

The NATO Codification System

The Bridge to Interoperability

Web Sites

NATO Allied Committee 135: www.nato.int/codification
ECCMA: www.eccma.org



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Meeting the requirements of ISO 8000-110:2008 Master Data Quality

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ISO 8000 - Data Quality – Parts under development

Part 1: Overview, principles and general requirements

Part 2: Terminology

Part 100: Master data: Overview

Part 110: Master data: Exchange of characteristic data: Syntax, semantic encoding, and conformance to data specification

Part 120: Master data: Provenance

Part 130: Master data: Accuracy

Part 140: Master data: Completeness



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ISO 8000 - Data Quality – ISO Definitions

information

knowledge concerning objects, such as facts, events, things, processes, or ideas, including concepts, that within a certain context has a particular meaning [ISO/IEC 2382-1:1993]

meaningful **data** [ISO 9000:2005]

data

re-interpretable representation of information in a formalized manner suitable for communication, interpretation, or processing [ISO/IEC 2382-1:1993]

quality

degree to which a set of inherent **characteristics** fulfils **requirements** [ISO 9000:2005]

characteristic

distinguishing feature [ISO 9000:2005]

requirement

need or expectation that is stated, generally implied or obligatory [ISO 9000:2005]



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ISO 8000-110: Data Quality – Master Data

master data

data held by an organization that describes the entities that are both independent and fundamental for an enterprise, that it needs to reference in order to perform its transactions

Master data describes individuals, organizations, locations, goods, services, rules and regulations.

- **Customers**
- **Suppliers**
- **Materials**
- **Services**
- **Assets**
- **Locations**
- **Employees**
- **MSDS**
-



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ISO 8000-110: Master Data Quality - Motivation

Supplier and Manufacturers recognize that:

- data integration is one of the keys to a long term relationship
- the ability to provide their customers with quality data is a significant differentiating factor.



Suppliers and Manufacturers are:

- publishing the specifications of their products, capabilities and services on their web sites.
- looking to increase their visibility and understand that the best way to do this is to improve the quality of their data.

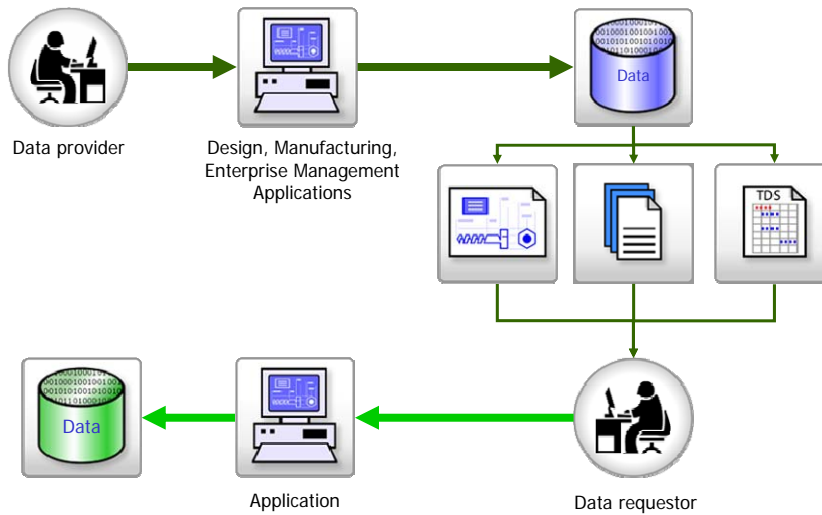
Suppliers and manufacturers are looking for a Standard that they can use to identify the quality of their data.


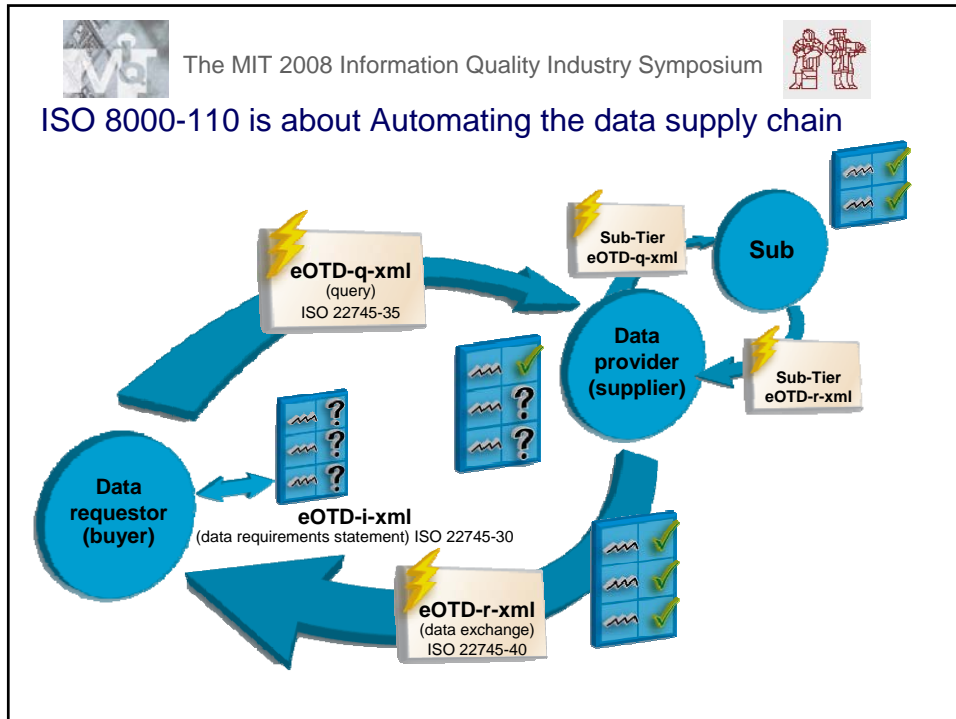


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ISO 8000 - Data Quality – Traditional data transfer





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Data quality and Intellectual Property (IP)

All identifiers are copyright. They belong to the organization that issued them and their use is subject to the terms and conditions imposed by the issuer.

Unless identifiers have been declared available for public use without a licence, they should never be used to retrieve data that was not supplied by the owner of the identifier unless you have specific permission to do so.

In order to protect your data from claims of "joint work" you should not use proprietary identifiers as metadata.



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ISO 8000 - Data Quality – Buyer contract clause

The contractor, sub-contractor or supplier shall supply technical data in electronic format on any of the items covered in this contract as follows:

- a. **The data shall comply with applicable ISO 22745-30 compliant Identification Guides.**
- b. **The data shall be encoded using concept identifiers from the ECCMA* Open Technical Dictionary (eOTD), an ISO 22745 compliant open technical dictionary.**
- c. **The data shall be provided in eOTD-r-xml, an ISO 22745-40 compliant Extensible Markup Language (xml) format published by ECCMA*.**
- d. **The data shall be certified as ISO 8000-110 compliant.**

* The Electronic Commerce Code Management Association (ECCMA) (www.eccma.org) is the Dictionary Maintenance Organization for the eOTD, a compliant open technical dictionary as defined by ISO 22745 and can provide technical assistance in meeting this requirement.



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ISO 8000 - Data Quality – Part 110

This part of ISO 8000 specifies requirements that can be checked by computer for the exchange, between organizations and systems, of master data that consists of characteristic data.

The following are within the scope of this part of ISO 8000:

requirements regarding conformance to a formal syntax for master data messages;
semantic encoding requirements for master data messages;
requirements regarding conformance to data specifications for master data messages;

The following are outside the scope of this part of ISO 8000:

requirements regarding the management of master data internally within an organization;
requirements regarding recording the history of master data; records of the history of the origination, modification, and transfer of custody or ownership of data are commonly referred to as the data provenance and are defined in ISO 8000-120.
requirements regarding accuracy of master data defined in ISO 8000-130;



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ISO 8000 - Data Quality – Part 110

Syntax

Each master data message shall contain in its header a reference to the formal syntax to which the master data message complies. The reference shall be an unambiguous identifier for the specific version of the formal syntax that was used to encode the master data message.

Semantic encoding

Semantic encoding is the technique of replacing natural language terms in a message with identifiers that reference data dictionary entries... Each reference shall be to a data dictionary entry contained in a data dictionary. The reference shall preserve the integrity of the recipient's data in that the reference to the data dictionary entry may be integrated with the recipient's own data without the creation of a joint work.

Syntax and semantic resolution shall be available at no charge unless the data carries a "fee based encoding" warning label.

Conformance to requirements

Each master data message shall contain in its header a reference to the data specification to which the master data message complies. The reference shall be an unambiguous identifier for the specific version of the data specification that was used to encode the master data message.



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ECCMA ISO 8000-110 Certification

- ✓ **Organization name:**
- ✓ **NCAGE** (required for NATO Codification Bureau certification only):
- ✓ **Point of contact name:**
- ✓ **Point of contact email address:**
- ✓ **Point of contact telephone number:**
- ✓ **eOTD-q-xml email address:**





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Software application and data service provider

Certifies that a specific version and release of a software application is ISO 8000-110 compliant.

The examination reviews the ability of the application to:

- ✓ access the eOTD using web services,
- ✓ import and export Identification Guides in eOTD-i-xml,
- ✓ import and export master data in eOTD-r-xml,
- ✓ generate queries in eOTD-q-xml (where appropriate)

For a software application the certificate is valid indefinitely but only applies to a specific version of the software application;

For a data service provider the certificate is valid for one year and must be renewed annually.



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Data requestors (Master Data Managers):

Certifies that an Organization requesting data is ISO 8000-110 compliant.

The examination reviews the ability of the Organization to:

- ✓ create Identification Guides in eOTD-i-xml,
- ✓ generate queries in eOTD-q-xml,
- ✓ read data in eOTD-r-xml.

The certificate is valid for one year and must be renewed annually.





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Data providers (Suppliers)

Certifies a data provider as ISO 8000-110 compliant.

The examination reviews the ability of the Organization to:

- ✓ receive and process a query in eOTD-q-xml
- ✓ send data in eOTD-r-xml.

The certificate is valid for a single email address for a period of one year.



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Software application and data service provider certification

Test 1: Accessing the eOTD using web services and reading eOTD-r-xml

1. Obtain a copy of the eOTD web services implementation guide
 - www.eccma.org/eOTD/web_services_imp
2. Obtain current eOTD-xml schemas and WSDL files
 - www.eccma.org/eOTD/XML_schemas
 - www.eccma.org/eOTD/web_services_def
3. Implement eOTD web services
 - Open source client is available at www.eccma.org/eOTD/web_services_client





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Software application and data service provider certification

Test 1/3: Accessing the eOTD using web services and reading eOTD-r-xml

4. Test web services
 - Download eOTD-r-xml test encoded and expanded files from www.eccma.org/eOTD/test_files/eOTD-r-xml
 - Import encoded eOTD-r-xml file into client application
 - Run client application to resolve identifiers using web services
 - Verify results against expanded file
5. Demonstrate web services capability
 - Request test encoded eOTD-r-xml from ECCMA certification services by sending email to ECCMA_8000-110_certification@eccma.org with subject line: Request eOTD web services certification test message (note encoded eOTD-r-xml will be sent as a reply to the originating email address)
 - Send test expanded eOTD-r-xml to ECCMA certification services by sending email to ECCMA_8000-110_certification@eccma.org with subject line: eOTD web services certification expanded file verification



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Software application and data service provider certification

Test 2/3: importing and exporting eOTD-i-xml and writing eOTD-r-xml

1. Obtain a copy of the eOTD Identification Guide (IG) implementation guide
 - www.eccma.org/eOTD/IG_imp
2. Obtain current eOTD-i-xml schemas
 - www.eccma.org/eOTD/XML_schemas
3. Implement eOTD-i-xml import and export in application under test





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Software application and data service provider certification

Test 2/3: importing and exporting eOTD-i-xml and writing eOTD-r-xml

4. Test eOTD-i-xml import and writing eOTD-r-xml

- Download eOTD-i-xml test suite from www.eccma.org/eOTD/test/eOTD-i-xml
- Load eOTD-i-xml test file
- Verify correctness of import using a method appropriate to the application
 - Compare eOTD-i-xml against application-specific screens, data files, etc.
 - Create and export eOTD-r-xml using imported eOTD-i-xml

5. Test eOTD-i-xml export

- Download eOTD-i-xml test suite from www.eccma.org/eOTD/test/eOTD-i-xml
- Upload and modify test eOTD-i-xml
- Save from application's native representation to eOTD-i-xml
- Verify correctness of export using a method appropriate to the application
 - Compare native representation against eOTD-i-xml file



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Software application and data service provider certification

Test 2/3: importing and exporting eOTD-i-xml and writing eOTD-r-xml

6. Demonstrate eOTD-i-xml import and export and writing eOTD-r-xml capability

- Request test eOTD-i-xml from ECCMA certification services by sending email to ECCMA_8000-110_certification@eccma.org with subject line: Request eOTD-i-xml certification test message (note encoded eOTD-i-xml will be sent as a reply to the originating email address)
- Send matching eOTD-r-xml to ECCMA certification services by sending email to ECCMA_8000-110_certification@eccma.org with subject line: Verification eOTD-i-xml import
- Modify Identification Guide and send modified eOTD-i-xml to ECCMA certification services by sending email to ECCMA_8000-110_certification@eccma.org with subject line: Verification modified eOTD-i-xml.





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Software application and data service provider certification

Test 3/3: Generating eOTD-q-xml queries

1. Obtain current eOTD-xml schemas and examples
 - www.eccma.org/eOTD/XML_schemas
2. Implement eOTD-q-xml
3. Test eOTD-q-xml generation
 - Download eOTD-q-xml test encoded and expanded files from www.eccma.org/eOTD/test_files/eOTD-q-xml
 - Manually read expanded file and generate validation, missing characteristic data and missing reference data queries in eOTD-q-xml using application
 - Verify results against encoded files
4. Demonstrate eOTD-q-xml capability
 - Request test eOTD-q-xml from ECCMA certification services by sending email to ECCMA_8000-110_certification@eccma.org with subject line: Request eOTD-q-xml certification test message (note encoded eOTD-r-xml will be sent as a reply to the originating email address)
 - Send eOTD-q-xml to ECCMA certification services by sending email to ECCMA_8000-110_certification@eccma.org with subject line: Verification eOTD-q-xml (note: email must contain all three forms)



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Data requestors (Master Data Managers):

Test 1/1: Creating eOTD-i-xml, generating eOTD-q-xml and reading eOTD-r-xml

1. Demonstrate ability to register an Identification Guide
 - Logon to ECCMA Identification Guide Registry
 - Create or modify an identification guide
 - Export eOTD-i-xml
 - Send eOTD-i-xml to ECCMA certification services by sending email to ECCMA_8000-110_certification@eccma.org with subject line: DMD verification eOTD-i-xml registration.
2. Demonstrate ability to create eOTD-q-xml
 - Send eOTD-q-xml to ECCMA certification services by sending email to ECCMA_8000-110_certification@eccma.org with subject line: MDM verification eOTD-q-xml (note: email must contain all three forms)
3. Demonstrate ability to read eOTD-r-xml
 - Request test encoded eOTD-r-xml from ECCMA certification services by sending email to ECCMA_8000-110_certification@eccma.org with subject line: MDM request eOTD-r-xml (note encoded eOTD-r-xml will be sent as a reply to the originating email address)
 - Send test expanded eOTD-r-xml to ECCMA certification services by sending expanded eOTD-r-xml to ECCMA_8000-110_certification@eccma.org with subject line: MDM verification eOTD-r-xml expanded file verification





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Data providers (Suppliers):

Test 1/1: Responding to eOTD-q-xml and writing eOTD-r-xml

1. Demonstrate ability to respond to an eOTD-q-xml

- Request test eOTD-q-xml from ECCMA certification services by sending email to ECCMA_8000-110_certification@eccma.org with subject line: Request eOTD-q-xml certification test message PNxxxx 0161-1#01#yyyyy (xxx should be the part number and yyyyy the class identifier of the item that you wish to have queried, the eOTD-q-xml will be sent as a reply to the originating email address)
- Send eOTD-r-xml to ECCMA certification services at ECCMA_8000-110_certification@eccma.org with subject line: Verification eOTD-q-xml response

