



EOSDIS

NASA'S EARTH OBSERVING SYSTEM
DATA AND INFORMATION SYSTEM

International Metadata Standards and Enterprise Data Quality Metadata Systems

Ted Habermann

Director of Earth Science

The HDF Group

thabermann@hdfgroup.org

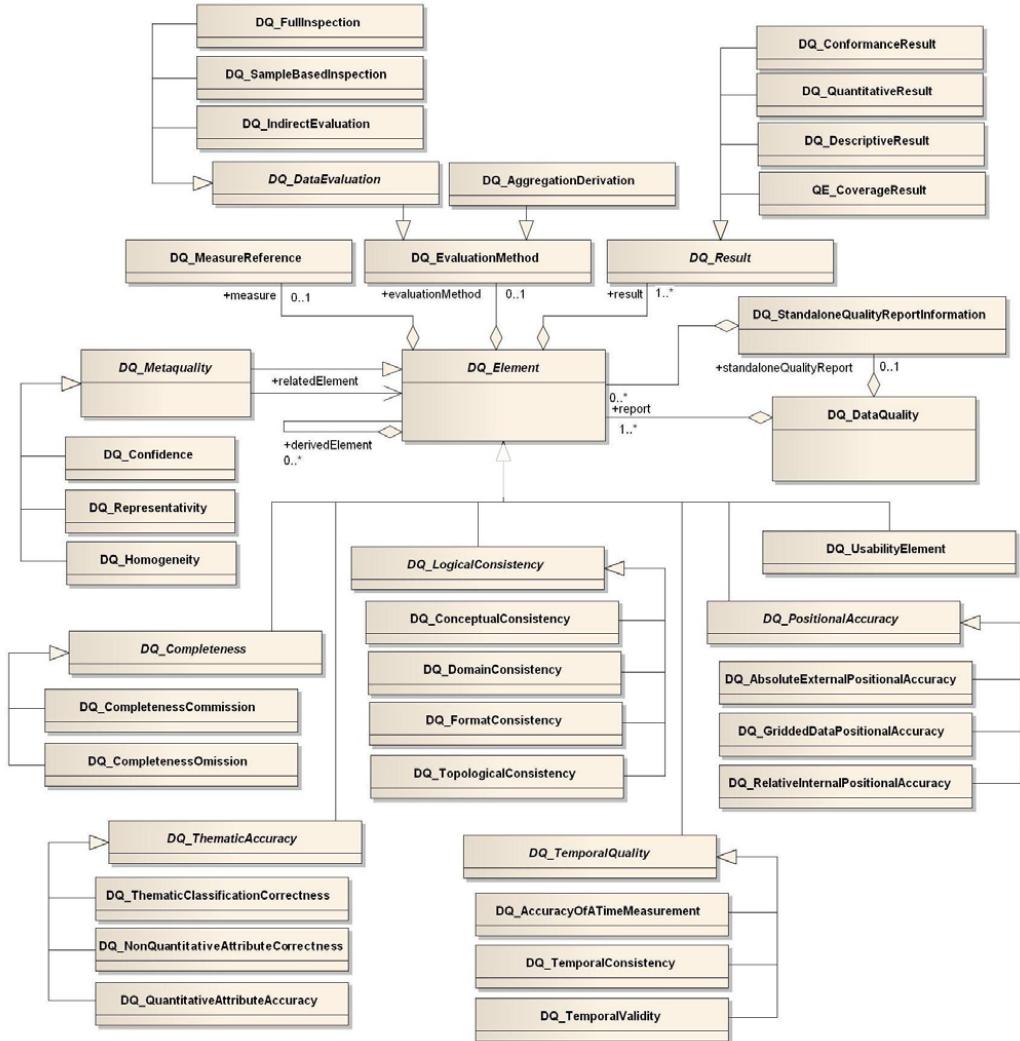


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The Big Picture

ISO 19157 is a conceptual model of data quality metadata that was recently approved as an international standard. It combines three older standards into a unified model for describing data quality.

Many of the principle elements of this conceptual model are abstract, and can be implemented in several ways.

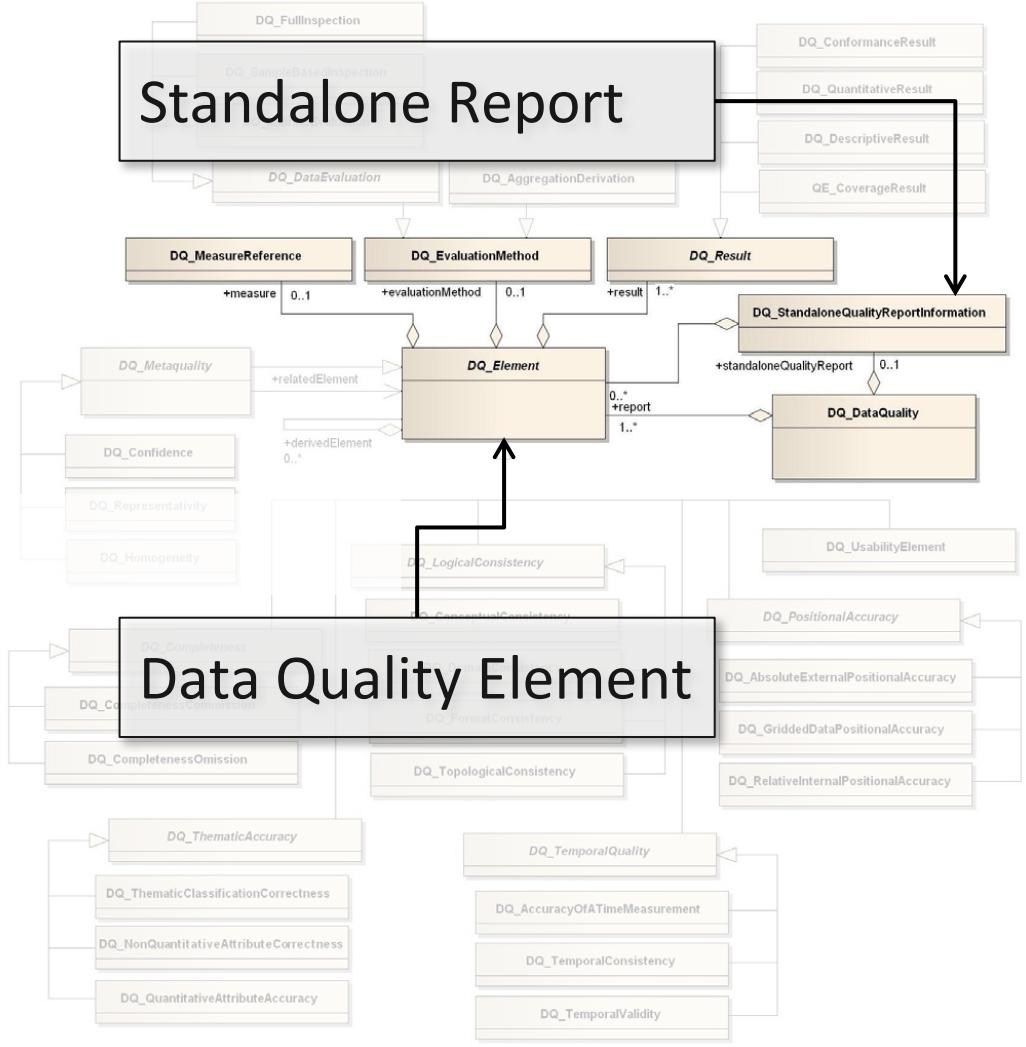


The Big Picture

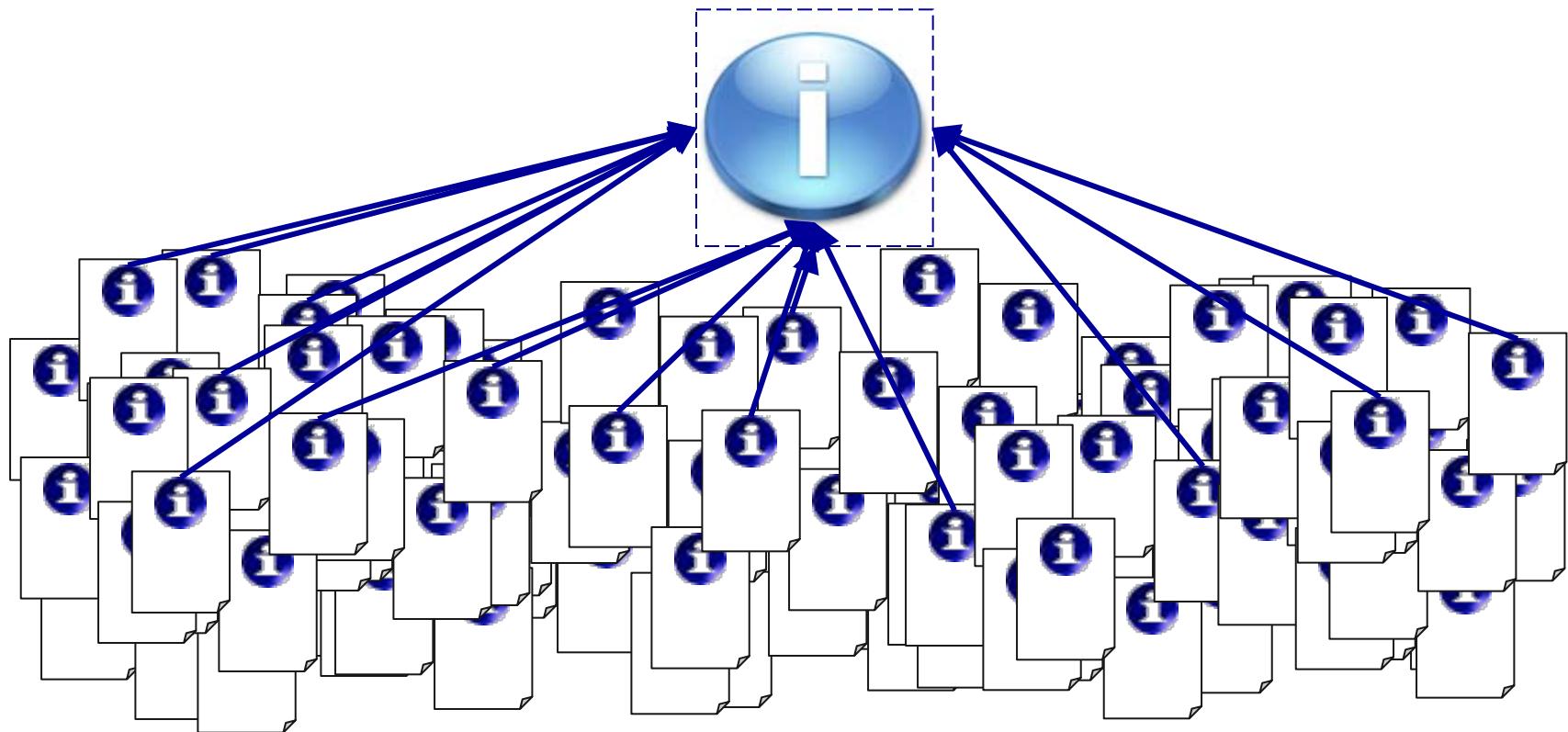
ISO 19157 is a conceptual model of data quality metadata that was recently approved as an international standard. It combines three older standards into a unified model for describing data quality.

Many of the principle elements of this conceptual model are abstract, they can be implemented in several ways.

When only the abstract concepts are considered, the model is very simple.



Enterprise Systems?



Data Quality Scope

“The quality of my data vary in time and space and different parameters have different quality measures and results.”

ISO quality reports all include descriptions of temporal and spatial extents and elements of the data set that they pertain to. You can say things like:

Between 2001 and 2002 the quality of the data in the northern hemisphere ...

or

The data collected by this sensor degraded during June 2011 because...

or

Quality information for this parameter is in this variable...

<<DataType>> DQ_Scope
+ level : MD_ScopeCode + extent [0..1] : EX_Extent + levelDescription [0..*] :MD_ScopeDescription

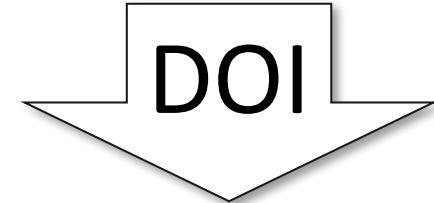
Stand Alone Quality Reports

"There are papers and web pages that describe the quality of my data."

Papers and reports that describe data quality are StandAloneReports. Metadata can include brief descriptions of the results (abstracts) and references to any number of these (citations).

Abstract: The fire training-set may also have been biased against savanna and savanna woodland fires since their detection is more difficult than in humid, forest environments with cool background temperatures [Malingreau, 1990]. There may, therefore, be an under-sampling of warmer background environments.

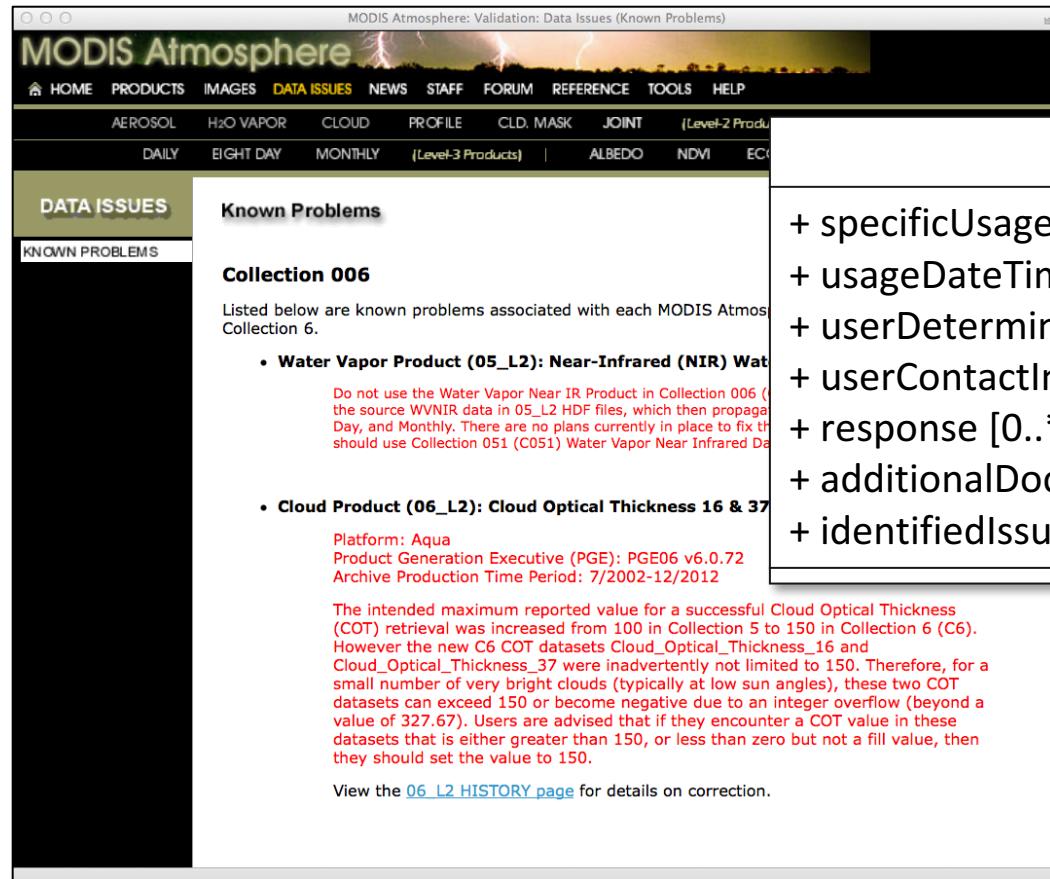
DQ_StandaloneQualityReportInformation
+ abstract : CharacterString
+ reportReference: CI_Citation



Citation: Malingreau J.P, 1990, The contribution of remote sensing to the global monitoring of fires in tropical and subtropical ecosystems. In: *Fire in Tropical Biota*, (J.G. Goldammer , editor), Springer Verlag , Berlin: 337-370.

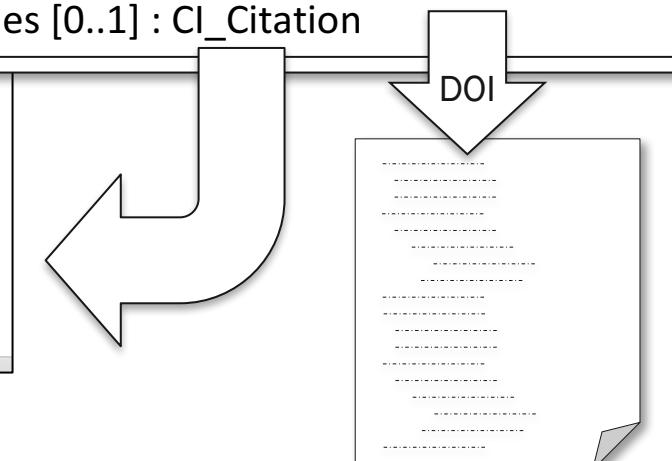
Data Usage (19115-1)

“Users increase our understanding of data quality. We need to keep them in the loop.”



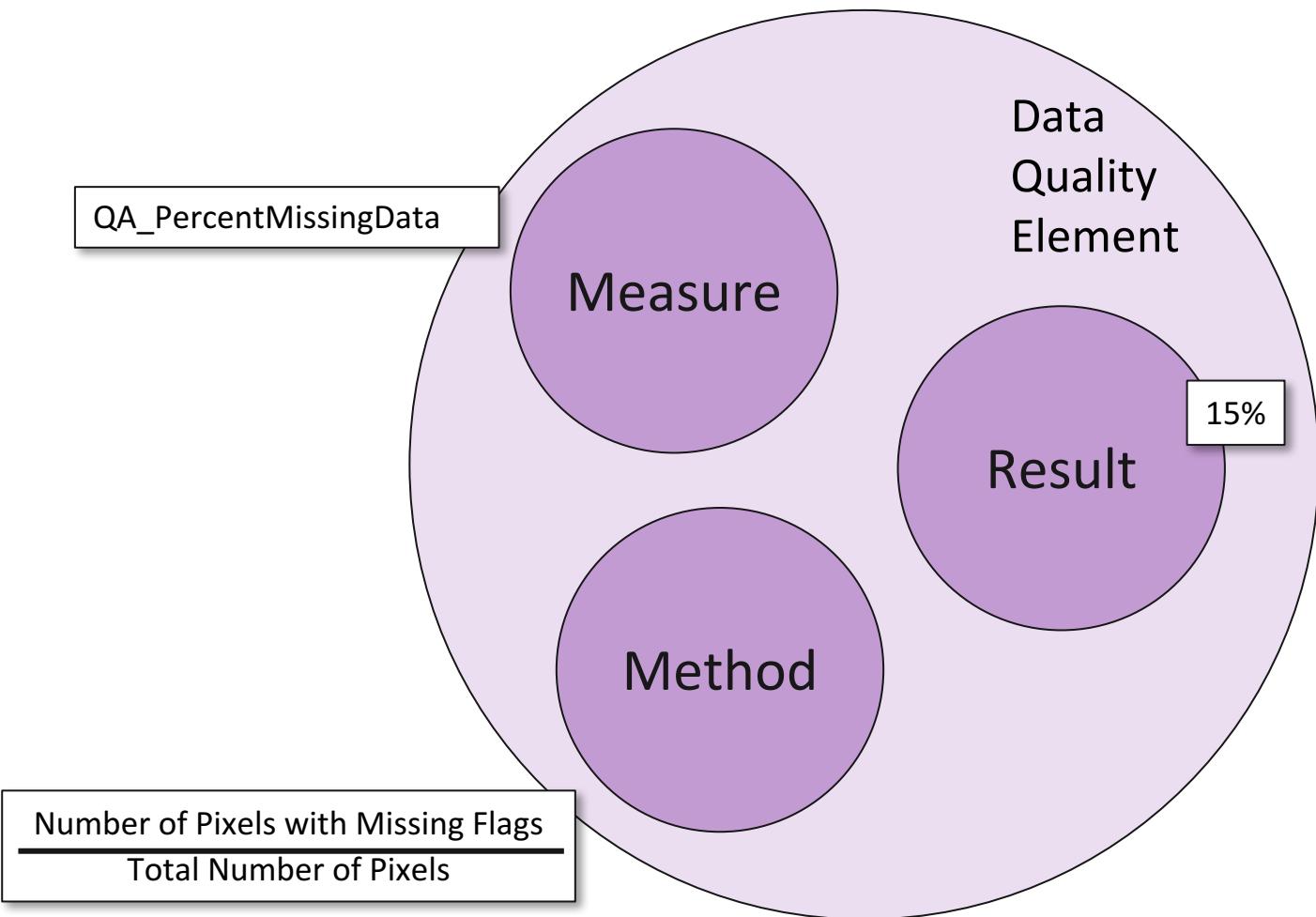
The screenshot shows the MODIS Atmosphere website with a banner image of lightning over a landscape. The navigation bar includes links for HOME, PRODUCTS, IMAGES, DATA ISSUES (which is highlighted), NEWS, STAFF, FORUM, REFERENCE, TOOLS, and HELP. Below the navigation is a menu for AEROSOL, H₂O VAPOR, CLOUD, PROFILE, CLD. MASK, JOINT (Level-2 Products), DAILY, EIGHT DAY, MONTHLY (Level-3 Products), ALBEDO, NDVI, EC, and KNOWN PROBLEMS. A sidebar on the left has a 'DATA ISSUES' tab selected, leading to 'Known Problems'. Under 'Collection 006', it lists known problems for Water Vapor Product (05_L2) and Cloud Product (06_L2). The Water Vapor Product section contains a note about using WV NIR data instead of WVNIR due to propagation errors. The Cloud Product section discusses the increased maximum Cloud Optical Thickness (COT) from 100 to 150 in Collection 6, noting an integer overflow issue for very bright clouds. A large callout box on the right, titled 'MD_Usage', lists several data model usage annotations:

- + specificUsage : CharacterString
- + usageDateTime [0..1] : DateTime
- + userDeterminedLimitations [0..1] : CharacterString
- + userContactInfo [1..*] : CI_ResponsibleParty
- + response [0..*] : CharacterString
- + additionalDocumentation [0..*] : CI_Citation
- + identifiedIssues [0..1] : CI_Citation



A diagram on the right shows a flow from the 'MD_Usage' annotations to a document icon labeled 'DOI'. A large downward-pointing arrow originates from the annotations and points to the 'DOI' label. To the right of the 'DOI' label is a document icon with a list of items.

What is a Data Quality Element?



What Are Quality Measures?

"My metadata already include data quality measures ."

NASA EOSDIS metadata includes two types of quality measures.

4.7 MEASURED PARAMETERS

Measured parameters are associated only at the granule level only and are important search criteria for granules. For some providers, the value of certain measured parameters determine the quality status of the granule.

Measured parameters contain the name of the geophysical parameter expressed in the data as well as associated quality flags and quality status. The quality status contains parameters used to set these measures are not preset and will be determined by the developer. These measures can occur many times either for the granule as a whole or for specific parameters. Each measure may contain the science, operational and automatic quality flags that indicate specific parameter values within a granule.

A measured parameter is uniquely identified by its **ParameterName** element.

- **QAStats** – The name of the geophysical parameter expressed in the data as well as associated quality flags and quality status.
 - **QAPercentMissingData** - Granule level % missing data for individual parameters within a granule.
 - **QAPercentOutOfBoundsData** – Granule level % out of bounds data for individual parameters within a granule.

ECHO 10.0 Data Partner's User Guide's Data Partner's User Guide

QA_Stats

QA_Flags

Version: 10.7
March 2010

- **QAPercentInterpolatedData** – Granule level % interpolated data. This attribute can be repeated for individual parameters within a granule.
- **QAPercentCloudCover** – This attribute is used to characterize the cloud cover amount of a granule. This attribute may be repeated for individual parameters within a granule. (Note - there may be more than one way to define a cloud or it's effects within a product containing several parameters; i.e. this attribute may be parameter specific)
- **QAFlags** – The name of the geophysical parameter expressed in the data as well as associated quality flags and quality status.
 - **AutomaticQualityFlag** – The granule level flag applying generally to the granule and specifically to parameters at the granule level. When applied to parameter, the flag refers to the quality of that parameter for the granule (as applicable). The parameters determining whether the flag is set are defined by the developer and documented in the Quality Flag Explanation.
 - **AutomaticQualityFlagExplanation** – A text explanation of the criteria used to set automatic quality flag, including thresholds or other criteria.
 - **OperationalQualityFlag** – The granule level flag applying both generally to a granule and specifically to parameters at the granule level. When applied to parameter, the flag refers to the quality of that parameter for the granule (as applicable). The parameters determining whether the flag is set are defined by the developers and documented in the Operational Quality Flag Explanation.
 - **OperationalQualityFlagExplanation** – A text explanation of the criteria used to set operational quality flag; including thresholds or other criteria.
 - **ScienceQualityFlag** – Granule level flag applying to a granule, and specifically to parameters. When applied to parameter, the flag refers to the quality of that parameter for the granule (as applicable). The parameters determining whether the flag is set are defined by the developers and documented in the Science Quality Flag Explanation.
 - **ScienceQualityFlagExplanation** – A text explanation of the criteria used to set science quality flag; including thresholds or other criteria.

What Are Quality Measures?

"I use consistent Quality Measures across many products."

QA_Stats

4.7 MEASURED PARAMETERS

Measured parameters are associated only at the granule level. For some providers, the value of certain measured parameters determines the visibility of the granule. Measured parameters contain the name of the geophysical parameter expressed in the data as well as associated quality flags and quality status. The quality status contains measures of quality for the granule. The parameters used to set these measures are not preset and will be determined by the data producer. Each set of measures can occur many times either for the granule as a whole or for individual parameters. The quality flags contain the science, operational and automatic quality flags that indicate the overall quality assurance levels of specific parameter values within a granule.

A measured parameter is uniquely identified by its **ParameterName** element, and has the following information:

- **QAStats** – The name of the geophysical parameter expressed in the data as well as associated quality flags and quality status.
 - **QAPercentMissingData** – Granule level % missing data. This attribute can be repeated for individual parameters within a granule.
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ECHO 10.0 Data Partner's User Guide's Data Partner's User Guide

Page 57

QAStats – Standard measures for all products

QAPercentMissingData - Granule level % missing data. This attribute can be repeated for individual parameters within a granule.

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Version: 10.7
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QAPercentCloudCover – Granule level % cloud cover. This attribute can be repeated for individual parameters within a granule.

The granule level flag applying generally to the granule and specifically to the parameter. When applied to parameter, the flag refers to the quality of that parameter (as applicable). The parameters determining whether the flag is set are defined by the developers and documented in the Quality Flag Explanation.

QAPercentCloudCoverExplanation – A text explanation of the criteria used to set automatic flags or other criteria.

The granule level flag applying both generally to a granule and specifically to the parameter. When applied to parameter, the flag refers to the quality of that parameter for the granule (as applicable). The parameters determining whether the flag is set are defined by the developers and documented in the Operational Quality Flag Explanation.

QAPercentCloudCoverOperationalExplanation – A text explanation of the criteria used to set operational flags or other criteria.

The granule level flag applying to a granule, and specifically to parameters. When applied to parameter, the flag refers to the quality of that parameter for the granule (as applicable). The parameters determining whether the flag is set are defined by the developers and documented in the Science Quality Flag Explanation.

QAPercentCloudCoverScienceExplanation – A text explanation of the criteria used to set science quality flags, including thresholds or other criteria.

What Are Quality Measures?

"I use consistent types of Quality Measure across many products."

QA_Flags

4.7 MEASURED PARAMETERS

Measured parameters are associated only at the granule level. For some providers, the value of certain measured parameters determines the visibility of the granule.

Measured parameters contain the name of the geographical parameter associated in the data, as well as

QAFlags – Classes of quality measures with product specific implementations

AutomaticQualityFlag – The granule level flag applying generally to the granule and specifically to parameters at the granule level. When applied to parameter, the flag refers to the quality of that parameter for the granule (as applicable). The parameters determining whether the flag is set are defined by the developer and documented in the Quality Flag Explanation.

AutomaticQualityFlagExplanation – A text explanation of the criteria used to set automatic quality flag, including thresholds or other criteria.

OperationalQualityFlag – The granule level flag applying both generally to a granule and specifically to parameters at the granule level. When applied to parameter, the flag refers to the quality of that parameter for the granule (as applicable). The parameters determining whether the flag is set are defined by the developers and documented in the Operational Quality Flag Explanation.

OperationalQualityFlagExplanation – A text explanation of the criteria used to set operational quality flag; including thresholds or other criteria.

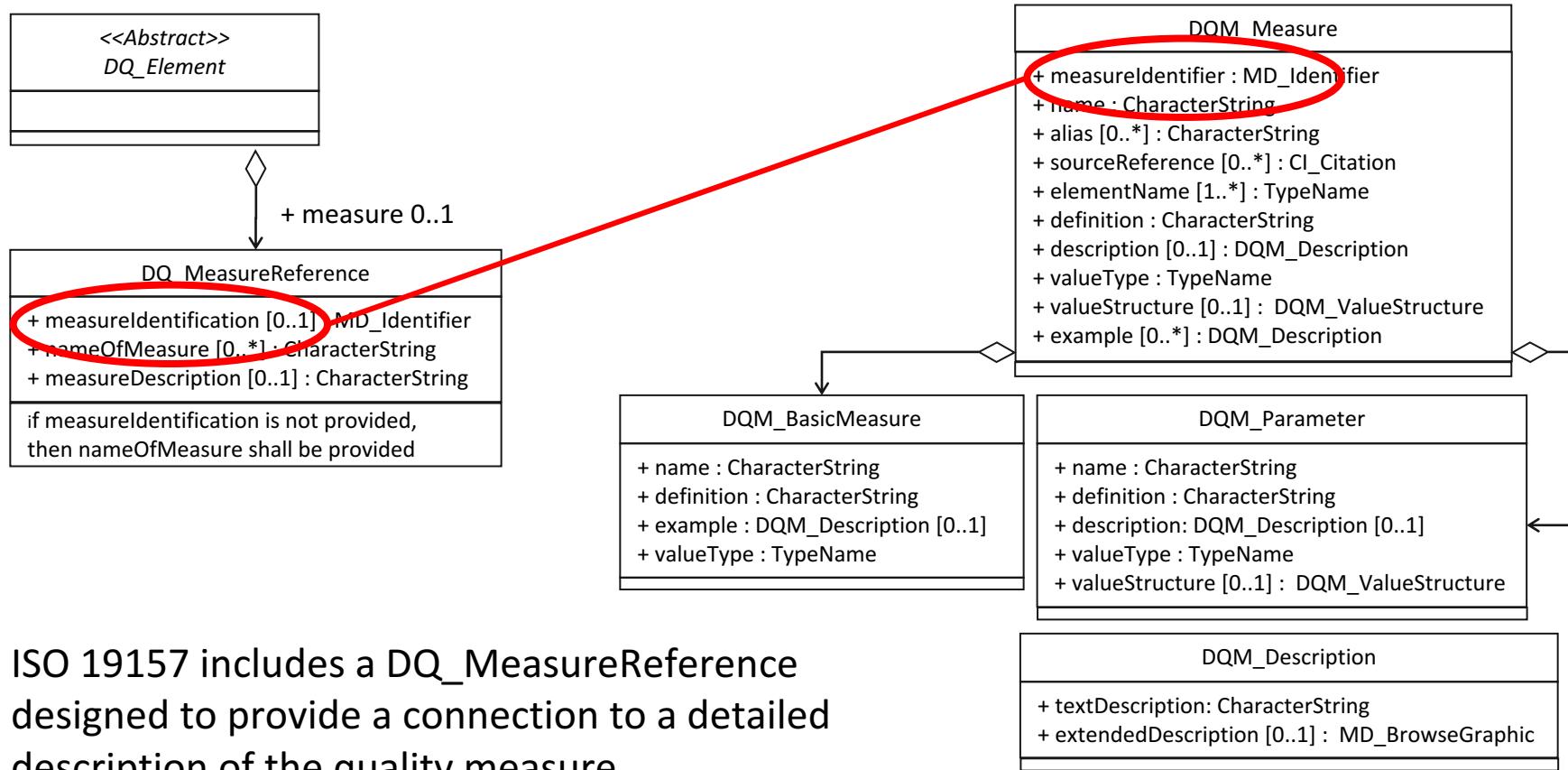
ScienceQualityFlag – Granule level flag applying to a granule, and specifically to parameters. When applied to parameter, the flag refers to the quality of that parameter for the granule (as applicable). The parameters determining whether the flag is set are defined by the developers and documented in the Science Quality Flag Explanation.

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- **ScienceQualityFlagExplanation** – A text explanation of the criteria used to set science quality flag; including thresholds or other criteria.

Data Quality Measures

"My data quality measures are consistently described in a database."



ISO 19157 includes a DQ_MeasureReference
designed to provide a connection to a detailed
description of the quality measure.

Data Quality Measures

"I need to clearly and consistently explain how I measure quality."

The ISO model for quality measures includes identifiers, definitions, descriptions, references and illustrations.

Table D.28 — Number of invalid self-overlap errors

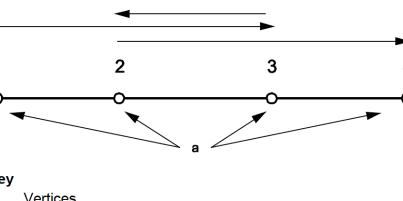
Line	Component	Description
1	Name	number of invalid self-overlap errors
2	Alias	kickbacks
3	Element name	topological consistency
4	Basic measure	error count
5	Definition	count of all items in the data that illegally self overlap
6	Description	—
7	Parameter	—
8	Value type	Integer
9	Value structure	—
10	Source reference	—
11	Example	 <p>Key a Vertices</p>
12	Identifier	27

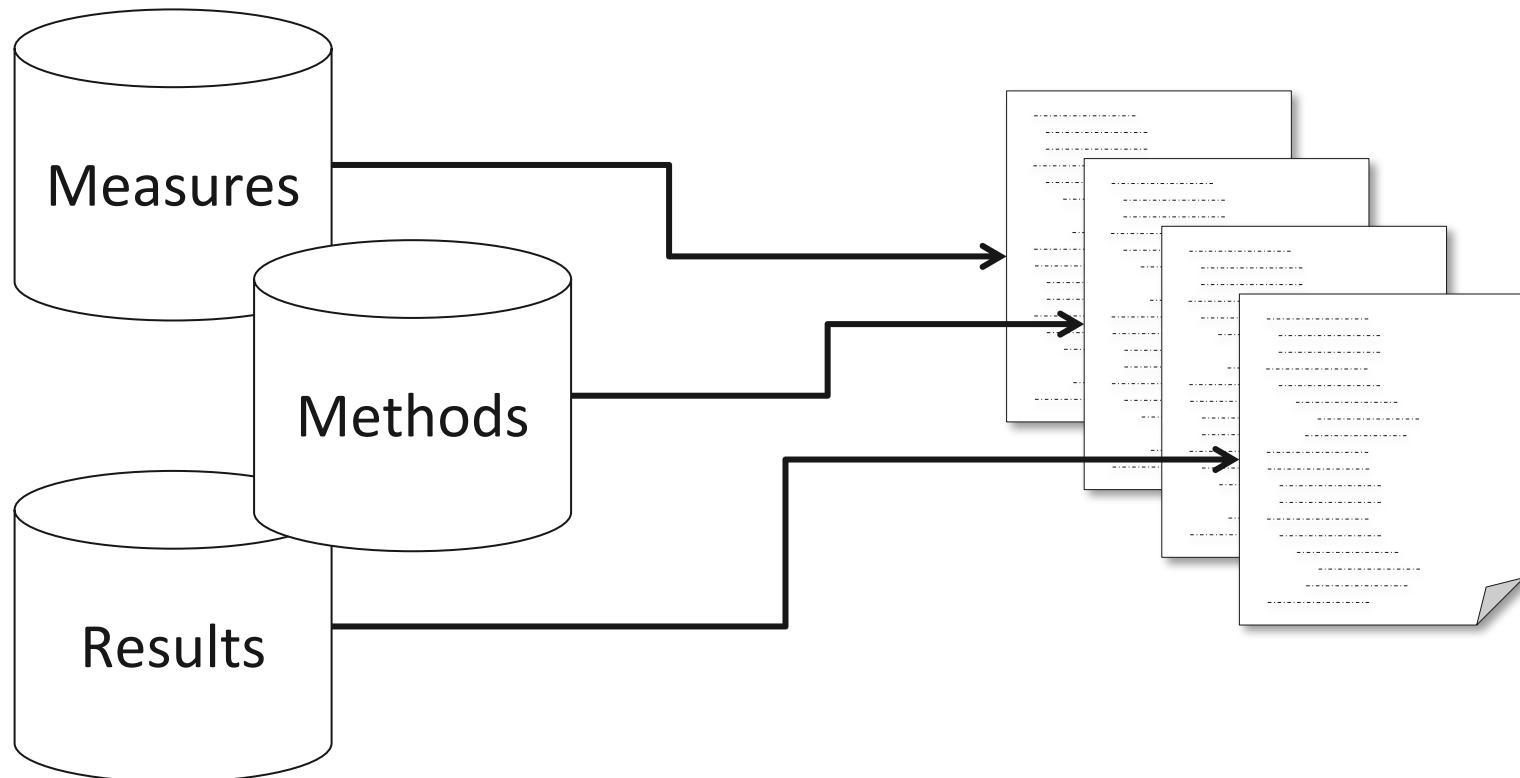
Table D.31 — Mean value of positional uncertainties excluding outliers

Line	Component	Description
1	Name	mean value of positional uncertainties excluding outliers (2D)
2	Alias	—
3	Element name	absolute or external accuracy
4	Basic measure	not applicable
5	Definition	for a set of points where the distance does not exceed a defined threshold, the arithmetical average of distances between their measured positions and what is considered as the corresponding true positions
6	Description	<p>For a number of points (N), the measured positions are given as x_{mi}, y_{mi} and z_{mi} coordinates depending on the dimension in which the position of the point is measured. A corresponding set of coordinates, x_n, y_n and z_n, are considered to represent the true positions. All positional uncertainties above a defined threshold e_{max} are then removed from the set. The positional uncertainties are calculated as</p> $e'_i = \begin{cases} e_i, & \text{if } e_i \leq e_{max} \\ 0, & \text{if } e_i > e_{max} \end{cases}$ <p>The calculation of e_i is given by the data quality measure "mean value of positional uncertainties" in one, two and three dimensions.</p> <p>For the remaining number of errors (N_R), the mean of the horizontal absolute positions is calculated as</p> $\bar{e}_{\text{excluding outliers}} = \frac{1}{N_R} \sum_{i=1}^{N_R} e'_i$ <p>A criterion for the establishing of correspondence should also be stated (e.g. allowing for correspondence to the closest position, correspondence on vertices or along lines). The criteria for finding the corresponding points shall be reported with the data quality evaluation result.</p>
7	Parameter	<p>Name: e_{max}</p> <p>Definition: is the threshold for accepted positional uncertainties</p> <p>Value type: Number</p>
8	Value type	Measure
9	Value structure	—
10	Source reference	—
11	Example	—
12	Identifier	29

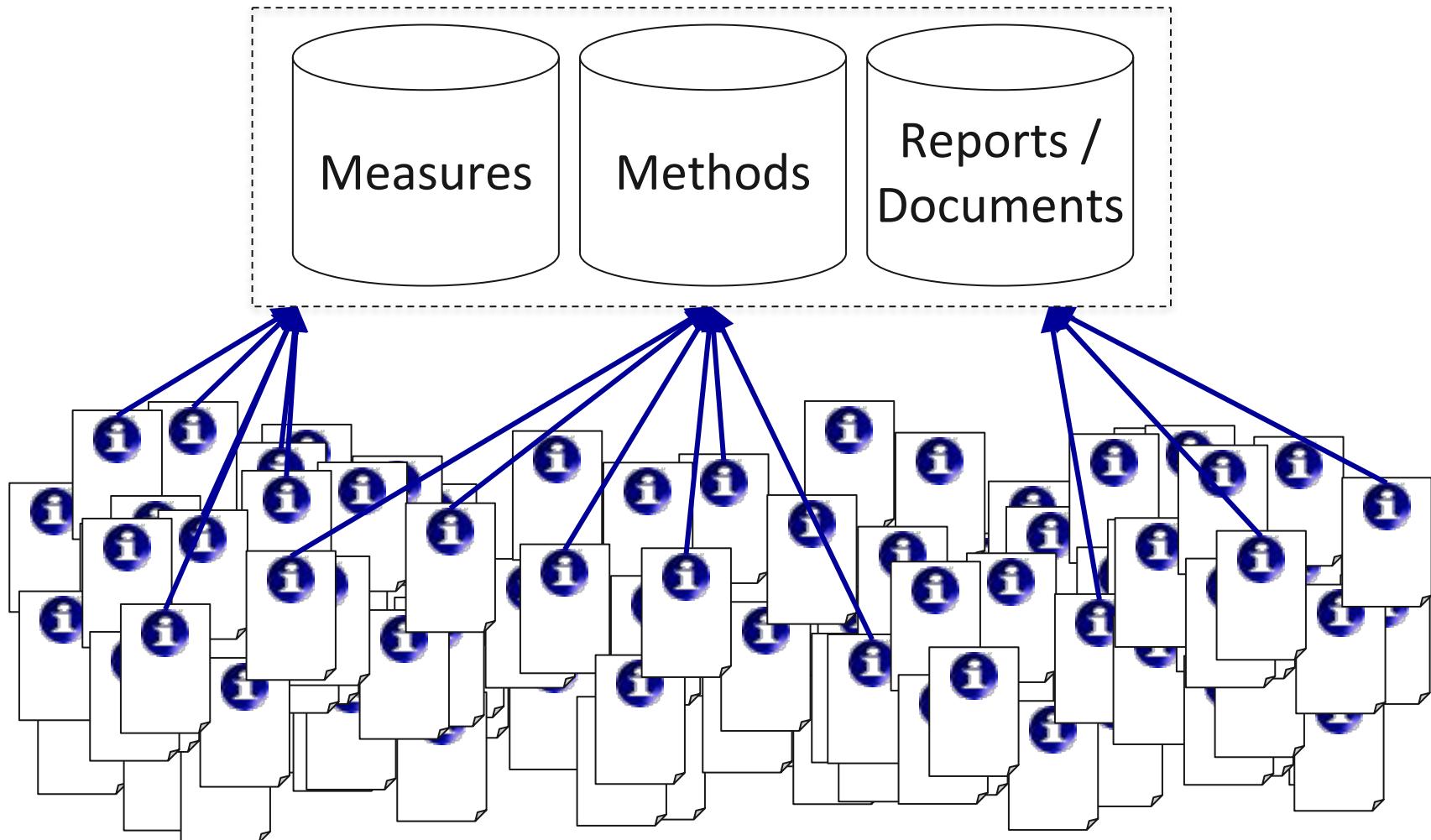
Modular DQ Information

“My data quality information exists in databases or web services.”

Major elements of the 19157 conceptual model are separate components that can be independently connected to the metadata and reused in multiple records.



Enterprise Systems?



Data Quality Results

“My metadata currently includes descriptions of the quality of my data.”

These descriptions can be included in 19157 metadata as descriptive reports.

<Quality>

Due to the lack of high resolution data available over the region for 1993-94, it has been hard to validate the product. However the maps of burnt areas correspond well with active fire maps for the region. Where large [>3km] scars are found, the detection is more reliable. In areas of small scars more problems are involved. It is hoped that the 1994-95 data set will cover the whole of the study area and be calibrated by high resolution data.

</Quality>

<gco:CharacterString>

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</gco:CharacterString>

DQ_DescriptiveResult

+ statement : CharacterString

Summary

"There are papers and web pages that describe the quality of my data."

"Users increase our understanding of data quality. We need to keep them in the loop."

"I use consistent types of Quality Measure across many products."

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"My metadata currently includes descriptions of the quality of my data."

"My data quality information exists in databases or web services."

"The quality of my data vary in time and space and different parameters have different quality measures and results."

"I need to clearly and consistently explain how I measure quality."



Documentation Resources on the ESIP Wiki

Ted Habermann, Sean Gordon, John Kozimor

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thabermann@hdfgroup.org



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Documentation Connections

Documentation concepts, recommendations and implementations in multiple dialects

The screenshot displays five pages from the wiki.esipfed.org website, each illustrating different aspects of documentation:

- Concepts Glossary**: A table defining various documentation terms like Abstract, Acknowledgement, and Additional Attributes.
- Documentation Recommendations**: A page detailing the process of creating standardized documentation requirements.
- Documentation Connections**: The main page for this presentation, featuring a diagram of overlapping circles labeled A, B, and C representing different user communities.
- Metadata Dialects**: A page explaining how metadata can be approached in various "dialects" based on user needs.
- Metadata Implementation**: A page listing various methods for documenting data, such as ISO, CSW, and WSDL.

http://wiki.esipfed.org/index.php/Category:Documentation_Connections



Concept Glossary

The screenshot shows two pages from the wiki.esipfed.org website side-by-side:

Left Page: Concepts Glossary

Concept	Description
Abstract	A paragraph describing
Acknowledgement	Provides a place to ack
Additional Attributes	Attributes used to desc
Additional Attributes - Content Information	This concept stores the
Additional Attributes - Descriptive Keywords	This concept stores the
Additional Attributes - Geographic Identifier	This concept stores the
Additional Attributes - Instrument	This concept stores the
Additional Attributes - Platform	This concept stores the
Additional Attributes - Quality Information	This concept stores the
Additional Lineage Documentation	Additional descriptive in
Additional Resource Documentation	Other documentation a
Additional Usage Documentation	Publications that descri
Address	Address line for the loc
Algorithm Citation	Information identifying t

Right Page: Concepts Glossary EML

Concept	EML Dialect Paths
Abstract	• /eml:eml/*/abstract
Attribute Constraints	• /eml:eml/*/dataTable/constraint
Attribute Definition	• /eml:eml/*/dataTable/attributeList/attribute/attributeDefinition
Attribute List	• /eml:eml/*/dataTable/attributeList
Author	• /eml:eml/*/creator
Author / Originator	• /eml:eml/*/creator
Author / Originator Email Address	• /eml:eml/*/creator/onlineUrl
Author / Originator Identifier	• /eml:eml/*/creator/@id
Author / Originator Identifier Type	• /eml:eml/*/creator/@system
Author / Originator World Wide Web Address	• /eml:eml/*/creator/electronicMailAddress
Bounding Box	• /eml:eml/*/coverage/geographicCoverage/boundingCoordinates
Contributor Name	• /eml:eml/*/associatedParty
Contributor Role	• /eml:eml/*/*/role
Coordinate Reference System (CRS)	• /eml:eml/*/horizCoordSysName
Distribution Contact	• /eml:eml/*/associatedParty/role[RoleType='distributor']
Distribution Format	• /eml:eml/*/dataTable/physical/dataFormat
Easternmost Longitude	• /eml:eml/*/coverage/geographicCoverage/boundingCoordinates/eastBoundingCoordinate
End Time	• /eml:eml/*/coverage/temporalCoverage/rangeOfDates/endDate

Dialects

The image shows two side-by-side screenshots of the ESIP wiki interface. Both pages have a header with the ESIP logo, navigation links (Page, Discussion, Read, Edit, View history, Go, Search), and user information (Ted.Habermann, My talk, My preferences, My watchlist, My contributions, Log out).

Left Page: Metadata Dialects

Content:

Metadata content can be approached in a variety of "dialects". While these dialects are often different, these languages also significantly overlap – as the documentation language is often the same regardless of the community approach. Thus, in reality, these will refer to standardized metadata documentation approaches as opposed to implementation of individual standards throughout the ESIP community.

Note: While they are discussed independently, a dialect can have the same/similar structure or the same file format.

- ADIwg (Alaska Data Integration Working Group)
- CSDGM (FGDC Content Standard for Digital Geospatial Metadata)
- DCAT (Data Catalog Vocabulary)
- Dcite (DataCite 3.1)
- DIF (Directory Interchange Format)
- Dryad
- ECHO (EARTH OBSERVING SYSTEM (EOS) CLEARINGHOUSE)
- ECS (EOSDIS Core System)
- EML (Ecological Metadata Language)
- HCLS (Dataset Descriptions: HCLS Community Profile)
- HDF EOS5 (Hierarchical Data Format Earth Observing System)
- ISO
- ISO -1
- netCDF (Network Common Data Format) Conventions
- SERF (Service Entry Resource Format)
- SOS (Sensor Observation Service)
- THREDDS (Thematic Realtime Environmental Distributed Downstream Data Services)
- WSDL (Web Service Description Language)

[Let's Start at the Beginning](#)

Right Page: CSDGM (FGDC Content Standard for Digital Geospatial Metadata)

Content:

Contents [hide]

- 1 What
- 2 Who
- 3 Objective
- 4 Notes

What [edit]

The Content Standard for Digital Geospatial Metadata (CSDGM) - commonly referred to as FGDC Metadata.

Who [edit]

CSDGM was developed by The Federal Geographic Data Committee (FGDC) - a U.S. Federal interagency committee that promotes the coordinated development, use, sharing, and dissemination of geospatial data. FGDC activities are hosted by the U.S. Geological Survey.

Objective [edit]

Allow users to: a) ascertain the fitness of the geospatial data set for an intended use; and, b) Determine the availability, means of accessing, and to successfully transfer a set of geospatial data.

Notes [edit]

Federal agencies commonly use this standard to document geospatial data. To date, it has been implemented beyond the federal level with state and local governments adopting the metadata standard as well.

Basic information about the dialect and who created it.

Recommendations

Many recommendations include multiple levels (mandatory, recommended, optional). A recommendation page gives:

1. Concept Names
2. Concept Definitions and
3. Concept Implementations (multiple dialects)

For each recommendation level

The screenshot shows a Wikipedia page titled "Data Discovery (UMM-Common)". The page has a sidebar with a "Navigation" section containing links to "Main Page", "Categories", "Recent changes", "Help", "Toolbox", "What links here", "Related changes", "Upload file", "Special pages", "Printable version", "Permanent link", and "Browse properties". The main content area has tabs for "Page" and "Discussion", and buttons for "Read", "Edit", "View history", "Go", and "Search". Below the tabs, there is a section titled "UMM-Common Required" with a "[edit]" link. A note states: "The NASA Unified Metadata Model/Mapping (UMM) includes a profile for elements that are common to all of the UMM Profiles, the UMM-Common Profile. These are the elements required by that profile." A table follows, listing concepts, their descriptions, and their dialect paths:

Concept	Description	Dialect (Fit) Paths
Resource Creation/Revision Date	The date the resource was created	BDP /bdp:metadata/bdp:idinfo/bdp:citation/bdp:citeinfo/bdp:pubdate CSDGM /csdgm:metadata/csdgm:idinfo/csdgm:citation/csdgm:citeinfo/csdgm:pubdate DCAT /dct:issued DCITE /dcite:resource/dcite:dates/dcite:date DIF /dif:DIF/dif:Data_Set_Citation/dif:Dataset_Release_Date DIF-10 /dif:DIF/dif:Dataset_Citation/dif:Dataset_Release_Date Dryad /*/dcterms:dateSubmitted ECHO /*/echo:InsertTime ECHO /*/echo>LastUpdate ECS /*/ecs:RevisionDate EML /eml:eml/*/maintenance/changeHistory/changeDate /*/eml:eml/*/pubDate HCLS dct:created HDF5.1 /hdf5:HDF5-File/hdf5:RootGroup/hdf5:Attribute[@Name='date_created']/*/hdf5:Data/hdf5:DataFromFile ISO /*/gmd:identificationInfo/*/gmd:citation/gmd:CI_Citation/gmd:date/gmd:CI_Date[normalize-space(gmd:dateType/gmd:CI_DateTypeCode)='creation']/*/gmd:date/gco:Date ISO /*/gmd:identificationInfo/*/gmd:citation/gmd:CI_Citation/gmd:date/gmd:CI_Date[normalize-space(gmd:dateType/gmd:CI_DateTypeCode)='creation']/*/gmd:date/gco:DateTime ISO /*/gmd:identificationInfo/*/gmd:citation/gmd:CI_Citation/gmd:date/gmd:CI_Date[normalize-space(gmd:dateType/gmd:CI_DateTypeCode)='revision']/*/gmd:date/gco:Date ISO /*/gmd:identificationInfo/*/gmd:citation/gmd:CI_Citation/gmd:date/gmd:CI_Date[normalize-space(gmd:dateType/gmd:CI_DateTypeCode)='publication']/*/gmd:date/gco:Date ISO /*/gmd:identificationInfo/*/gmd:citation/gmd:CI_Citation/gmd:date/gmd:CI_Date[normalize-space(gmd:dateType/gmd:CI_DateTypeCode)='publication']/*/gmd:date/gco:DateTime

Resource Title Concept

Concept	Description	Crosswalk
Resource Title	A short description of the resource. The title should be descriptive enough so that when a user is presented with a list of titles the general content of the data set can be determined.	ADIwg /adiwg:project/adiwg:idinfo/adiwg:citation/adiwg:citeinfo/adiwg:title BDP /bdp:metadata/bdp:idinfo/bdp:citation/bdp:citeinfo/bdp:title CSDGM /csdgm:metadata/csdgm:idinfo/csdgm:citation/csdgm:citeinfo/csdgm:title DCAT /dct:title DCITE /dcite:resource/dcite:titles/dcite:title DIF /dif:DIF/dif:Entry_Title DIF /dif:DIF/dif:Data_Set_Citation/dif:Dataset_Title DIF-10 /dif:DIF/dif:Entry_Title DIF-10 /dif:DIF/dif:Dataset_Citation/dif:Dataset_Title Dryad /*/dcterms:title ECHO /*/echo:ShortName /*/echo:LongName ECHO /*/echo:DataSetId ECS /*/ecs:ShortName /*/ecs:LongName EML /eml:eml/*/title HCLS dct:title HDF5.1 /hdf5:HDF5-File/hdf5:RootGroup/hdf5:Attribute[@Name='title']/hdf5>Data/hdf5:DataFromFile HDF5.1 /hdf5:HDF5-File/hdf5:RootGroup/hdf5:Group[@Name='METADATA']/hdf5:Group[@Name='COLLECTIONMETADATA']/hdf5:Attribute[@Name='LongName']/hdf5>Data/hdf5:DataFromFile ISO /*/gmd:identificationInfo/*/gmd:citation/gmd:CI_Citation/gmd:title/* ISO-1 /mdb:MD_Metadata/mdb:identificationInfo/*/mri:citation/cit:CI_Citation/cit:title/* MODS //mods:mods/mods:titleInfo/mods:title Mercury /mercury:metadata/mercury:idinfo/mercury:citation/mercury:citeinfo/mercury:title OGC-SOS /sos:Capabilities/ows:ServiceIdentification/ows:Title Onedcx /onedcx:metadata/onedcx:simpleDc/dcterms:title RDA-CISL /da:dsOverview/rda:title SERF /serf:SERF/serf:Entry_Title THREDDS /thredds:catalog/thredds:dataset/@name THREDDS /thredds:catalog/thredds:dataset/thredds:metadata/dc:title THREDDS //thredds:dataset[1]/@name UMM /umm:UMM/umm:CollectionCitation/umm>Title

ISO Explorer

SIP

Category Discussion Read Edit View history Go Search

Category:ISO Explorer

The ISO Metadata Standards (ISO 19115-1, ISO 19157, ...) provide standard metadata and an associated structure that will serve a wide variety of digital geographic data. The definitions and domain values are intended to be sufficiently generic to satisfy the metadata needs of various disciplines.

The ISO metadata are organized into a tree structure using the Unified Modeling Language (UML) and are typically implemented in standard XML (ISO 19115-1 and ISO 19157-2). The Figure shows the highest level of the ISO hierarchy. Each section shown here includes a number of elements and related classes that hold standard metadata elements.

The original ISO Explorer was developed at NOAA's National Center for Environmental Information (NCI) and is a comprehensive guide to ISO 19115-2. The ESIP developed this guide to ISO 19115-1. This effort is top create a series of pages that follow the ISO structure and show the relationships between the parents and child elements/objects, obligation, repeatability and references to other parts of the standard.

This page lists all of the other pages that are included in the ISO Explorer. Click [MD_Metadata](#) to start at the top.

Please contact the Documentation Cluster if you can help create this comprehensive guide.

Pages in category "ISO Explorer"

The following 162 pages are in this category, out of 162 total.

A

- AName
- Angle

B

- BaseUnit
- Boolean

I cont.

- ISO Data Quality
- ISO FAQ
- ISO Topic Categories
- Template:IsoOrderingFooter

L



SIP

Page Discussion Read Edit View history Go Search

MD Metadata

Comprehensive explorer of ISO 19115-1 metadata standard.

MD_Metadata

- metadataIdentifier [0..1] MD_MetadataIdentifier
- defaultLocale [0..1] PT_Locale
- parentMetadata [0..1] MD_Metadata
- metadataScope [0..*] MD_MetadataScope
- contact [0..*] C_Contact
- dateInfo [0..*] O_Date
- metadataProfile [0..*] C_MetadataProfile
- alternativeMetadataReference [0..*] O_AlternativeMetadataReference
- otherLocale [0..*] PT_Locale
- metadataLinkage [0..*] O_MetadataLinkage

MD_Metadata.png

Elements	Definition and Recommended Practice
1 metadataIdentifier	Code that uniquely identifies this metadata record, assigned and maintained by the custodian of the metadata record. Recommended Practice: value of identifier is usually the same as the name of the metadata file - for example C00500.xml. There are two general approaches to ensuring uniqueness for these identifiers: 1. use a universal unique identifier (UUID), to distinguish it from other resources. 2. include a namespace and a code guaranteed to be unique in that namespace. For example: gov.noaa.class:AERO100. In this case gov.noaa.class is a namespace and AERO100 is a code guaranteed to be unique in that namespace
2 defaultLocale	Default language, country of origin and characterSet used in metadata. Locale is mandatory when more than one language is used in free text descriptions
3 parentMetadata	Citation to a parent level metadata record
4 metadataScope	Scope of resource to which the metadata applies. Now includes an MD_ScopeCode and a name for a hierarchy level. Repeat if more than one scope is applicable to this metadata description.
5 contact	Individual and/or organization responsible for metadata creation and maintenance. Use roleCode="pointOfContact". Provide contact details, such address, phone and email.
6 dateInfo	Date of last metadata update. Highly recommend revisiting the metadata content annually to ensure that all the information is still relevant. Use ISO 8601 extended format: YYYY-MM-DD or YYYY-MM-DDTHH:MM:SS.
7 metadataStandard	Citation of the metadata standard used.
8 metadataProfile	Citation of the profile(s) of the metadata standard used.
9 alternativeMetadataReference	Citation to alternative metadata for the resource.
10 otherLocale	Alternative language, country of origin and characterSet used in metadata.
11 metadataLinkage	Online location information for the metadata.
12 spatialRepresentationInfo	Spatial representation properties for Gridded datasets.

ISO Explorer Pages

Class Name

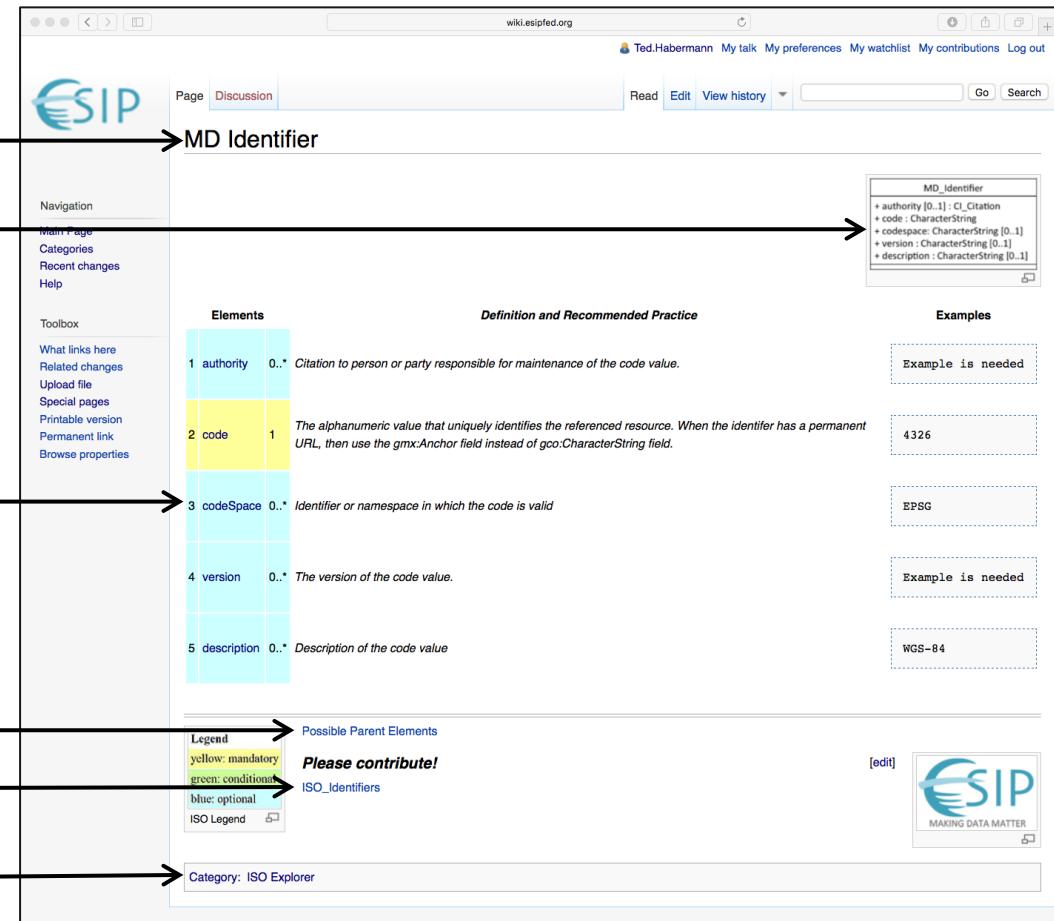
UML

Element Names,
Definitions and
Examples

Parents

Guidance

All Explorer Pages



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