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**Information technology — Text and office  
systems — Office Document Architecture  
(ODA) and interchange format — Technical  
Report on ISO 8613 implementation  
testing —**

**Part 1:**  
Testing methodology

*Technologies de l'information — Bureautique — Architecture de  
documents de bureau (ODA) et format d'échange — Rapport technique  
sur l'essai de mise en œuvre de l'ISO 8613 —*

*Partie 1: Méthodologie d'essai*



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## Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

The main task of technical committees is to prepare International Standards, but in exceptional circumstances a technical committee may propose the publication of a Technical Report of one of the following types:

- type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;
- type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;
- type 3, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example).

Technical Reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical Reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

ISO/IEC TR 10183-1, which is a Technical Report of type 3, was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

ISO/IEC 10183 consists of the following parts, under the general title *Information technology — Text and office systems — Office Document Architecture (ODA) and interchange format — Technical Report on ISO 8613 implementation testing*:

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- *Part 1: Testing methodology*  
[Technical Report]
- *Part 2: Framework for abstract test cases*

# Information technology – Text and office systems – Office Document Architecture (ODA) and interchange format – Technical Report on ISO 8613 implementation testing

## Part 1:

## Testing methodology

### 1 Scope

This part of ISO/IEC TR 10183 defines a testing methodology and provides a framework for specifying abstract test cases for ISO 8613 implementation testing, the overall objective being the provision of a suitable base for testing the *interworking* capability of ODA implementations.

Such testing will assist in the analysis of an implementation's ability to interwork in an environment of implementations of ISO 8613 and implementations of International Standardized Profiles (ISPs) based on ISO 8613. ISPs are standardized document application profiles that have been internationally harmonized. As such they represent agreed stabilized subsets of ISO 8613 designed for the interworking of ODA systems at different levels of functionality.

In ISO 8613 the term “conformance” refers to the conformance of a data stream to the rules specified in ISO 8613. This includes the conformance of a data stream to a document application profile based on ISO 8613. Conformance testing methodology as defined in ISO 8613-1 Annex G covers the analysis of data streams without regard to the capabilities of implementations to generate or receive conforming data streams. To achieve an environment of interworking ODA systems, it is necessary to have a testing methodology that can verify implementation support for ISO 8613 and DAP's at the semantic level as well as the data stream or syntax level.

Hence, implementation testing is additional testing that supplements the conformance testing of data streams. It increases the probability that different implementations of ISO 8613 and ISPs are able to interwork. Implementation testing is based on the concept of measuring an implementation's ability to generate and/or receive a representative set of documents. If an implementation can exhibit this capability, then it is more likely to successfully interwork with other verified implementations exchanging a wider range of documents.

The implementation testing methodology introduces the requirement for abstract test cases as well as procedures for their use in the generation and reception testing of implementations.

In establishing a framework for implementation testing, a conceptual model of ODA systems has been developed to describe, in an abstract sense, the multitude of configurations and limitations of real ODA systems.

The methodology contained in this technical report caters for the testing of implementations of ISP's based on ISO 8613. The methodology may also be used for testing other Document Application Profiles based on ISO 8613.

This part of ISO/IEC TR 10183

- defines terms used in the context of Implementation testing;
- presents a conceptual model of ODA implementations;
- gives a phased approach to testing implementations;
- determines the functional components in generation and reception testing;
- gives the requirements for abstract test cases.

This part of ISO/IEC TR 10183 does not cover the testing of user interfaces in an ODA based system. Any suitable system interface is only used as a point of control and observation to verify that ODA document transformations associated with the various ODA processes have been carried out as claimed by an implementor.

Where appropriate, concepts and terminology described in ISO 9646 have been used in this Technical Report. In some cases, definitions and concepts have been adapted to cater for the fact that ODA is not an OSI protocol.

## 2 References

ISO 8613-1:1989, *Information processing – Text and office systems – Office Document Architecture (ODA) and interchange format – Part 1: Introduction and general principles.*

ISO 8613-2:1989, *Information processing – Text and office systems – Office Document Architecture (ODA) and interchange format – Part 2: Document structures.*

ISO 8613-4:1989, *Information processing – Text and office systems – Office Document Architecture (ODA) and interchange format – Part 4: Document profile.*

ISO 8613-5:1989, *Information processing – Text and office systems – Office Document Architecture (ODA) and interchange format – Part 5: Office Document Interchange Format (ODIF).*

ISO 8613-6:1989, *Information processing – Text and office systems – Office Document Architecture (ODA) and interchange format – Part 6: Character content architectures.*

ISO 8613-7:1989, *Information processing – Text and office systems – Office Document Architecture (ODA) and interchange format – Part 7: Raster graphics content architectures.*

ISO 8613-8:1989, *Information processing – Text and office systems – Office Document Architecture (ODA) and interchange format – Part 8: Geometric graphics content architectures.*

ISO/IEC 8613-9:–<sup>1)</sup>, *Information processing – Text and office systems – Office Document Architecture (ODA) and interchange format – Part 9: Audio content architecture.*

ISO/IEC 8613-10:1991, *Information processing – Text and office systems – Office Document Architecture (ODA) and interchange format – Part 10: Formal specifications.*

ISO/IEC 9646-1:1991, *Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 1: General concepts.*

ISO/IEC 10183-2:–<sup>1)</sup>, *Information processing – Text and office systems – Office Document Architecture (ODA) and interchange format – Testing methodology and abstract test cases – Implementation testing methodology – Part 2: Abstract test suites.*

ISO/IEC ISP 10610-1:–<sup>1)</sup> *Information technology – International Standardized Profile FOD11 – Office Document Format – Simple document structure – Character content architecture only – Part 1: Document application profile.*

ISO/IEC ISP 11181-1:–<sup>1)</sup>, *Information technology – International Standardized Profile FOD26 – Office Document Format – Enhanced document structure – Character, raster graphics and geometric graphics content architectures – Part 1: Document application profile.*

ISO/IEC ISP 11182-1:–<sup>1)</sup>, *Information technology – International Standardized Profile FOD36 – Office Document Format – Extended document structure – Character, raster graphics and geometric graphics content architectures – Part 1: Document application profile.*

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1) To be published.

### 3 Definitions

For the purposes of this part of ISO/IEC TR 10183, the definitions given in ISO 8613-1 and the following definitions apply.

NOTE 1 Some terms from ISO/IEC 9646-1 are also used where there is an equivalence of meaning.

**3.1 ODA document:** An amount of information structured in accordance with the abstract architecture model defined in ISO 8613.

**3.2 ODA data stream:** An ODIF or ODL data stream in which the data elements representing constituents and attribute values are in accordance ISO 8613-1:1991, clause 8, and any referenced standard.

NOTE 2 This definition requires, for example, that all constituent references must be satisfied either in the data stream or by some external reference.

**3.3 encode:** A transformation from a local system representation of an ODA document to an ODA data stream.

**3.4 originate (generate) a document:** Provide an ODA data stream for interchange.

**3.5 ODA interchange process:** An ODA document is originated, transmitted by means of data communications or the exchange of storage media and received.

**3.6 receive a document:** Accept a data stream as a representation of an ODA document.

**3.7 decode:** A transformation from an ODA data stream to a local system representation of an ODA document.

**3.8 DAP-L data stream:** An ODA data stream in which the data elements are in accordance with clause 7 of a particular DAP level "L", defined in accordance with ISO 8613-1.

**3.9 Implementation Under Test (IUT):** An implementation of ISO 8613 being that part of a real open system which is to be studied by testing.

**3.10 ODA Implementation:** An implementation that can generate a representative set of ODA data streams and/or receive and possibly further process a representative set of ODA data streams.

NOTE 3 Support for ODA generation, reception, and further processing depends on implementation characteristics (e.g. converter, editor, printer etc.).

**3.11 ISP Implementation:** An ODA implementation that can generate a representative set of ISP DAP-L data streams and/or receive and possibly further process a representative set of ISP DAP-L data streams.

NOTE 4 Support for ISP DAP-L generation, reception and further processing depends on implementation characteristics (e.g. converter, editor, printer etc.), as defined by a GSS/RSS (3.22).

**3.12 edit:** A transformation from a local system representation of a processable form ODA document to a local system representation of a revised version of that processable form ODA document. This transformation being in accordance with the editing process part of the ODA document processing model.

NOTE 5 *Edit* includes the "create" transformation from a null document to a processable document. *Edit* is a particular case of the *modify* transformation (3.13).

**3.13 modify:** A transformation from a local system representation of an ODA document to a local system representation of a revised version of that ODA document.

NOTE 6 *Modify* is a transformation relating to any changes to the document structures, constituents, attributes and content in a local system representation of an ODA document. An example of *modify* is the transformation that results from deleting the specific layout structure of a formatted processable form document to create a processable form version of that ODA document. *Modify* includes but is not limited to the *edit* transformation (3.12).