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Health informatics — Digital imaging and communication in medicine (DICOM) including workflow and data management

Informatique de santé — Imagerie numérique et communication dans la médecine (DICOM) incluant le déroulement des opérations et la gestion des données

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 12052 was prepared by Technical Committee ISO/TC 215, *Health informatics*.

Introduction

ACR (the American College of Radiology) and NEMA (the National Electrical Manufacturers Association) formed a joint committee in 1983 to develop a Standard for Digital Imaging and Communications in Medicine. The third release of this work received the name DICOM, for Digital Imaging and Communications in Medicine. This DICOM Standard was developed according to the NEMA Procedures in liaison with other Standardization Organizations including ISO/TC/215, CEN TC251 in Europe and JIRA in Japan, with review also by other organizations including IEEE, HL7 and ANSI in the USA. Several countries have been actively involved in the development of the DICOM Standard — in particular Canada, Germany, France, Italy, Japan, Korea, Taiwan and the United States of America. Contributions were received from more than 20 other countries. DICOM is used in most healthcare institutions worldwide where patient imaging is performed. Most imaging devices and imaging related information systems products support it.

Within health informatics, this International Standard addresses the exchange of digital images and related information between both medical imaging equipment and systems concerned with the management of that information.

This International Standard facilitates interoperability of systems claiming conformance. In particular, it:

— addresses the semantics of commands and associated data; for devices and systems to interact, there must be standards on how they are expected to behave in response to commands and associated data, not just the information which is to be moved between devices and systems;

— is explicit in defining the conformance requirements of implementations of this International Standard; in particular, a conformance statement has to specify enough information to determine the functions for which interoperability can be expected with another system claiming conformance;

— facilitates operation in a networked environment and in the area of media interchange;

— is structured to accommodate the introduction of new services, thus facilitating support for future medical imaging applications.

Even though this International Standard has largely facilitated the implementations of Picture Archiving and Communication Systems (PACS) solutions and integrated digital imaging departments, use of this International Standard alone does not guarantee that all the goals of such solutions will be met. This International Standard facilitates interoperability of systems claiming conformance in a multi-vendor environment, but does not, by itself, guarantee interoperability.

This International Standard has been developed with an emphasis on diagnostic medical imaging as practiced in radiology, cardiology and other imaging disciplines.