



# Technical Report

**ISO/TR 24936**

## Health informatics — Endoscopic video and related clinical information

*Informatique de santé — Vidéo endoscopique et informations  
cliniques associées*

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## Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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This document was prepared by Technical Committee ISO/TC 215, *Health informatics*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

Endoscopies are devices widely used in diagnosis, treatment and surgeries in modern healthcare. While there are different types of endoscopies for various purposes and subjects, one common and core functionality within these devices is the assistance by optical elements which allow the operator to see the environment of the subjects administered. Modern endoscopies can be attached to recording devices that enable them to store video data obtained from the optical elements of these devices.

The video data are the track records of the internal conditions of the subjects administered, and of how devices and the operator are performing during treatment and diagnosis. The video file consists of series of sequential moving pictures. These can contain a lot of information that can be relevant for medical education and even for the improvement of the endoscopic device functionality. In fact, using video data is highly common in the research and development of fields such as robot-assisted medical devices and machine learning modules. Laparoscopy, which is one of the types of endoscopies that are mainly used for surgeries, is an area where such technologies are actively been researched. The general flow of the video data file is outlined in the [Figure 1](#).

There is increasing awareness of the importance of video data from endoscopy, and such data is more available and accessible. Aside from the video data that are typically produced by these medical devices, other metadata are attached to them and provide additional context to the image data.

Furthermore, for the development of more complex and technological medical device, there can be a wish to obtain contextual information about the healthcare treatment that goes beyond what the device would normally produce. Such data points can include more information about the clinician, surgeon, patient, pre- or intra- or post-operative complications, bleeding volume, size of affected area, etc.

Due to the nature of such use cases, the video file is typically used outside the facilities where the treatment or recording has taken place originally. Since the data is delivered to third parties, it requires several data processing steps before it reaches data users from the data providers or the source facilities. This is mainly due to privacy protection purposes for any individual or privacy information that are recorded in the video file, which may include the patient, doctors, nurses and other healthcare professionals. The general flow of such activities is outlined in [Figure 1](#).

This document reports on the various data points that are typically utilized in the recent research and development of medical devices mainly related to laparoscopy, endoscopy and surgery robots. The report also covers the source of the information, the format of the information, how the information is stored and in what types of devices.

The report also refers to relevant healthcare standards, such as DICOM, to discuss how essential data points for these use cases can be processed.