain and develop International Standards, which are both relevant and responsive to the real world. Work will be conducted through the four working groups: WG 01 Production technology, WG 02 Laboratory and distribution services technology, WG 03 Audio technology, and WG 04 Presentation technology.

The TC's Chair Advisory Group (CAG) facilitates coordination among and between the four Working Groups.

ISO committee work will be conducted by correspondence, physical meetings, e-mail and ISO eCommittee workspace.

Use of available national, regional or other standards for Digital Cinema and other technical topics within the TC's scope will be used as source documents where practical on which to base International Standards.

Necessary co-operation and liaisons with other ISO committees and external standards developing organizations will continue to be used.

The structure of the ISO committee with the TC, CAG, and four WGs continues to serve the standards development and maintenance needs of the committee. New consideration may be given to improve support for market awareness and adoption of standards published by the TC.

## **6. FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF THE ISO/TC WORK PROGRAMME**

Cinematography, more commonly known as Cinema or Theatrical Motion Pictures, is now more than 120 years old, as an art form and a global commercial business. TC36 identifies the following factors that could potentially have a negative impact on implementation and use of TC36-developed standards, as well as approaches to mitigate them were practical:

- Standardization work is based on the expertise of national committees among ISO's members' bodies. National experts are volunteers and are most effective when encouraged to be present through the entire process culminating in publication of standards.
- Many volunteering experts are independent consultants or academics that must seek external financial support for their ISO work and required travel. This can make it difficult for experts to attend meetings and do the "heavy lifting" of standards development, which can lead to difficulties in accurately predicting and successfully achieving their participation and project timelines.
- Developing standards requires subject matter experts with appropriate skill sets and current knowledge. Sustained recruitment and encouragement on the part of TC 36 leadership is required to sufficiently engage qualified experts as they are commonly very busy with their primary work.
- There is a risk that the time to develop and publish standards could be too long for those standards to have market relevance. Manufacturers and end-users have been known to develop ad hoc "best practices" to meet customer requirements and may therefore be unwilling to use delayed standards.
- New committee members require training on ISO procedures to make them effective in developing standards.
- The systematic review process is time-consuming and in the case of older, "stabilized" standards, is an ineffective use of committee members' time. However, newer digital standards benefit from systematic review as digital and software-based technologies continue to rapidly evolve.
- Due to market-to-market differences, there may be challenges in achieving consensus on what becomes part of the committee's work program.
- National bodies have varying backgrounds based on education, market practices and commercial interest. These differences may also create challenges in achieving consensus on what becomes part of the committee's work program as well as how the work is done.
- Standards are only useful if people use them. Consideration will be given to potential education, promotion and adoption activities.



## 7. STRUCTURE, CURRENT PROJECTS AND PUBLICATIONS OF THE ISO/TC

### Information on ISO online

The link below is to the TC's page on ISO's website:

[ISO TC 36 on ISO Online](#)

Click on the tabs and links on this page to find the following information:

- About (Secretariat, Secretary, Chair, Date of creation, Scope, etc.)
- Contact details
- Structure (Subcommittees and working groups)
- Liaisons
- Meetings
- Tools
- Work programme (published standards and standards under development)

### Reference information

[\*Glossary of terms and abbreviations used in ISO/TC Business Plans\*](#)

[\*General information on the principles of ISO's technical work\*](#)