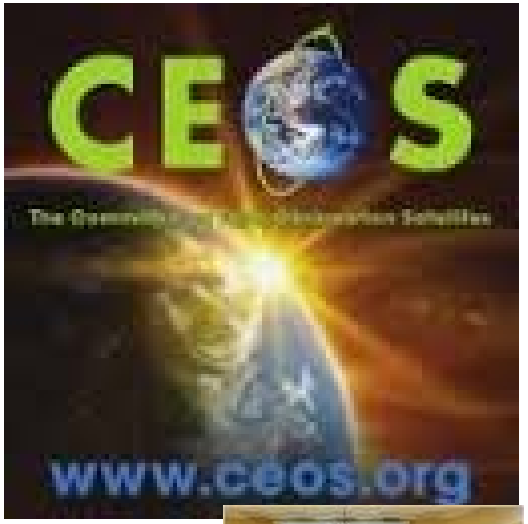
Discovery and Access of International Satellite Data Collections Using the CEOS WGISS Integrated Catalog (CWIC)

Martín Yapur & Ken McDonald
NESDIS/OSD/TPIO

NOAA EDM Virtual Workshop

June 25, 2013

Committee on Earth Observing Satellites



Troika — 1 year terms

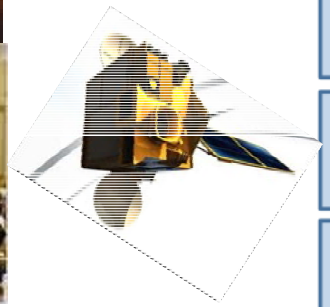
- **Past Chair** — ISRO/India
- **Chair** — CSA/Canada
- **Future Chair** — EUMETSAT

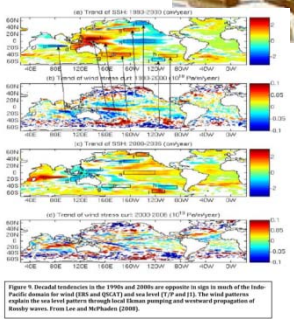
2 year terms

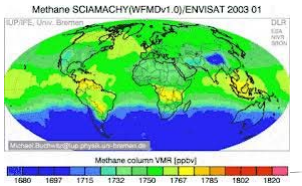
- **Systems Engineering Office (SEO)** — NASA
- **Strategic Implementation Team (SIT)** — Chair: NASA; Vice-Chair: CNES
- **Permanent Secretariat** — Chair Agency ESA, EUMETSAT, JAXA, NASA, NOAA
- **CEOS Executive Officer (CEO)** — NOAA

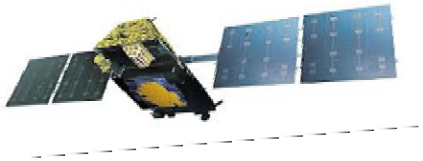
2 year terms

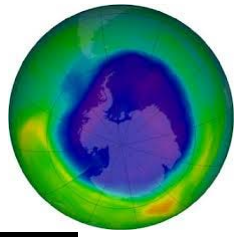
- **WGCV** — Chair CSA; Vice Chair DLR
- **WGISS** — Chair JAXA; Vice Chair CNES
- **WGCapD** — Chair INPE; Vice Chair NOAA
- **WGClimate** — Chair EC-JRC; Vice Chair NOAA
- **Virtual Constellations for GEO**
  - Atmospheric Composition (NASA/ESA)
  - Precipitation (JAXA/NASA)
  - Land Surface Imaging (USGS/ISRO/INPE)
  - Ocean Surface Topography (NASA/EUMETSAT)
  - Ocean Color Radiometry (ESA/NOAA/NASA)
  - Ocean Surface Vector Wind (NOAA/ISRO/EUMETSAT)
  - Sea Surface Temperature (ESA/NOAA)
- **CEOS SBA Coordinators**
  - Agriculture
  - Biodiversity
  - Climate
  - Disasters
  - Ecosystems
  - Energy
  - Health
  - Water











WGISS

Working Group on Information Systems and Services (WGISS)

Satoko Miura, JAXA, Chair
Richard Moreno, CNES, Vice Chair

WGISS Executive Secretariat
Michelle Piepgrass, JAXA

Interest Groups

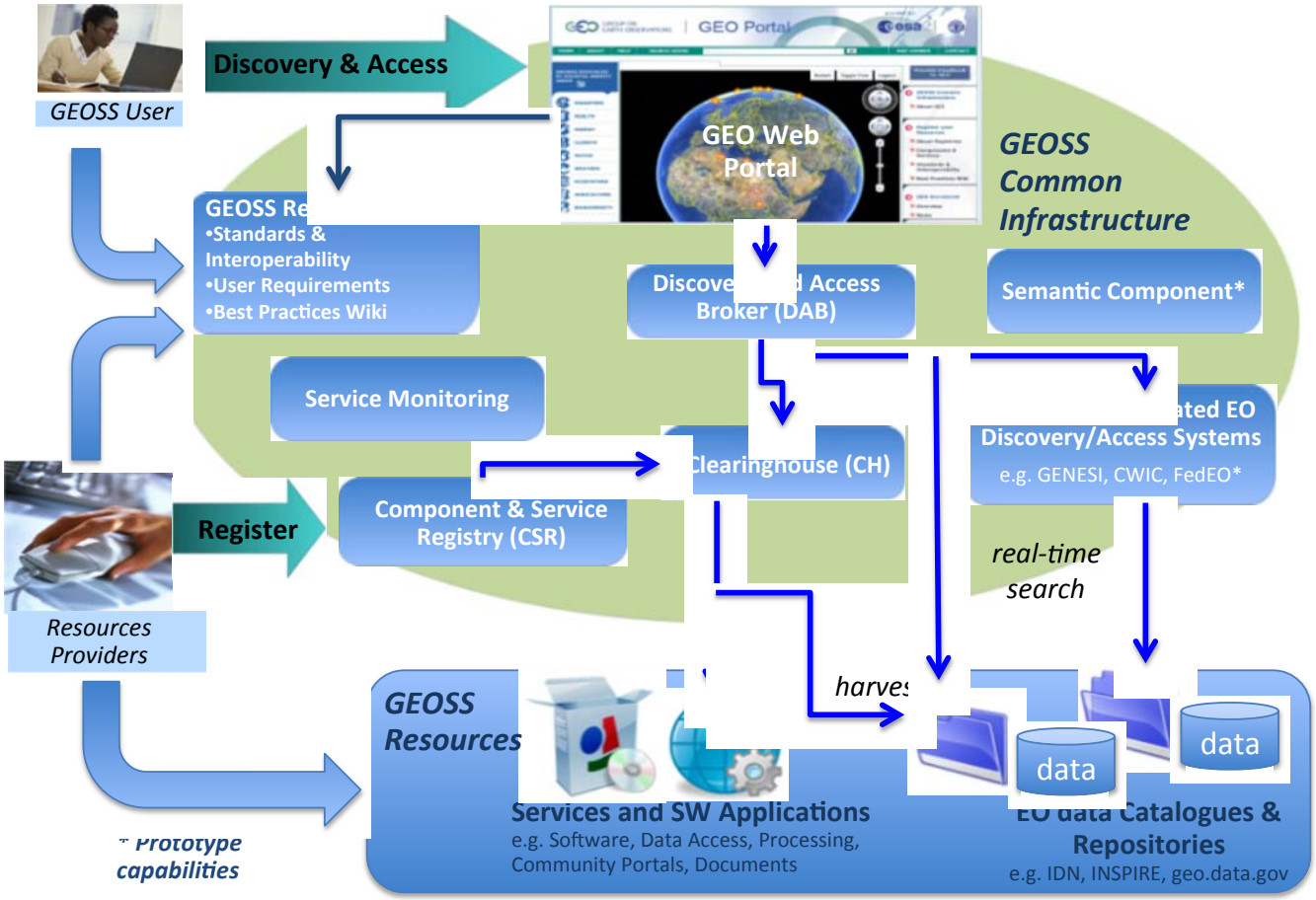
Technology Exploration	Andrew Mitchell, NASA
Data Stewardship	John Faundeen, USGS
Intl. Directory Network (IDN)	Lola Olsen, NASA
Virtual Constellation	TBD

Projects

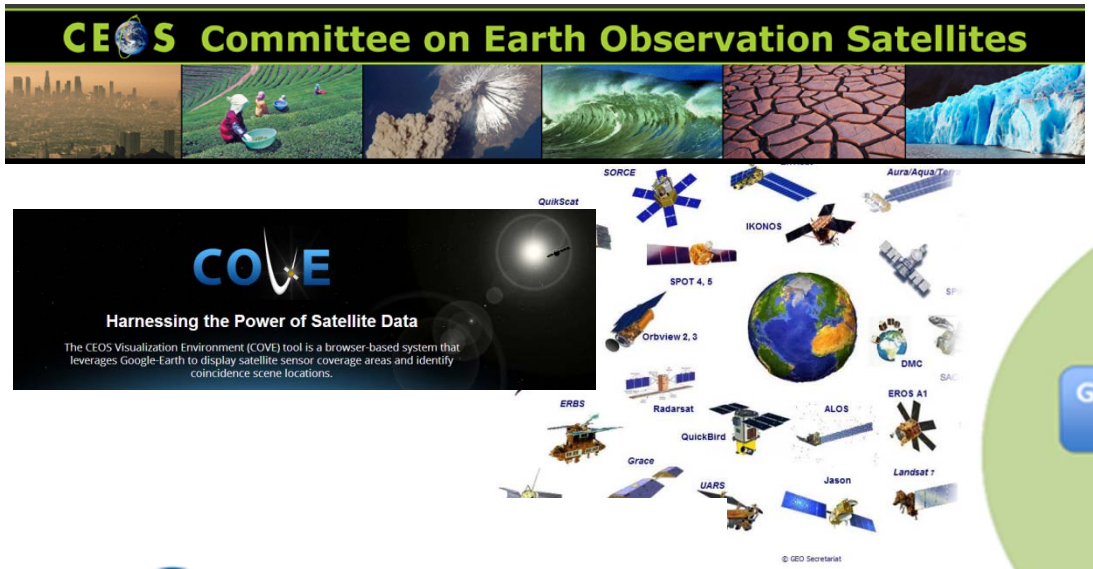
WGISS Infrastructure Services	Martin Yapur, NOAA
CWIC	Martin Yapur, NOAA, Yonsook Enloe, NASA
GA.4.Disasters	Karen Moe, NASA, Sergii Skakun, NSAU

GEOSS Common Infrastructure

GCI Architecture

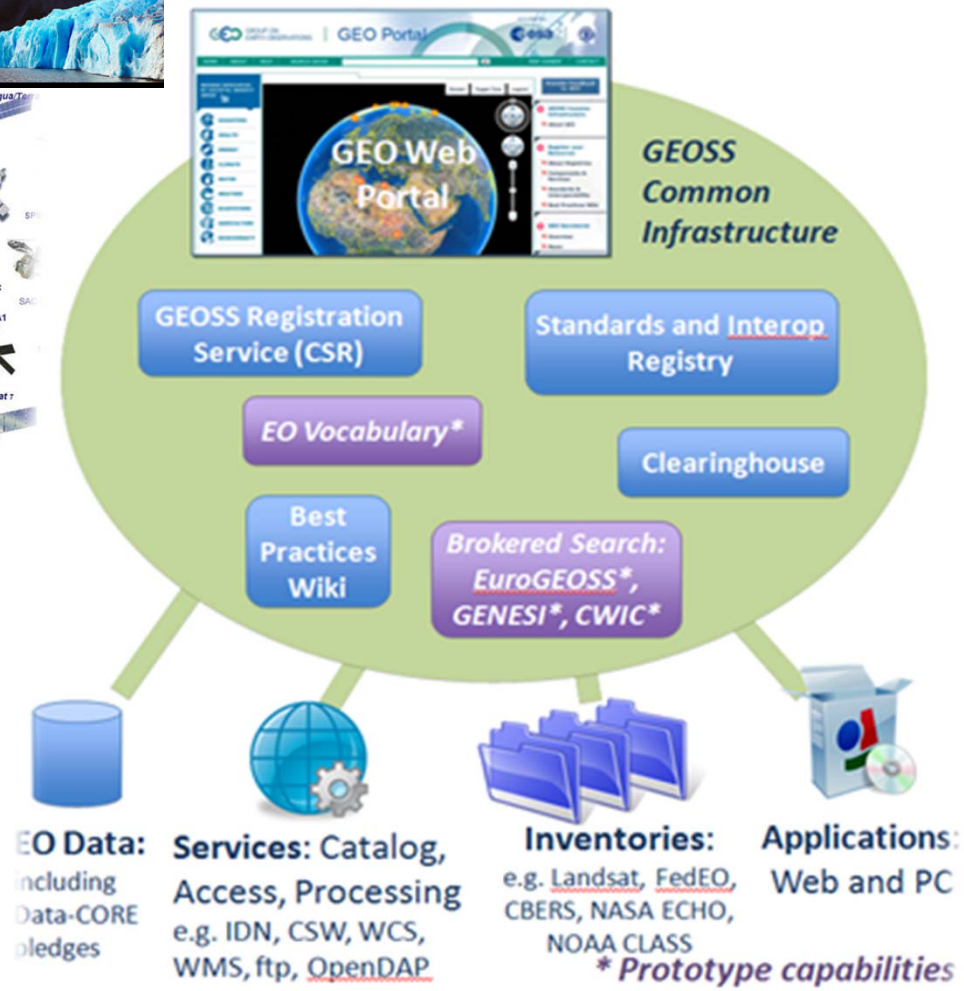


CEOS and GEOSS



GROUP ON EARTH OBSERVATIONS

CEOS WGISS



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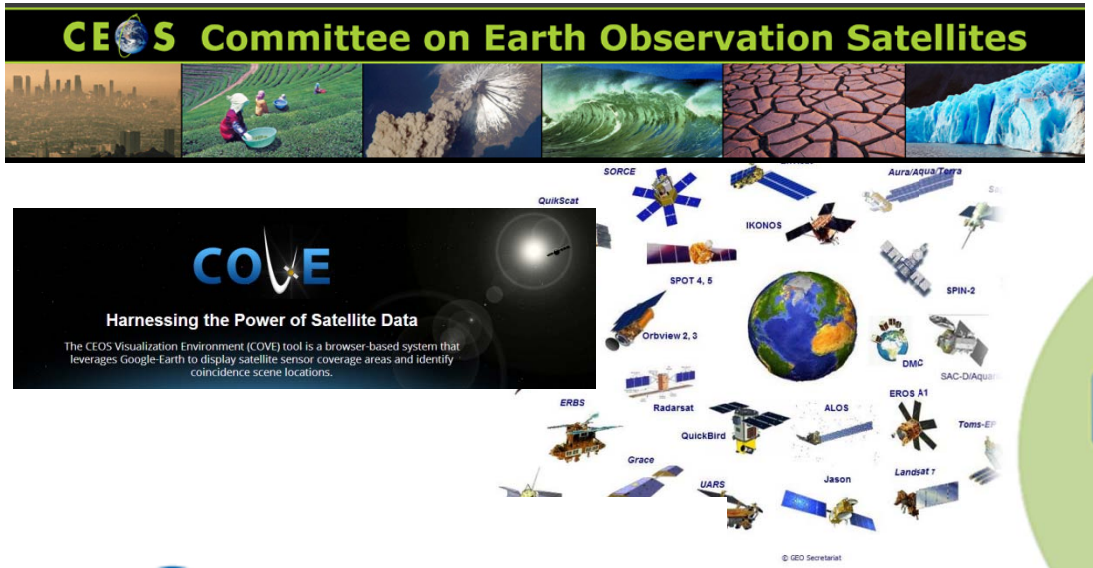
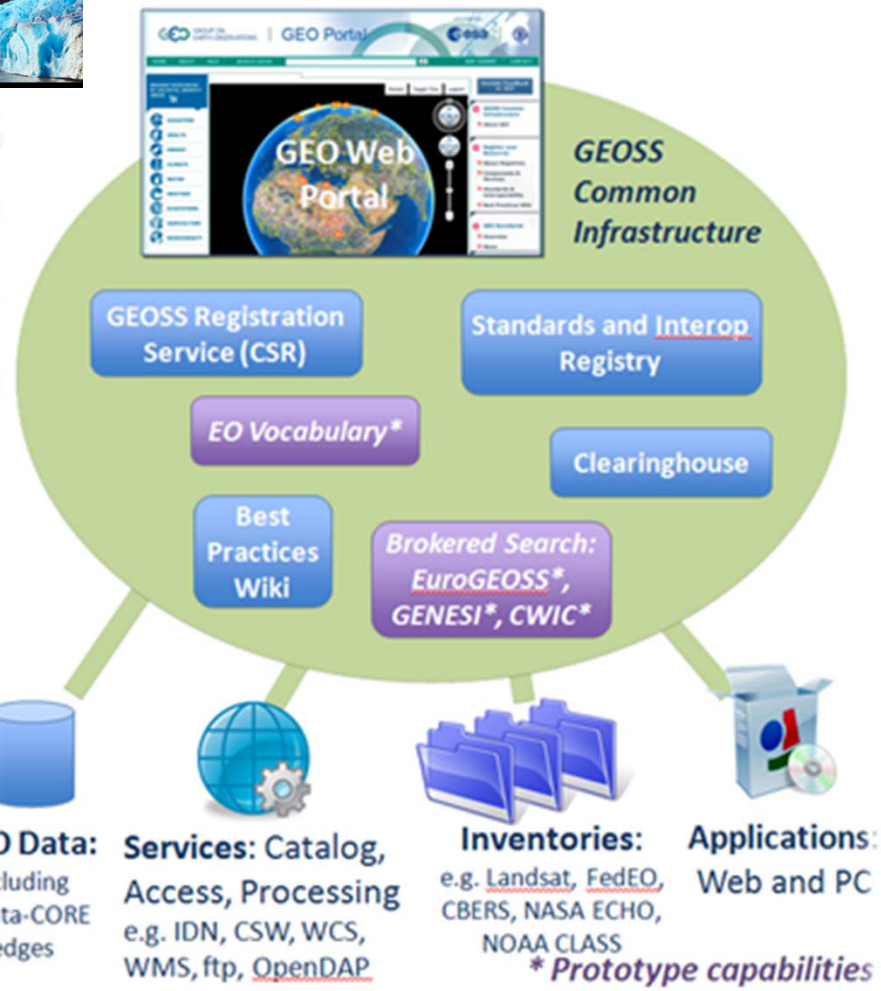




GEO GROUP ON EARTH OBSERVATIONS

CEOS WGISS

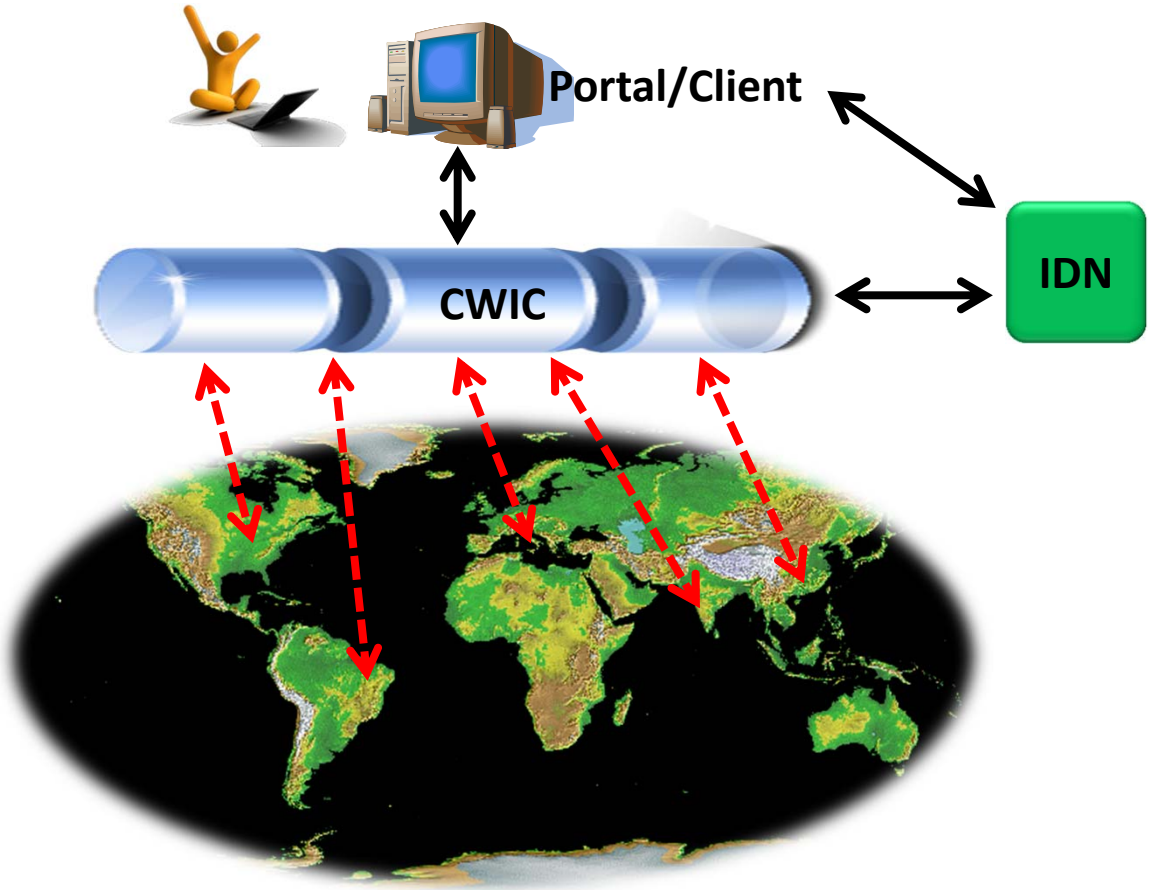
CWIC Architecture

The CWIC architecture consists of 3 main items:

CWIC middleware - provides an access point for an inventory-level search at CEOS agencies who are CWIC data providers

CWIC clients/portals - user interfaces to access cross-discipline data from CWIC data providers

IDN – International Directory Network (IDN) provides clients/portals directory-level search of CEOS agencies who have registered their collections in the IDN



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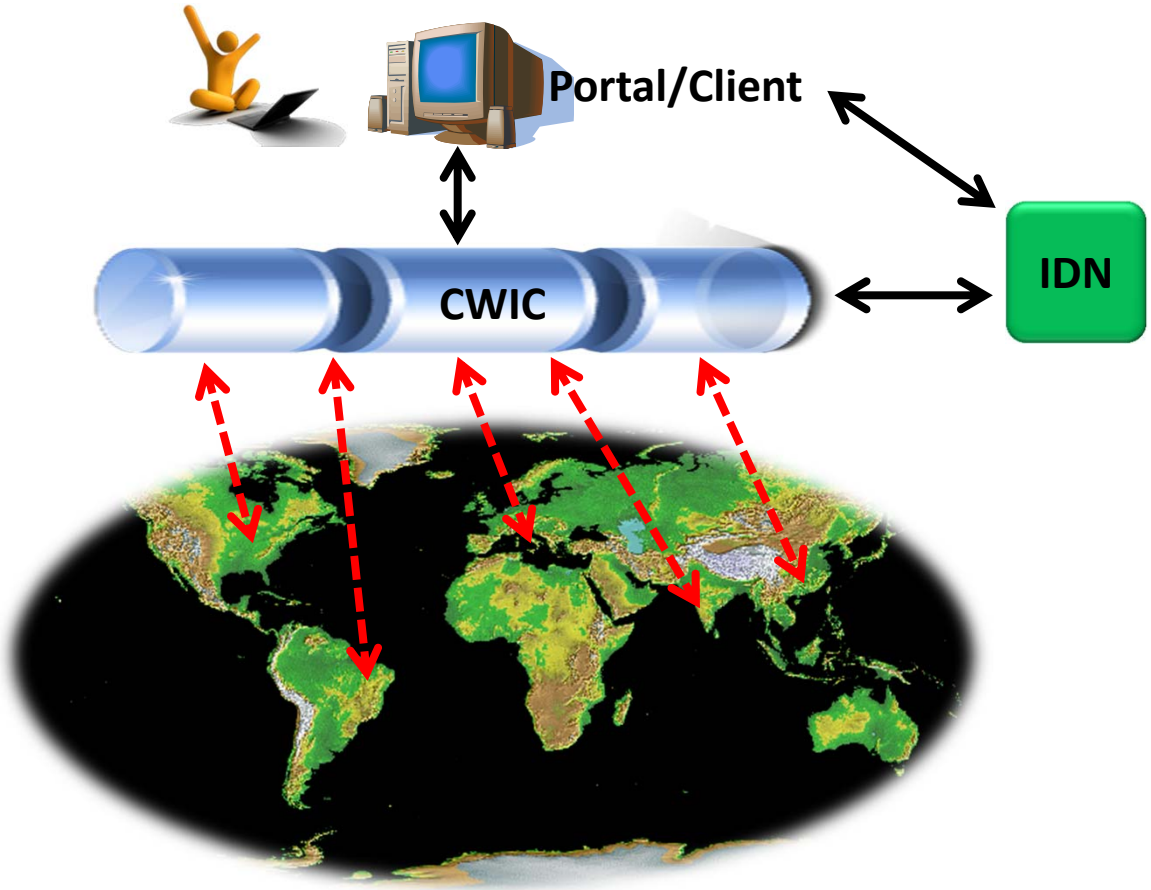
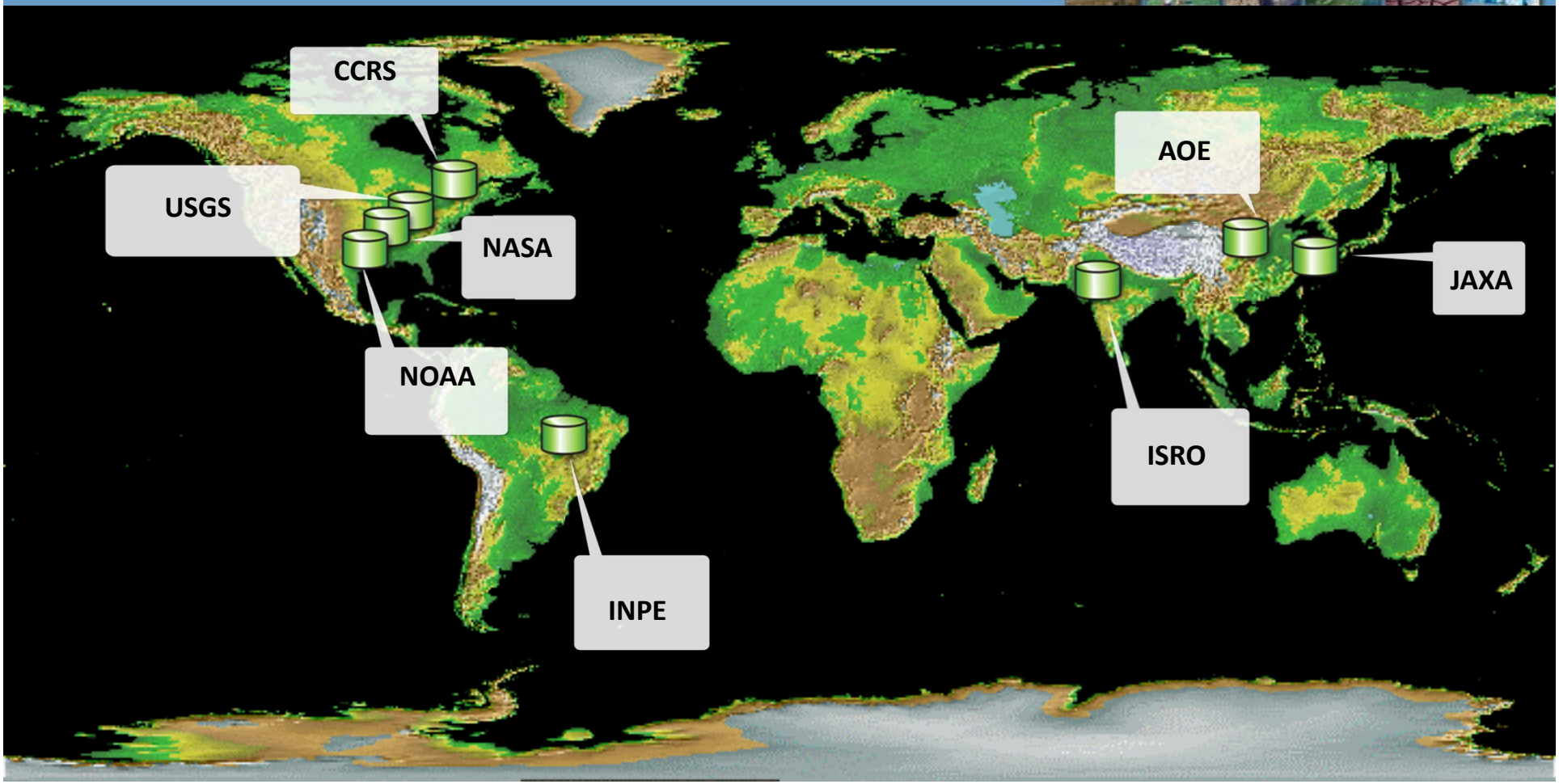


CWIC Partnering Agencies



NASA - National Aeronautics and Space Administration
NOAA - National Oceanic and Atmospheric Administration
JAXA - Japan Aerospace Exploration Agency

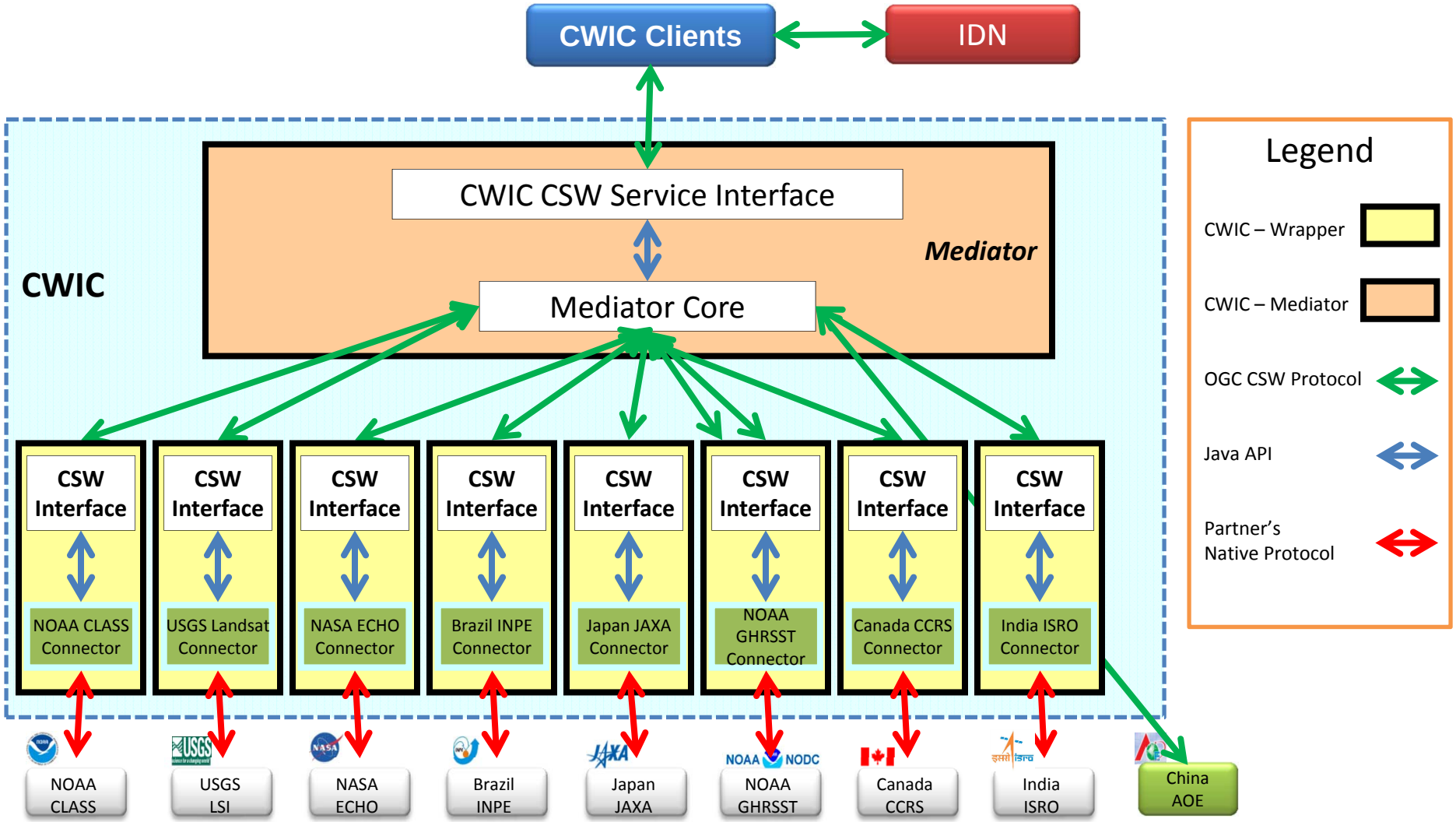
ISRO - Indian Space Research Organisation
INPE – National Institute for Space Research
USGS – United State Geological Survey
AOE - Academy of Opto-Electronics, Chinese Academy of Sciences (CAS)
(Beijing-1, NSMC/FengYun, CRESDA)

CWIC Working with CEOS Partners

- ✓ NOAA USA
- ✓ NASA USA
- ✓ USGS USA
- ✓ INPE Brazil
- ✓ CCRS Canada
- ✓ AOE China (3 centers)
- ✓ JAXA Japan
- ✓ ISRO India
- ✓ GHRSST (Virtual Constellation)
- ➢ ESA
- ➢ NSAU Ukraine
- ➢ NRSCC China

NSAU

CWIC Architecture



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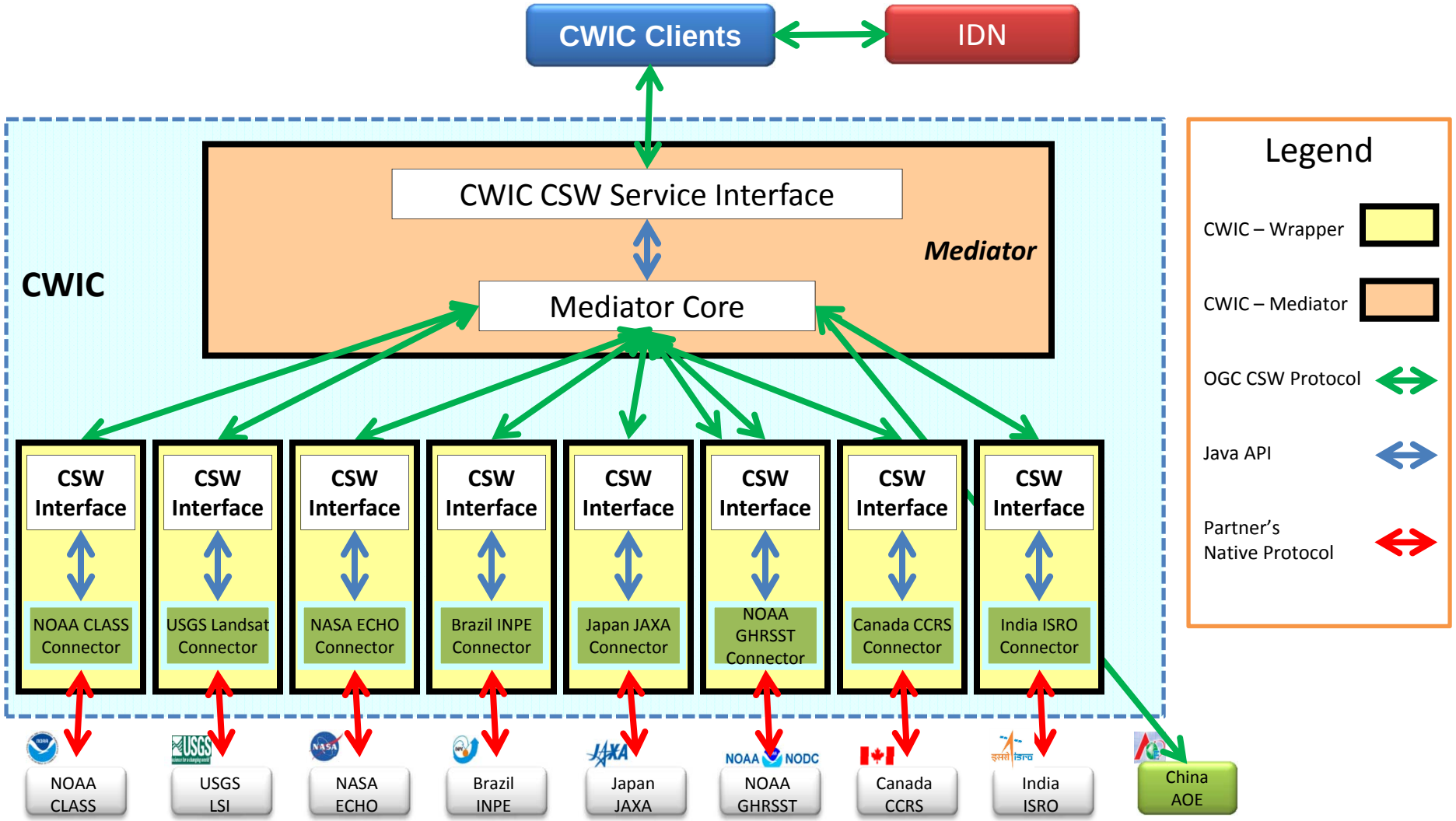

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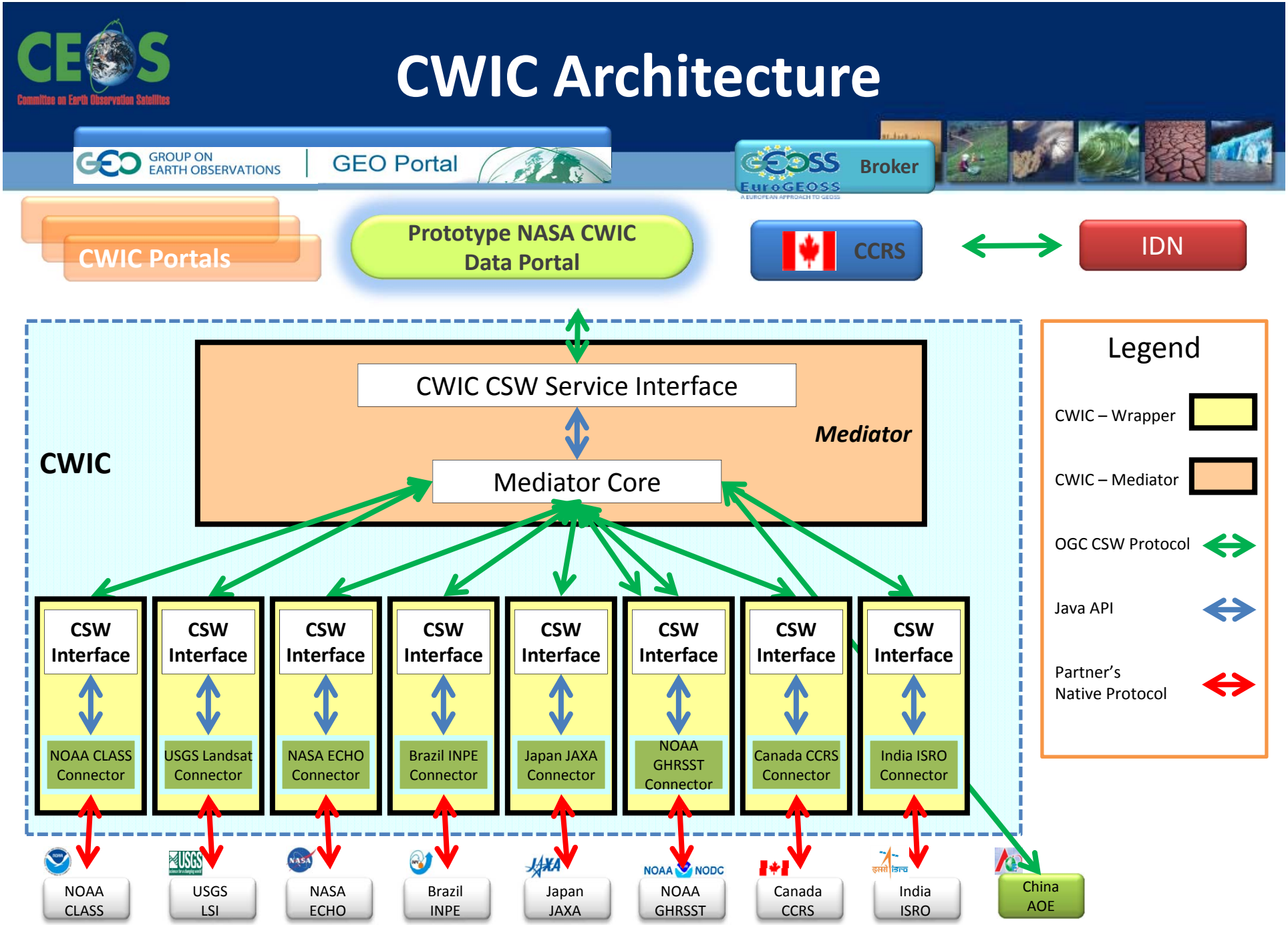
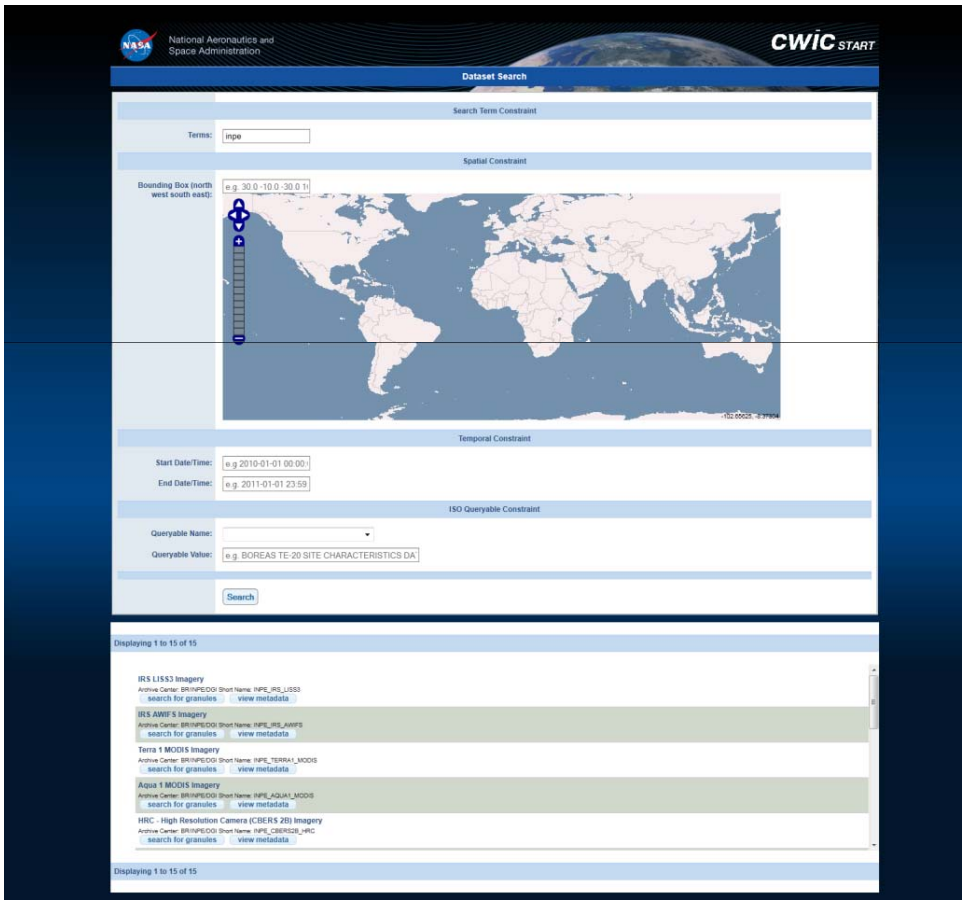


CWIC-Start Client



- NASA is developing a prototype web-based client, CWIC-Start, for discovering and accessing cross-discipline data from all of the CWIC data partners.
- CWIC-Start will allow users to search science data holdings, retrieve high-level descriptions of data sets and detailed descriptions of the data inventory, view browse images, and submit searches via CWIC to the appropriate data providers.

http://www.youtube.com/watch?v=-hXfcNI-654&feature=youtu.be

CWIC Evolution and Milestones

Initial Architecture

WGISS-27 2009

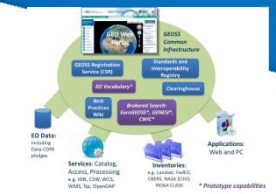
CWIC Technical Workshop I

WGISS-31 CWIC Architecture

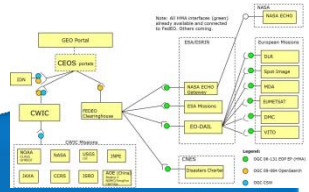
CWIC Demo (youtube)

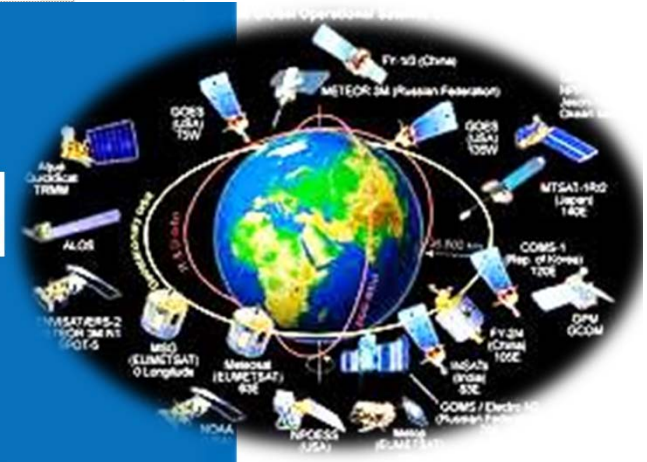
Data Provider & User Guides

CWIC Technical Workshop II



CWIC & FedEO Opensearch





CWIC Technical Workshop III

2010 | 2011 | 2012 | 2013

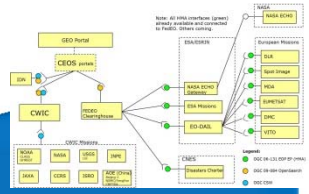
CWIC Evolution and Milestones

Initial Architecture

WGISS-31 CWIC Architecture

Data Provider & User Guides

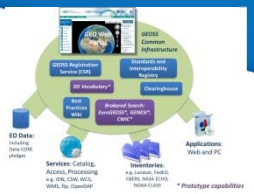
CWIC & FedEO Opensearch



WGISS-27 2009

CWIC Technical Workshop I

CWIC Demo (youtube)



CWIC Technical Workshop II

CWIC Technical Workshop III

2010	2011	2012	2013

FedEO Implementation for European data Discovery & Access

IMPLEMENTATION COMPLETED

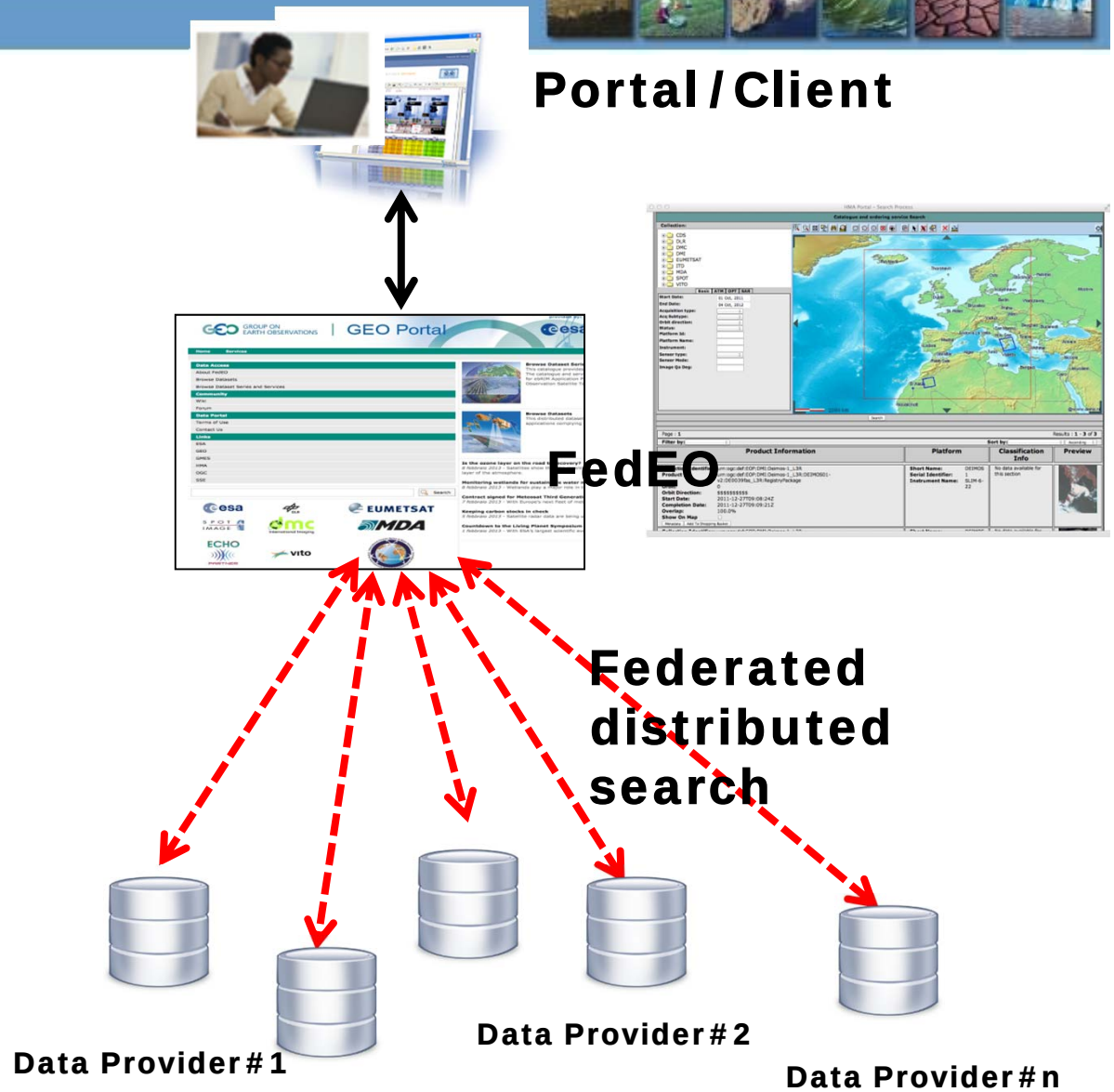
- ESA
- DLR
- EUMETSAT
- CNES
- VITO
- MDA
- DMCii
- Astrium GbH (ITD)
- DEIMOS
- E-GEOS/ASI
- Spotimage

IMPLEMENTATION ONGOING

- RapidEye
- Euromap
- EUSI

IMPLEMENTATION UPCOMING

- Proba-V



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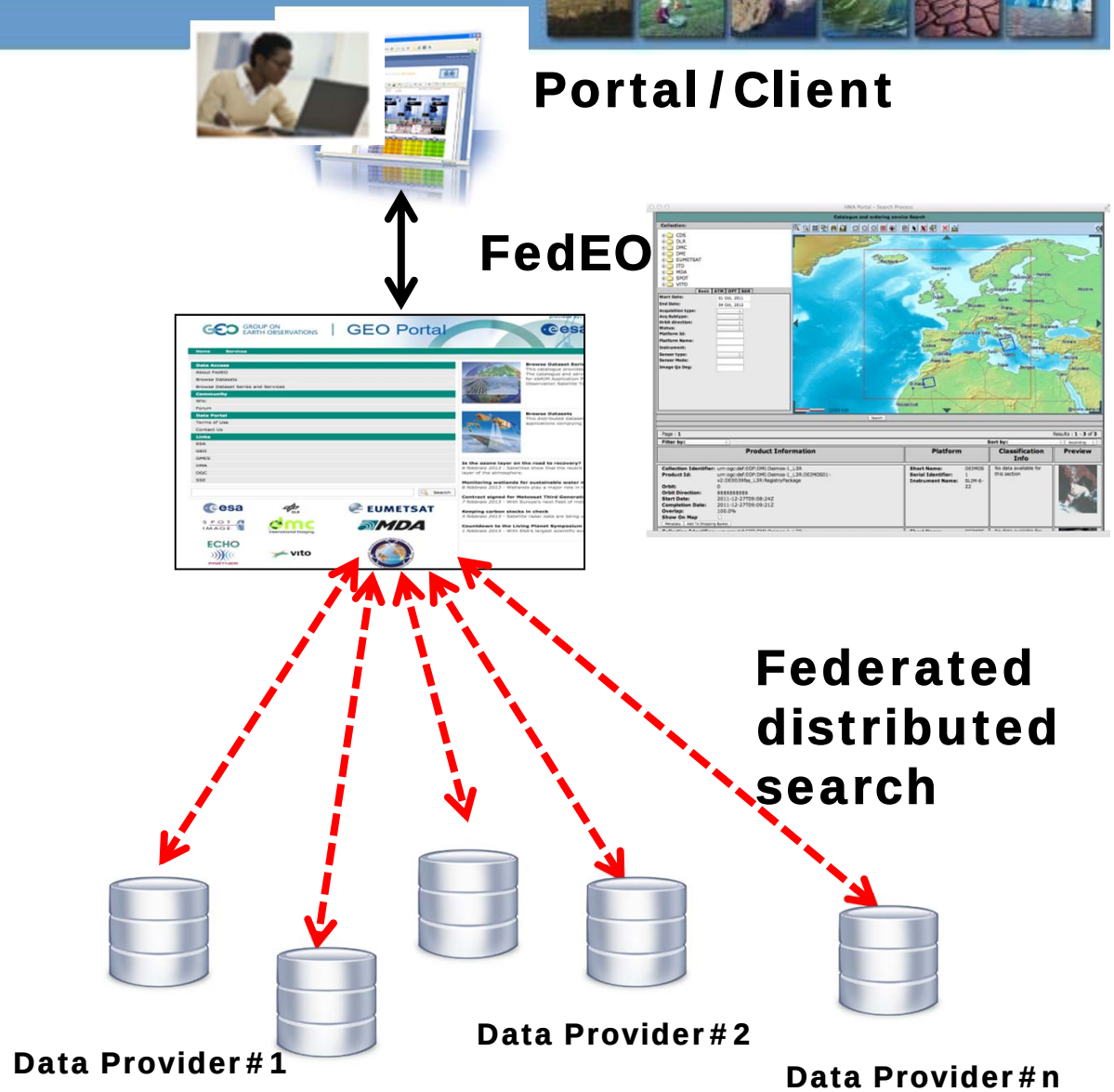
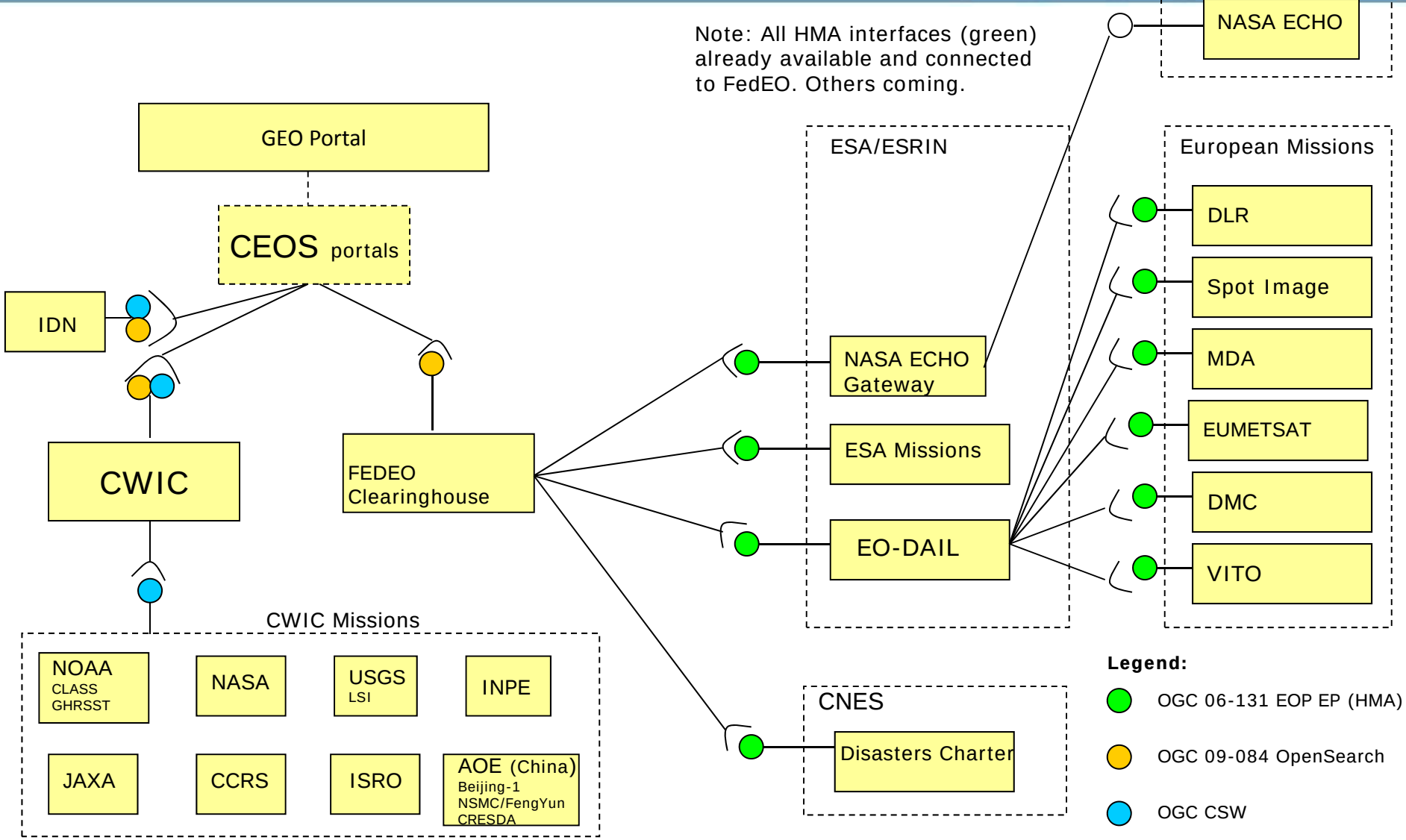


CWIC/FedEO Interop. Slide



http://wgiss.ceos.org/cwic

CWIC Project

Details

Last Updated on Tues

Welcome to the WGISS Archite

Project lead name and contac

- Martin Yapur (NOAA)
- Yonsook Enloe (NASA)

CEOS WGISS Integrated Catalog (CWIC)

See how the Directory Information in the IDN is used with data of interest:

CWIC Data Portal Demonstration (YouTube video)

How-To Guides for CWIC Partners

CWIC DIF Guide - How to register data collections in the

CWIC Client Guide - How to connect your Portal to CWIC

CWIC Data Partner Guide - How to offer your agency sate

CWIC Technical Documents

Initial Design

WGISS Search Criteria

Details of satellite data metadata at CWIC Data Partners

Mapping Dataset IDs to IDN/GCMD DIF Entry IDs

Global Change Master Directory (GCMD)/International Directory Network (IDN) DIFs for CEOS WGISS Integrated Catalog (CWIC) Data Provider Products

1. Introduction

The Directory Interchange Format (DIF) is a metadata
describe scientific data sets. Because of the widesprea
also has come to mean discovery level metadata. A DI
information about the data set. Seventeen are free-tex
keywords. These keywords are maintained within the
fields and keywords takes place. These controlled key
normalized searches for users. The DIF offers the esse
required in the ISO 19115 metadata standard, along wi
options. Using the DIF metadata creation tool (docBuil
using the DIF format. Each DIF entry can be extracted i
19115. For CWIC data partners, a DIF for each datas
portals can search the IDN for high level dataset inforn
format.

IDN Home Page: http://idn.ceos.org/

Add Data Set Descriptions to the GCMD/IDN: http://

CEOS CWIC Project

CEOS CWIC Project

CWIC Client Partner's Guide

Mar. 2012

Document version 20120326

CWIC Data Partner's Guide

Feb. 2012

Document version 1.1