Second edition
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Health informatics — Medical waveform format —

Part 1: Encoding rules

Informatique de santé — Format de la forme d'onde médicale —

Partie 1: Règles d'encodage

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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).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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

This second edition cancels and replaces the first edition (ISO 22077-1:2015) of which it constitutes a minor revision. The changes are as follows:

— some typographical errors have been corrected;

— Clause 2 "Normative references" has been added;

— Note 1 to entry has been added to terminology entries 3.1.1, 3.1.3 and 3.1.4, and terminology entry 3.1.5 has been added;

— classifications and types of waveform in Table 10 have been added;

— the character code in Table 39 has been changed;

— a Bibliography has been added.

A list of all parts in the ISO 22077 series can be found on the ISO website.

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.

Introduction

Medical waveform data such as an electrocardiogram (ECG) or an electroencephalogram (EEG) are widely utilized in physiological examinations, physiological research, electronic medical records, healthcare information and other areas in the clinical field. Medical waveform data can be used for many medical and research purposes if digital signal processing technology is applied to standardize the data in a digital format. For medical waveforms, it is essential to standardize the data format to expedite the mutual application of the standard so that the data can be processed electronically and used in a variety of ways.

Simple and easy implementation: the application of medical waveform format encoding rules (MFER) is very simple and is designed to facilitate understanding, easy installation, troubleshooting and low implementation cost.

Harmonization with other standards: MFER are specially utilized to describe the medical waveform data. Other information than waveform data, such as patient demographic data and finding information, etc., should be written using other healthcare standards, e.g. HL7, DICOM®[1)], the ISO/IEEE 11073 series.

In addition, experts in each field should independently develop relevant standards for medical specifications, e.g. MFER for ECG is developed by cardiologists and EEG is developed by neurologists.

Combination with coded information and text information: MFER policy is that both machine and human readable manner are used. Namely coded information is for computer processable and text data are for human readable information. For example, arterial blood pressure (ART) is coded as 129 and information description fields indicate “right radial artery pressure”. As the description of MFER is quite flexible, MFER neither hinders the features of each system nor impedes the development of technologies.

1) DICOM is the trademark of a product supplied by Medical Imaging & Technology Alliance, a division of the National Electrical Manufacturers Association. This information is given for the convenience of users of this document and does not constitute an endorsement by ISO of the product named.