

Medical informatics — Medical Imaging Communication (MEDICOM)

ICS 11.020; 35.240.70

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National foreword

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Comments arising from the use of this Draft for Development are requested so that UK experience can be reported to the European organization responsible for its conversion into a European Standard. A review of this publication will be initiated 2 years after its publication by the European organization so that a decision can be taken on its status at the end of its three-year life. The commencement of the review period will be notified by an announcement in *Update Standards*.

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A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the ENV title page, pages 2 to 16 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Amendments issued since publication

Amd. No.	Date	Comments

This Draft for Development, having been prepared under the direction of the DISC Board, was published under the authority of the Standards Committee and comes into effect on 15 November 1998

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English version

Medical Informatics — Medical Imaging Communication (MEDICOM)

Informatique de santé — Communication d'images
médicales (MEDICOM)

This European Prestandard (ENV) was approved by CEN on 27 November 1995 as a prospective standard for provisional application.

The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into a European Standard.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

This European Prestandard has been prepared by Technical Committee CEN/TC 251 “Medical informatics”, the secretariat of which is held by SIS.

This European Prestandard has been prepared under a mandate (BC-IT-214) given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this European Prestandard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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0 Introduction

0.1 History

The increased use of data processing and telecommunication capabilities has made possible the transmission of medical image and related data within and between institutions. Early work in this area led to the development of a large number of private image formats and communication methods. The further expansion of medical image interchange is hampered by the lack of a standard format for specifying image objects and standard means for on-line or off-line communication of medical image objects.

In order to accomplish standardised communication of medical image and related data by either on-line or off-line means a complete stack of standards is required.

This European Pre-standard references DICOM (various Parts of NEMA PS3). DICOM results from a complete redesign of the ACR-NEMA Standards Publication No. 300-1988 which was designated ACR-NEMA V2.0.

DICOM, or Digital Imaging and Communications in Medicine Version 3.0 embodies a number of major enhancements:

- a) It is applicable to a networked environment. DICOM supports operation in a networked environment using standard networking protocols such as OSI and TCP/IP;
- b) It specifies how devices claiming conformance to DICOM shall react to commands and data being exchanged. Previous versions were confined to the transfer of data, but DICOM specifies, through the concept of Service Classes, the semantics of commands and associated data;
- c) It specifies a structured approach to conformance. Previous versions specified only a minimum level of conformance. DICOM explicitly describes how an implementor must structure a Conformance Claim to select specific options. This will also allow purchasers of equipment with a DICOM interface to specify the functions and options they expect for their environment;
- d) It is structured as a multi-part document. This facilitates evolution in a rapidly evolving environment by simplifying the addition of new features. ISO directives which define how to structure multi-part documents have been followed in the construction of DICOM;
- e) It introduces explicit Information Objects not only for images and graphics but also for studies, reports, etc.;

- f) It specifies a technique for uniquely identifying any Information Object. This facilitates unambiguous definitions of relationships between Information Objects as they are acted upon across the network.

0.2 CEN standardisation on communication in medical imaging

CEN/TC 251/WG 4 contributed to the development and review of DICOM. By basing this Standard on DICOM, CEN expects to facilitate world-wide harmonisation of Medical Image Communication Standards with existing industry standards and accelerate the emergence of internationally approved standards in this area. In this harmonisation process CEN's strategy is to ensure that applicable ISO/IEC Standards are used and integrated.

0.3 Future directions

It is anticipated that this Standard will be an evolving standard and that proposals for enhancements will be forthcoming from the member organisations based on input from users of this Standard. These proposals will be considered for future versions of the Standard. A major objective in updating the Standard is to maintain effective compatibility with previous versions.

In the preparation of this Standard, suggestions and comments from users, vendors, and other interested parties have been sought, evaluated, and included. Inquiries, comments, and proposed or recommended revisions should be submitted to CEN/TC 251.

This Standard references a number of specifications which have been initially published by NEMA. However, they are also maintained by CEN to ensure that their evolution meets European requirements.

1 Scope and field of application

This document includes an overview of the Standard. In particular, it contains a brief description of the contents of each of the DICOM Parts referenced by this Standard (see Annex B).

This Standard facilitates inter-operability of medical imaging equipment by specifying:

- A unifying architecture for Communication in Medical Imaging, including a number of strategic directions for the evolution of this architecture;
- For on-line communication, a set of protocols to be followed by devices claiming conformance to the Standard as well as the syntax and semantics of Commands and associated information which can be exchanged over a network interface using these protocols;