WIDE CIRCULATION DRAFT

BUREAU OF INDIAN STANDARDS
(DRAFT FOR COMMENTS ONLY)

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Societal security – Video-surveillance – Export interoperability

ICS 03.100.01

Risk Management, Security and Resilience, Sectional Committee, MSD 17	Last Date for receipt of Comments is October 2024

NATIONAL FOREWORD

(Formal clauses to be added later on)

The text of the International Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as `Indian Standard'.

In this adopted standard, references appear to an International Standard for which Indian Standards also exist. The correspondence Indian standards, which is to be substituted in its place, is listed below along with degree of equivalent for the editions indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO/IEC 14496-2:2004, Information technology — Coding of audio-visual objects — Part 2: Visual	IS/ISO/IEC 14496-2 : 2004, Information Technology - Coding of Audio-Visual Objects Part 2 Visual	Identical
ISO/IEC 14496-3:2009, Information technology — Coding of audio-visual objects — Part 3: Audio	IS/ISO/IEC 14496-3 : 2019, Information technology Coding of audio-visual objects Part 3: Audio First Revision	Identical
ISO/IEC 14496-10:2012, Information technology — Coding of audio-visual objects — Part 10: Advanced Video Coding	IS/ISO/IEC 14496-10 : 2014, Information technology — Coding of audio-visual objects — Part 10: Advanced Video Coding	Identical

ISO/IEC 14496-12:2012, Information technology — Coding of audio-visual objects — Part 12: ISO base media file format	IS/ISO/IEC 14496-12 : 2015, Information technology — Coding of audio-visual objects — Part 12: ISO base media file format	Identical
ISO/IEC 14496-14:2003, Information technology— Coding of audio-visual objects— Part 14: MP4 file format	IS/ISO/IEC 14496-14 : 2020, Information Technology Coding Of Audio-Visual Objects Part 14 Mp4 File Format (First Revision)	Identical
ISO/IEC 14496-15:2010, Information technology — Coding of audio-visual objects — Part 15: Advanced Video Coding (AVC) file format	IS/ISO/IEC 14496-15 : 2019, Information Technology Coding Of Audio-Visual Objects Part 15 Carriage Of Network Abstraction Layer Nal Unit Structured Video In The Iso Base Media File Format First Revision	Identical

In this adopted standard, references appear to certain International Standards for which no Indian Standards exist. The technical committee have reviewed the provisions of the following international standards referred in this standard and has decided that they are acceptable for use in conjunction with this standard:

International Standard	*Title*
ISO/IEC 10918-1:1994	Information technology — Digital compression and coding of continuous-tone still images: Requirements and guidelines — Part 1
ISO/IEC 10918-5	Information technology— Digital compression and coding of continuous-tone still images: JPEG File Interchange Format (JFIF) — Part 51)
ISO/IEC15444-1:2004	Information technology— JPEG 2000 image coding system: Core coding system— Part1
ISO/IEC 23000-10	Information technology — Multimedia application format (MPEG-A) — Part 10: Surveillance application format2)
IEC 62676-1-1	Video surveillance systems for use in security applications — Part 1-1: Video system requirements3)
IEC 62676-2-3	Video surveillance systems for use in security applications — Part 2-3: Video transmission protocols — IP interoperability implementation based on web services4)

Annex A is integral part of this standard and Annex B is for Information only.

Note: The technical content of the document is not available on website. For details, please refer the corresponding ISO 22311: 2012 or kindly contact:

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Scope

This International Standard is mainly for societal security purposes and specifies a common output file format that can be extracted from the video-surveillance contents collection systems (stand alone machines or large scale systems) by an exchangeable data storage media or through a network to allow end-users to access digital video-surveillance contents and perform their necessary processing. The means of exchange are not part of this International Standard.

This common output file format relies on a combination of several technical standards that individually are not restrictive enough to provide the requested interoperability. These standards are formally referenced to avoid duplications or divergence. When appropriate to improve the interoperability, subsets or a limited number only of these standards are called.

Since video-surveillance recording often includes taking records of citizens, requirements relating to privacy, use of the records and their disposal are also considered.

Based on the above mentioned technical standards, the following format components are covered:
— Video;
— Audio;
— Metadata:
     Descriptive (location, camera identifier, etc.)
     Dynamic (date, time, pan, tilt, zoom, identification results, etc.)
— Encapsulation/packaging for the output file;
— Data/access security and integrity;
— Provisions for privacy;
— Informative data regarding the presentation to users.

Introduction

Video-surveillance is a crucial asset in intelligence collection, crime prevention, crisis management, forensic applications etc. The minimum requirement in societal security is for the authorities to be able to rapidly use the data collected by different CCTV systems from given locations.

This International Standard provides an export interoperability profile which constitutes the exchange format and minimum technical requirements that ensure that the digital video-surveillance contents exported are compatible with the replay systems, establish an appropriate level of quality and contain all the context information (metadata) necessary for their processing.

It is crucial for societal security that present and future video-surveillance systems implement this interface to allow efficient forensic processing of the material produced, often in massive quantities.

This International Standard also contains provisions to ensure that privacy measures can be implemented to protect the rights of the individuals.

This International Standard does not impose implementation methods or technological solutions. It relies heavily on individual technical standards separately developed and concentrates on minimum necessary profiles or subsets thereof to achieve its societal security objectives.

This International Standard is a blend of profiles of standards and practices, which combined, will achieve a minimum level of interoperability.

This implementation has only been possible because of standards produced by the following bodies:

— ISO/IEC JTC 1/SC 29/WG 11, Coding of moving pictures and audio (MPEG);
 — ISO/IEC JTC 1/SC 29/WG 1, Coding of still pictures (JPEG);
— IEC/TC 79, Alarm systems and electronic security (including its European equivalent CENELEC/TC 79, Alarm systems and electronic security);
— ITU, International Telecommunication Union;
 — IETF, Internet Engineering Task Force;
— SMPTE, Society of Motion Picture and Television Engineers;
 — NATO, Standardization Agency
The normative Annex A contains a metadata dictionary.
The importance of having images stored and presented to the user in such a way that their use is facilitated is presented in the informative Annex B.