

CEOS
Working Group on Information Systems and
Services
Data Stewardship Interest Group

Data Stewardship Reference Model
White Paper
Version 0.2

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Background

One of the CEOS WGISS Preservation and Stewardship Interest Group pillars represents drafting common, cross-agency, best practices and guidelines for data stewardship, for possible adoption by WGISS. The need of a Reference Model for data stewardship planning and implementation first arose in the frame of the CEOS 2017-2019 Work Plan. The requested activity refers to preparing a reference model that provides guidelines and recommendations for the preservation and improvement of data, including a roadmap for scientific data stewardship improvement.

Scope

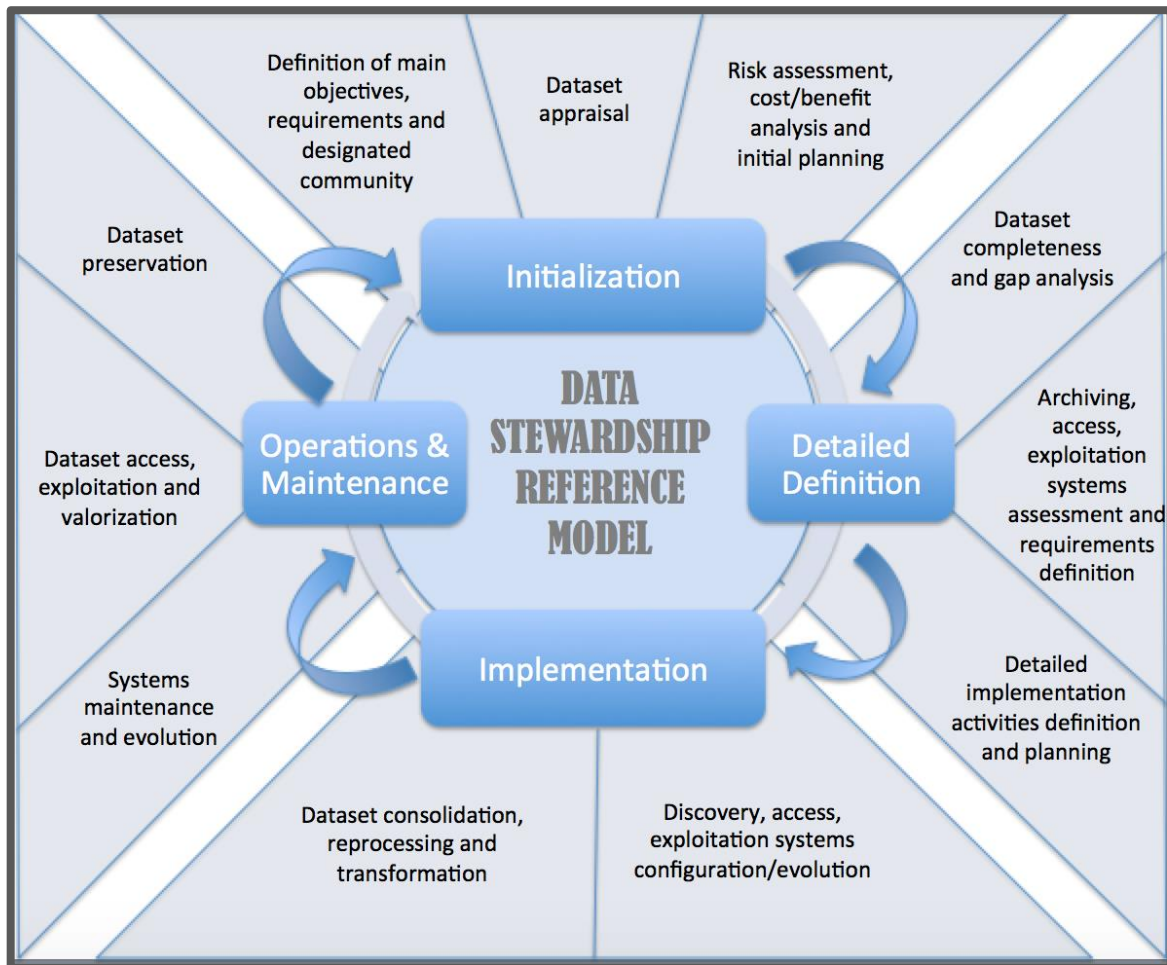
This white paper is intended to assist data owners and data managers in Earth observation (EO) data centres in the task of implementing and improving data stewardship.

The Data Stewardship Reference model describes a series of WGISS assets to be applied and used, before, during, and/or after the end of an Earth observation mission, in order to ensure Earth observation space data sets are preserved and valorised.

Introduction

Data Stewardship or Preservation Workflow

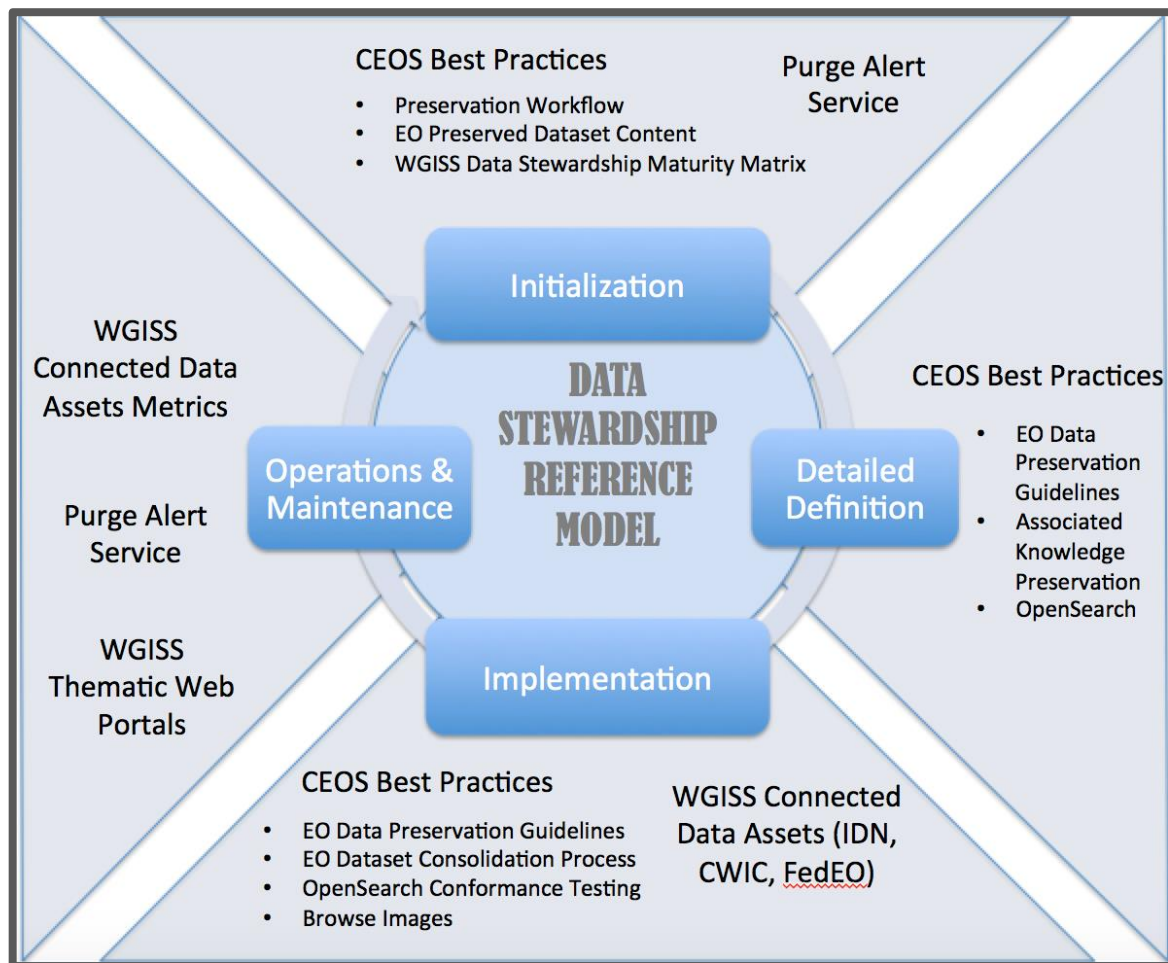
Before starting presenting the data Stewardship roadmap, it is important to have a clear understanding of the Data Stewardship and Preservation Workflow. In the figure below, the major related activities are reported for each ECSS or mission phase. Regarding all the details in terms of input/output and tasks, please refers to the CEOS Preservation Workflow Best Practices (In the Annex A the list with all assets and the relative web address).



The Stewardship process starts during the initialization phase and continues until the Operations and Maintenance phase. For each new data reprocessing the process needs to be restarted. The main goal of this white paper is to indicate which kind of WGISS assets are needed at each step in the process, and if they are required for application or only for monitoring and review.

WGISS Assets Supporting Data Stewardship

The main WGISS assets involved in the data stewardship are presented in the figure below:



The WGISS Assets can be distinguished in two categories:

- Best Practices and White Papers
- Systems and services

The Best Practices and White Papers produced in the frame of WGISS are the following:

- ✓ EO Data Glossary of Acronyms and Terms
- ✓ Preservation Workflow
- ✓ EO Data Preservation Guidelines ^[L]_[SEP]
- ✓ Preserved Data Set Content ^[L]_[SEP]
- ✓ Generic EO Data Set Consolidation Process ^[L]_[SEP]
- ✓ Persistent Identifiers ^[L]_[SEP]
- ✓ Associated knowledge Preservation
- ✓ EO Data Purge Alert Procedure ^[L]_[SEP]
- ✓ WGISS Data Stewardship Maturity Matrix
- ✓ Measuring of Earth Observation Data Usage

- ✓ Data Stewardship Reference Model
- ✓ Browse images
- ✓ CEOS OpenSearch Best Practice Documents
- ✓ CEOS OpenSearch Conformance Test Plan

The System and Services implemented in the frame of WGISS are the following:

- ✓ WGISS Connected Data Assets:
 - IDN
 - FedEO
 - CWIC
 - Open Search
- ✓ Purge Alert Service
- ✓ WGISS Thematic Web Portals

Data Stewardship Reference Model

The following statements facilitate the understanding and utilization of the roadmap presented in the figure below:

WGISS ASSETS	Initialization	Detailed Definition	Implementation	Operations & Maintenance
Best Practices and White Paper				
EO Data Glossary of Acronyms and Terms	▲			▲
Preservation Workflow	▲			▲
EO Data Preservation Guidelines	▲			
Preserved Data Set Content	▲			
Generic EO Data Set Consolidation Process	▲			▲
CEOS Persistent Identifiers Best Practices				▲
CEOS Associated knowledge Preservation Best Practices	▲	▲		▲
EO Data Purge Alert Procedure				▲
WGISS Data Management and Stewardship Maturity Matrix	▲	▲	▲	▲
Measuring of Earth Observation Data Usage	▲	▲		
WGISS DSIG Browse Guidelines Document images	▲	▲		
CEOS OpenSearch Documentation		▲		
CWIC Documentation		▲		
IDN Documentation		▲		
FedEO Documentation		▲		
FDA Documentation	▲	▲		
WGISS Connected Data Assets Metrics		▲		
Systems and Services				
Purge Alert Service				▲
WGISS Thematic Web Portals			▲	▲
CWIC			▲	▲
FedEO			▲	▲
IDN			▲	▲
WGISS Connected Data Assets			▲	▲

ANNEX A

In the following table the WGISS assets and the relevant web address link:

Asset	Link
EO Data Glossary of Acronyms and Terms	http://ceos.org/document_management/Working_Groups/WGISS/Interest_Groups/Data_Stewardship/White_Papers/EO-DataStewardshipGlossary_v1.2.pdf
Preservation Workflow	http://ceos.org/document_management/Working_Groups/WGISS/Interest_Groups/Data_Stewardship/Best_Practices/Preservation%20Workflow_v1.0.pdf
EO Data Preservation Guidelines	http://ceos.org/document_management/Working_Groups/WGISS/Interest_Groups/Data_Stewardship/Recommendations/EO%20Data%20Preservation%20Guidelines_v1.0.pdf
Preserved Data Set Content	http://ceos.org/document_management/Working_Groups/WGISS/Interest_Groups/Data_Stewardship/Recommendations/EO%20Preserved%20Data%20Set%20Content_v1.0.pdf
Generic EO Data Set Consolidation Process	http://ceos.org/document_management/Working_Groups/WGISS/Interest_Groups/Data_Stewardship/Best_Practices/GenericEarthObservationDataSetConsolidationProcess_v1.0.pdf
CEOS Persistent Identifiers	http://ceos.org/document_management/Working_Groups/WGISS/Documents/WGISS%20Best%20Practices/CEOS%20Persistent%20Identifier%20Best%20Practices_v1.2.pdf
CEOS Associated knowledge Preservation	http://ceos.org/document_management/Working_Groups/WGISS/Documents/WGISS%20Best%20Practices/CEOS%20Associated%20Knowledge%20Preservation%20Best%20Practices_v1.0.pdf
EO Data Purge Alert Procedure	http://ceos.org/document_management/Working_Groups/WGISS/Interest_Groups/Data_Stewardship/Recommendations/WGISS_DSIG_Data%20Purge%20Alert_WP.pdf
WGISS Data Management and Stewardship Maturity Matrix	http://ceos.org/document_management/Working_Groups/WGISS/Interest_Groups/Data_Stewardship/White_Papers/WGISS%20Data%20Management%20and%20Stewardship%20Maturity%20Matrix.pdf
Measuring of Earth Observation Data Usage	To Be Inserted

Data Stewardship Reference Model	To Be Inserted
WGISS DSIG Browse Guidelines Document images	http://ceos.org/document_management/Working_Groups/WGISS/Interest_Groups/Data_Stewardship/White_Papers/WGISS_DSIG_Browse-Guidelines-Documents-v2_Aug2013.pdf
CEOS OpenSearch Documentation	http://ceos.org/ourwork/workinggroups/wgiss/access/opensearch/
CWIC Documentation	http://ceos.org/ourwork/workinggroups/wgiss/access/cwic/
IDN Documentation	http://ceos.org/ourwork/workinggroups/wgiss/access/international-directory-network/
FedEO Documentation	http://ceos.org/ourwork/workinggroups/wgiss/access/fedeo/
FDA Documentation	To Be Created
WGISS Connected Data Assets Metrics	http://ceos.org/ourwork/workinggroups/wgiss/connected-data-assets/
WGISS Connected Data Assets	http://ceos.org/ourwork/workinggroups/wgiss/access/
IDN	To Be Inserted
FedEO	To Be Inserted
CWIC	To Be Inserted
Purge Alert Service	http://ceos.org/ourwork/workinggroups/wgiss/preservation/data-purge-alert/
WGISS Thematic Web Portals	To Be Inserted