

Implementation of ENV 41509 : 1990

**Information Systems
Interconnection — Office
Document Architecture (ODA)
— Document Application
Profile — Processable and
Formatted Documents — Basic
Character Content**

National foreword

This Draft for Development is identical with the European Prestandard ENV 41509 : 1990 'Information Systems Interconnection — Office Document Architecture (ODA) — Document Application Profile — Processable and Formatted Documents — Basic Character Content', prepared by CEN/CENELEC whose members have committed themselves to making it available in an appropriate form. In the UK the Draft for Development is the form now chosen for ENVs in the information technology area.

This Draft for Development is published under the direction of the Information Systems Technology Standards Policy Committee whose Technical Committee IST/18 has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on interpretation, or proposals for change, and to keep UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

NOTE. International and European Standards, as well as overseas standards, are available from BSI Sales Department, BSI, Linford Wood, Milton Keynes MK14 6LE.

After two years this ENV will be reviewed by CEN/CENELEC members with a view to its:

- conversion into a European Standard (which would be implemented in the UK as a British Standard);
- extension once for a further two years;
- replacement by a revised ENV (which would be published in the UK, probably as a revised Draft for Development);
- withdrawal.

The future of this Draft for Development is therefore dependent on that of the ENV.

This publication is not to be regarded as British Standard.

UDC: 681.327.8:651.2:002

Key words: Data Processing, Information Interchange, Data Transmission, Documents, Dimension, Logical Structure

English Version

Information Systems Interconnection - Office Document Architecture
(ODA) - Document Application Profile - Processable and Formatted
Documents - Basic Character Content

Interconnexion des systèmes
d'informations - ODA - Profil
d'application de Documents - Documents
Retraitables et Formattés - Contenu de
base de type caractères

Kommunikation von Informationssystemen
- ODA - Anwendungsprofil für Dokumente
- Weiterbearbeitbare und formatierte
Dokumente Grundzeicheninhalt

This European Prestandard (ENV) was accepted by CEN/CENELEC on 1989-10-19 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/CENELEC will be requested to submit their comments, particularly on the question whether the ENV can be converted into an EN.

CEN/CENELEC members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

CEN/CENELEC members are the national standards organizations and national committees, respectively, of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN/CENELEC

The joint European Standards Institution
Organisation Commune Européenne de Normalisation
Die Gemeinsame Europäische Normeninstitution

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Ref. No. ENV 41 509:1990 E

BRIEF HISTORY

This European Prestandard (ENV) was elaborated by the EWOS Expert Group ODA and submitted by the CEN/CENELEC Central Secretariat to the members for Formal Vote on 29 March 1989. It was approved with a number of technical and editorial comments, which were discussed by the Expert Group on 19 October 1989. The resulting amended version was adopted at a CEN/CENELEC voting meeting on the same day, where the following member countries voted for its acceptance: Belgium, France, Germany, Greece, Italy, United Kingdom.

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0 Introduction

This is the definition of an ODA document application profile named Q111, suitable for interchanging documents in formatted form, processable form or formatted processable form. This document application profile, which has been prepared by EWOS, is defined in accordance with ISO 8613-1 and CCITT Recommendation T.411 and follows the standardised proforma outline and notation defined in Draft Addendum to ISO 8613-1 Annex F (to be published).

1 Scope and field of application

This document application profile specifies interchange formats for the transfer of structured documents between word processing facilities. It caters for the transfer of documents such as memos, letters and reports that contain characters only.

This document application profile describes documents which can be interchanged in the following forms, as defined in ISO 8613:

- formatted form;
- processable form;
- formatted-processable form.

The architecture levels have matching functionalities so that the interchange formats of a document are convertible from a processable form into any other form.

This document application profile is independent of the processes carried out in an end system to create, edit or reproduce documents. It is also independent of the means to transfer documents which, for example, may be means of communication links or storage media.

2 References

ISO 2022 - Information Processing - ISO 7-bit and 8-bit Coded Character Sets - Code Extension Techniques.

ISO 6937-1 - Information processing - Coded Character Sets for Text Communication - Part 1: General Introduction.

ISO 6937-2 - Information processing - Coded Character Sets for Text Communication - Part 2: Latin Alphabet and Non-Alphabetic Characters.

ISO 8613-1 - Information Processing - Text and Office Systems; Office Document Architecture (ODA) and Interchange Format - Part 1: Introduction and General Principles.

ISO 8613-2 - Information Processing - Text and Office Systems; Office Document Architecture (ODA) and Interchange Format - Part 2: Document Structures.

ISO 8613-4 - Information Processing -Text and Office Systems; Office Document Architecture (ODA) and Interchange Format - Part 4: Document Profile.

ISO 8613-5 - Information Processing - Text and Office Systems; Office Document Architecture (ODA) and Interchange Format - Part 5: Office Document Interchange Format.

ISO 8613-6 - Information Processing - Text and Office Systems; Office Document Architecture (ODA) and Interchange Format - Part 6: Character Content Architectures.

ISO 8613-1 - Information Processing - Text and Office Systems; Office Document Architecture (ODA) and Interchange Format Part 1 Annex F: DAD - A Document Application Profile Proforma and Notation (to be published).

ISO 8859-1 - Information Processing - 8-bit Single Byte Coded Graphic Character Sets - Parts 1 to 7

CCITT Recommendation T.61, 1989: Character Repertoire and Coded Character Sets for the International Teletex Service.

ISO 8824 - Information Processing Systems - Open Systems Interconnection - Specification for Abstract Syntax Notation One (ASN.1).

ISO 8825 - Information Processing Systems - Open Systems Interconnection - Basic Encoding Rules for Abstract Syntax Notation One (ASN.1).

CCITT Recommendation T.411, 1989: Open Document Architecture (ODA) and Interchange Format - Introduction and General Principles

CCITT Recommendation T.412, 1989: Open Document Architecture (ODA) and Interchange Format - Document Structures

CCITT Recommendation T.414, 1989: Open Document Architecture (ODA) and Interchange Format - Document Profile

CCITT Recommendation T.415, 1989: Open Document Architecture (ODA) and Interchange Format - Open Document Interchange Format

CCITT Recommendation T.416, 1989: Open Document Architecture (ODA) and Interchange Format - Character Content Architectures

CCITT Recommendation T.502, 1989: A document Application profile PM1 for the Interchange of Processable Form Documents.

ENV 41201 - Private Message Handling System: User Agent and Message Transfer Agent: Private Management Domain to Private Management Domain (1988)

ENV 41202 - Information Systems Interconnection: Message Handling Systems: User Agent (UA) plus Message Transfer Agent (MTA): Access to an Administrative Management Domain (1987)

ENV 41 509 - Q121 ODA Document Application Profile: Simple Messaging Profile

ENV 41 511 - Q112 ODA Document Application Profile: Extended Mixed Mode

PrENV ... - Q113 ODA Document Application Profile: Enhanced Mixed Mode (to be published).

3. Definitions and abbreviations

The definitions given in ISO 8613-1 are applicable to this Document.

4. Relationship to other document application profiles

This EWOS Document defines a document application profile in accordance with ISO 8613.

This profile is referred to as Q111 and forms one of a set of hierarchically related profiles Q111, Q112 and Q113 whose features are summarized below. Each of these profiles provides for the interchange of documents in three forms, namely formatted, processable and formatted processable forms, as defined in ISO 8613. The related profile Q121 which provides for the interchange of documents in processable form only, is also briefly described below.

Q111, Q112 and Q121 are currently defined, whereas Q113 is not defined and is under study.

Q111, Q112 and Q113 are defined such that Q111 has the lowest level of functionality and Q113 the highest. All the functions provided by Q111 are provided by Q112 and it is intended that all the functions provided by Q112 are to be provided by Q113. Further details concerning the relationship between Q111 and Q112 are described in Annex C.

4.1 Q111

This profile provides for the interchange of documents containing character content between basic word processing systems.

From the logical point of view, the document content is represented in the form of a sequence of 'paragraphs'. These can be arranged into groups of one or more paragraphs to allow different layout and presentation features to be specified for each group.

From the layout point of view, the document content can be laid out into pages in the form of a single column of text. A part of the page can be reserved for header or footer content. Within the scope of these constraints, the page layout can be altered, as required, throughout the document.

Also, various layout and presentation parameters can be applied to each paragraph within the document. These include various forms of emphasis, tabulation, indentation, itemisation of paragraphs, alignment, the specification of various values of line and character spacings, widow and orphan sizes and the specification of margins. Automatic page numbering is also provided.

This document application profile is identical to CCITT Recommendation T.502. Clarifications to T.502 which are currently subject to ratification by CCITT are given in Annex D.

4.2 Q112

This profile provides for the interchange of multi-media documents between advanced document processing systems within an integrated office environment. Documents may contain character, raster graphics and geometric graphics content.

Q112 provides all the features supported by Q111 and the following additions. From the logical point of view, the document may be divided into a hierarchical tree of segments which may be used to represent the chapters, sections and nested sub-sections in a document. Automatic numbering of the chapters, sections etc. is provided. Footnotes can also be specified and these can be automatically numbered and referred to in the document content.

From the layout point of view, Q112 allows the document content to be laid out in multi-columns. The number of columns specified can vary within a page and from page to page. Footnotes are automatically laid out at the bottom of each page. Content within adjacent columns can be synchronized which, for example, can provide for multi-lingual documents.

Diagrams and other forms of illustrations may be provided by means of raster graphics or geometric content.

Q112 is a superset of Q111 apart from the exceptions described in Annex C.

4.3 Q113

This profile provides for the interchange of document between enhanced office systems.

This profile provides all the features supported by Q111 and Q112 but, in general, Q113 supports more complex logical and layout structures.

From the logical point of view, Q113 provides a greater degree of recursion within the logical structure and provides for a greater freedom for specifying different layout requirements for different parts of a document. Figures are provided and may contain the figure itself, a number, caption and associated text and footnotes. A general referencing mechanism is provided so that, for example, automatic references can be made to chapters, sections and figures from within the document content.

Q113 provides a wider range of layout options than Q112, for example, it provides for the automatic flow of text around figures and text and figures can be placed at fixed positions anywhere within a designated page.

It is intended that Q113 will be aligned with the level 3 ISP (see 4.5).

4.4 Q121

This profile provides for the interchange of documents containing characters only in processable form only. This allows such documents to be interchanged and presented irrespective of differences between the processing and display capabilities of the sending and receiving systems.

From the logical point of view, the document is divided into a sequence of paragraphs.

There is no layout information included in the document and the formatting of the document is the responsibility of the recipient.

Q121 does not strictly form part of the hierarchy referred to above, as it does not support all three document architectures.

4.5 Core profiles

At the time of writing, PAGODA (Profile Alignment Group for ODA) is defining a set of internationally harmonised profiles known as the CORE profiles. These are intended to be progressed as ISPs (International Standardized Profiles). It is intended that Q111 and Q112 will, if necessary, be revised to become fully compatible with CORE-11 and CORE-26 respectively when these are finalized. Q113, when defined, will be aligned with CORE-36.

5. Conformance

The following requirements apply to the encoding of data streams which conform to this application profile:

- the data stream shall be encoded according to the ASN.1 encoding rules defined in ISO 8825;
- the data stream shall be encoded according to the document interchange format defined in clause 8 of this DAP;

The document, as represented by the data stream after resolving any external references, shall be structured according to one of the document architecture classes specified in this DAP and shall contain all mandatory constituents specified for that class; other constituents may be included, provided they are permitted for that class, as specified in clause 7.

The following requirements also apply to the document:

- each constituent shall contain all those attributes specified as required for that constituent in this document; other attributes may be specified provided that they are permitted for that constituent;
- the attribute values specified shall be within the range of permissible values specified in this document;
- the document shall be structured according to the abstract document architecture defined in ISO 8613;
- the document shall be structured in accordance with the characteristics defined in clause 6 of this Document and shall contain only those features defined in clause 6.

6. Characteristics supported by this document application profile

6.1 Overview

This document application profile specifies interchange formats for the transfer of structured documents between word processing facilities. It caters for the transfer of documents such as memos, letters and reports that contain characters only.

This document application profile describes documents which can be interchanged in the following forms, as defined in ISO 8613:

- formatted form;
- processable form;
- formatted-processable form.

The architecture levels have matching functionalities so that the interchange formats of a document are convertible from a processable form into any other form.

Note: The description of the document features in this clause outlines the capabilities for processing and presentation which may be indicated as the originators intentions. This document application profile only defines the data stream comprising the ODA constituents necessary to represent such documents. The effect perceived by the user of receiving implementations depends upon the characteristics of such implementations.

6.2 Logical characteristics

6.2.1 Overview

From the logical point of view, the document content is divided into portions referred to as "paragraphs". Three types of "paragraph" are distinguished, namely paragraphs corresponding to header, footer and body text. These types of paragraph are intended to be reproduced in the header, footer and body areas respectively of each page of the document, as described in clause 6.3.

"Paragraphs" corresponding to body text are arranged into groups, which may contain any number of "paragraphs".

The division of the content into "paragraphs" provides the means to specify different layout and presentation requirements for individual or groups of successive "paragraphs".

The grouping of "paragraphs" allows different parts of the content of a document to be laid out in different sets of pages which have different layout formats.

The header and footer text also consists of a group of one or more "paragraphs". This allows different layout and presentation characteristics to be specified for different parts of the header and footer text.

Also, a document may consist of any number of such groups of header and footer "paragraphs". This allows the content of the headers and footers to be changed within the document, as well as the layout and presentation of that content.

It is not guaranteed that the semantics of "paragraphs" and groups of "paragraphs" are the same for the originator and recipient.

6.2.2 The generic and specific logical structures

6.2.2.1 The generic logical structure

The generic logical structure used to represent the features defined in 6.2.1 is shown in Figure 1. It consists of two parts, namely a "body" part, which defines the allowable specific logical structures that may be used to represent the document, and a "header and footer" part, which specifies the header and footer text that may be used in the document.

The "body" part consists of:

- a single document logical root class;
- a single composite logical object class;
- a single basic logical object class.

Content portions and the attribute "content generators" may not be associated with the basic logical object class.

The "header and footer" part is optional and, if present, contains one or more of either or both of the following:

- a composite logical object class (referred to as the "header root") consisting of a sequence of one or more subordinate basic logical object classes referred to as "header text".
- a composite logical object class (referred to as the "footer root") consisting of a sequence of one or more subordinate basic logical object classes referred to as "footer text".

In each case, the basic logical object class must reference a single content portion or must contain the attribute "content generator".

Also, each basic logical object class of the types "header text" and "footer text" may be referenced by one or more composite logical object classes of the type "header root" or "footer root".

Note 1: No distinction is made between the object classes "header root" and "footer root" in an interchanged document; both are represented by a constituent referred to as the "HeaderFooterRoot" (see clause 7.2). Similarly, "header text" and "footer text" are represented by a constituent referred to as "HeaderFooterText".

Note 2: Each constituent of the type "HeaderFooterRoot" is referenced by an attribute "logical source" applied to a header or footer frame respectively that is defined in the generic layout structure. This causes the content associated with, for example, the header root to be laid out in each instance of the header frame that is generated during the document layout process.

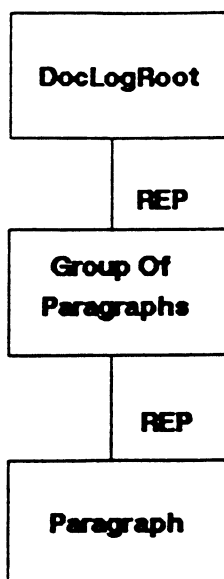


Figure 1A - Illustration of the 'body' part of the generic logical structure

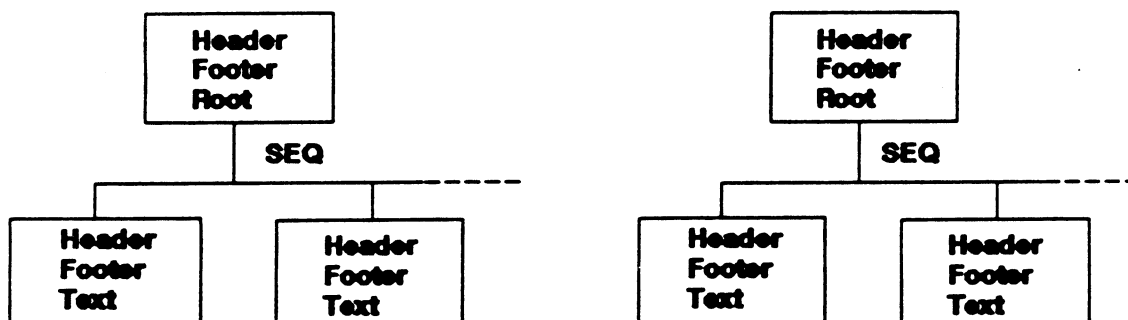


Figure 1B - Illustration of the 'header and footer' part of the generic logical structure

6.2.2.2 The specific logical structure

The specific logical structure is controlled by the "body" part of the generic logical structure as defined in clause 6.2.2.1.

As shown in figure 1, the document logical root class specifies that the document logical root consists of a sequence of one or more composite logical objects.

Each of these composite logical objects consists of a sequence of one or more basic logical objects referred to as "paragraphs".

Each paragraph may reference one or more content portions.

An example of a specific logical structure is illustrated in figure 2.

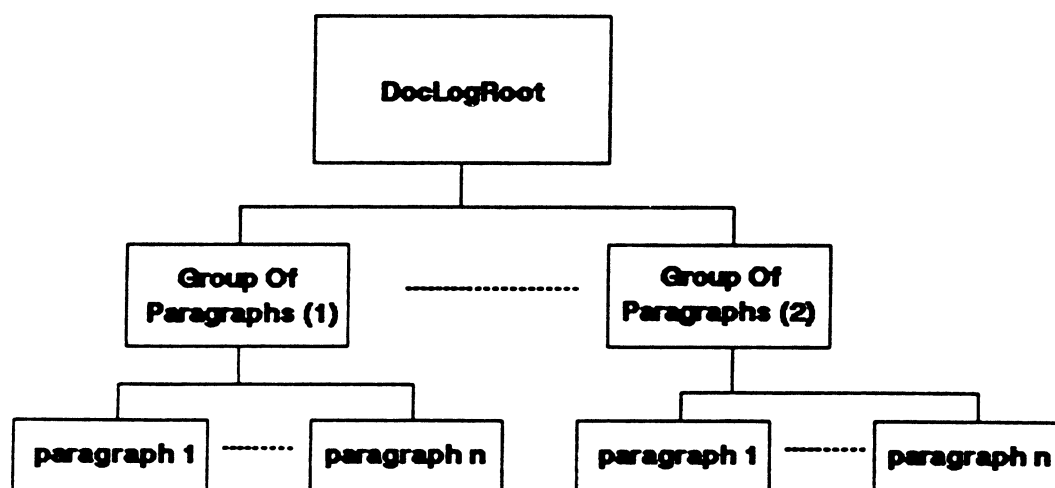


Figure 2 - Illustration of a specific logical structure

6.3 Layout characteristics

6.3.1 Overview

6.3.1.1 Document layout characteristics

From the layout point of view, the document consists of one or more page sets. This allows sets of pages having different layout characteristics to be distinguished.

Each page set consists of a sequence of one or more pages, in accordance with one of the following formats:

- a) a single page;