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TERMINALS FOR TELEMATIC SERVICES

INFORMATION TECHNOLOGY – OPEN DOCUMENT ARCHITECTURE (ODA) AND INTERCHANGE FORMAT: ABSTRACT INTERFACE FOR THE MANIPULATION OF ODA DOCUMENTS

ITU-T Recommendation T.413

(Previously “CCITT Recommendation”)

Foreword

ITU (International Telecommunication Union) is the United Nations Specialized Agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the ITU. Some 179 member countries, 84 telecom operating entities, 145 scientific and industrial organizations and 38 international organizations participate in ITU-T which is the body which sets world telecommunications standards (Recommendations).

The approval of Recommendations by the Members of ITU-T is covered by the procedure laid down in WTSC Resolution No. 1 (Helsinki, 1993). In addition, the World Telecommunication Standardization Conference (WTSC), which meets every four years, approves Recommendations submitted to it and establishes the study programme for the following period.

In some areas of information technology, which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC. The text of ITU-T Recommendation T.413 was approved on 11th of November 1994. The identical text is also published as ISO/IEC International Standard 8613-3.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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Summary

This Recommendation | International Standard describes an abstract interface that supports manipulation of ODA documents and the functions that are applicable to document fragments in order to facilitate the handling of ODA documents and to support applications

Foreword

This ITU-T Recommendation | International Standard was prepared as a joint publication by ITU-T Study Group 8 and ISO/IEC Joint Technical Committee 1.

At present, the ITU-T Recommendations in the T.410-Series | International Standard ISO/IEC 8613 consists of:

- Introduction and general principles;
- Document structures;
- Abstract interface for the manipulation of ODA documents;
- Document profile;
- Open document interchange format;
- Character content architectures;
- Raster graphics content architectures;
- Geometric graphics content architectures;
- Audio content architectures;
- Formal specification of the Open Document Architecture (FODA)
(The formal specification is applicable to ISO/IEC 8613 only.)
- Tabular structures and tabular layout;
- Identification of document fragments;
- Temporal relationships and non-linear structures.

Further Recommendations | International Standards may be added to this series of ITU-T Recommendations | International Standards.

Development of this series of ITU-T Recommendations | International Standards was originally in parallel with ECMA-101 standard: *Open Document Architecture*.

This ITU-T Recommendation | International Standard contains two annexes:

- Annex A (integral) specifies the alignment with DTAM abstract service;
- Annex B (non-integral) specifies the alignment with DOAM set of operations.

INTERNATIONAL STANDARD**ITU-T RECOMMENDATION****INFORMATION TECHNOLOGY –
OPEN DOCUMENT ARCHITECTURE (ODA) AND INTERCHANGE FORMAT:
ABSTRACT INTERFACE FOR THE MANIPULATION OF ODA DOCUMENTS****1 Scope**

The purpose of ITU-T Rec. T.410-Series | ISO/IEC 8613 is to facilitate the interchange and manipulation of documents.

In the context of these Recommendations | International Standards, documents are considered to be items such as memoranda, letters, invoices, forms and reports, which may include pictures and tabular material. The content elements used within the documents may include graphic characters, raster graphics elements and geometric graphics element, all potentially within one document.

NOTE – These Recommendations | International Standards are designed to allow for extensions, including spreadsheets and additional types of content such as video.

In addition to the content types defined in these Recommendations | International Standards, ODA also provides for arbitrary content types to be included in documents.

These Recommendations | International Standards apply to the interchange of documents by means of data communications or the exchange of storage media.

These Recommendations | International Standards provide for the interchange of documents for either or both of the following purposes:

- to allow presentation as intended by the originator;
- to allow processing, such as editing and reformatting.

The composition of a document in interchange can take several forms:

- formatted form, allowing presentation of the document;
- processable form, allowing processing of the document;
- formatted processable form, allowing both presentation and processing of the document.

These Recommendations | International Standards also provide for the interchange of ODA information structures used for the processing of interchanged documents.

This Recommendation | International Standard:

- describes an Abstract Interface that supports manipulation of ODA documents;
- defines the operations that are applicable to document fragments in order to facilitate the handling of ODA documents, and to support applications.

2 Normative references

The following Recommendations and International Standards contain provisions which, through reference in this text, constitute provisions of this Recommendation | International Standard. At the time of publication, the editions indicated were valid. All Recommendations and Standards are subject to revision, and parties to agreements based on this Recommendation | International Standard are encouraged to investigate the possibility of applying the most recent edition of the Recommendations and Standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards. The Telecommunication Standardization Bureau of the ITU maintains a list of currently valid ITU-T/CCITT Recommendations.

2.1 Identical Recommendations | International Standards

- ITU-T Recommendation T.411 (1993) | ISO/IEC 8613-1:1994, *Information technology – Open Document Architecture (ODA) and interchange format: Introduction and general principles.*
- ITU-T Recommendation T.412 (1993) | ISO/IEC 8613-2:1995, *Information technology – Open Document Architecture (ODA) and interchange format: Document structures.*
- ITU-T Recommendation T.414 (1993) | ISO/IEC 8613-4:1994, *Information technology – Open Document Architecture (ODA) and interchange format: Document profile.*
- ITU-T Recommendation T.415 (1993) | ISO/IEC 8613-5:1994, *Information technology – Open Document Architecture (ODA) and interchange format: Open document interchange format.*
- ITU-T Recommendation T.416 (1993) | ISO/IEC 8613-6:1994, *Information technology – Open Document Architecture (ODA) and interchange format: Character content architectures.*
- ITU-T Recommendation T.417 (1993) | ISO/IEC 8613-7:1994, *Information technology – Open Document Architecture (ODA) and interchange format: Raster graphics content architectures.*
- ITU-T Recommendation T.418 (1993) | ISO/IEC 8613-8:1994, *Information technology – Open Document Architecture (ODA) and interchange format: Geometric graphics content architectures.*
- ITU-T Recommendation T.419¹⁾ | ISO/IEC 8613-9: ...¹⁾, *Information technology – Open Document Architecture (ODA) and interchange format: Audio content architectures.*
- ITU-T Recommendation T.421 (1994) | ISO/IEC 8613-11:1995, *Information technology – Open Document Architecture (ODA) and interchange format: Tabular structures and tabular layout.*
- ITU-T Recommendation T.422¹⁾ | ISO/IEC 8613-12: ...¹⁾, *Information technology – Open Document Architecture (ODA) and interchange format: Identification of document fragments.*
- ITU-T Recommendation T.424¹⁾ | ISO/IEC 8613-14: ...¹⁾, *Information technology – Open Document Architecture (ODA) and interchange format: Temporal relationships and non-linear structures.*

2.2 Paired Recommendations | International Standards equivalent in technical content

- CCITT Recommendation X.208 (1988), *Specification of Abstract Syntax Notation One (ASN.1).*
ISO/IEC 8824:1990, *Information technology – Open Systems Interconnection – Specification of Abstract Syntax Notation One (ASN.1).*
- CCITT X.400-Series Recommendations (1988), *Message Handling System.*
ISO/IEC 10021:1990, *Information technology – Text communication – Message Oriented Text Interchange Systems (MOTIS).*

2.3 Additional references

- CCITT Recommendation T.431 (1991), *Document Transfer and Manipulation (DTAM) – Services and protocols - Introduction and general principles.*
- CCITT Recommendation T.432 (1991), *Document Transfer and Manipulation (DTAM) – Services and protocols - Service definition.*
- CCITT Recommendation T.433 (1991), *Document Transfer and Manipulation (DTAM) – Services and protocols - Protocol specification.*
- ITU-T Recommendation T.435 (1995), *Document Transfer and Manipulation (DTAM) – Services and protocols – Abstract service definition and procedures for confirmed document manipulation.*
- ITU-T Recommendation T.436 (1995), *Document Transfer and Manipulation (DTAM) – Services and protocols – Protocol specifications for confirmed document manipulation.*
- ISO/IEC 8613-10:1991, *Information processing – Text and office systems – Office Document Architecture (ODA) and interchange format – Part 10: Formal specifications.*
- ISO/IEC 10031-1:1991, *Information technology – Text and office systems – Distributed-office-applications model – Part 1: General model.*
- ISO/IEC 10166-1 (1991), *Information technology – Text and office systems – Document Filing and Retrieval (DFR) – Part 1: Abstract service definition and procedures.*

¹⁾ Presently at the stage of draft.

3 Definitions

For the purposes of this Recommendation | International Standard, the definitions given in ITU-T Rec. T.411 | ISO/IEC 8613-1 and ITU-T Rec. T.422 | ISO/IEC 8613-12 apply.

The following additional definitions are used within this Recommendation | International Standard:

- 3.1 **basic operation:** An operation that could not consist of a sequence of other operations without a clear loss of efficiency.
- 3.2 **compound operation:** An operation that could be substituted by a sequence of other operations.
- 3.3 **document identifier:** An identification of an ODA document that may be permanent (the “document reference” document profile attribute) or not (an integer value).
- 3.4 **query:** A logical expression comprising logical operators that connect values of attributes.

4 Abbreviations

For the purposes of this Recommendation | International Standard, the abbreviations given in ITU-T Rec. T.411 | ISO/IEC 8613-1 apply.

The following additional abbreviations are used within this Recommendation | International Standard:

AGCS	Audio Graphics Conferencing Service
AVIS	Audio Visual Interactive Service
CDH	Cooperative Document Handling
DAP	Document Application Profile
DFR	Document Filing and Retrieval
DOAM	Distributed Office Applications Model
DTAM	Document Transfer And Manipulation
DTAM-DM	Document Transfer And Manipulation - Document Manipulation
ROSE	Remote Operations Service Element

5 Conventions

For the purposes of this Recommendation | International Standard, the conventions given in ITU-T Rec. T.411 | ISO/IEC 8613-1 and ITU-T Rec. T.412 | ISO/IEC 8613-2 apply.

6 Purpose

6.1 Concept of the Abstract Interface

Documents may be edited, formatted, imaged, manipulated, and stored locally or in an open environment. The Abstract Interface applies to those aspects of manipulation that may be defined in an open environment. Nevertheless, it may be up to a specific implementation to provide interfaces in a compatible way for the open and the local environments.

Although the Abstract Interface defines functions to handle ODA documents, it does not preclude any definition of any specific application, but the applications themselves are responsible for the proper use of the operations provided by the Abstract Interface.

The objectives of the Abstract Interface are summarized in the following list of functions:

- Ensure consistency of manipulated ODA documents.
- Facilitate distributed processing of ODA documents. The Abstract Interface hides distribution details. Furthermore, local integration of products from different vendors can be achieved by using the Abstract Interface.