



WP9.1: Upgrading the Common Data Index (CDI) Data Discovery & Access service

introduction

By

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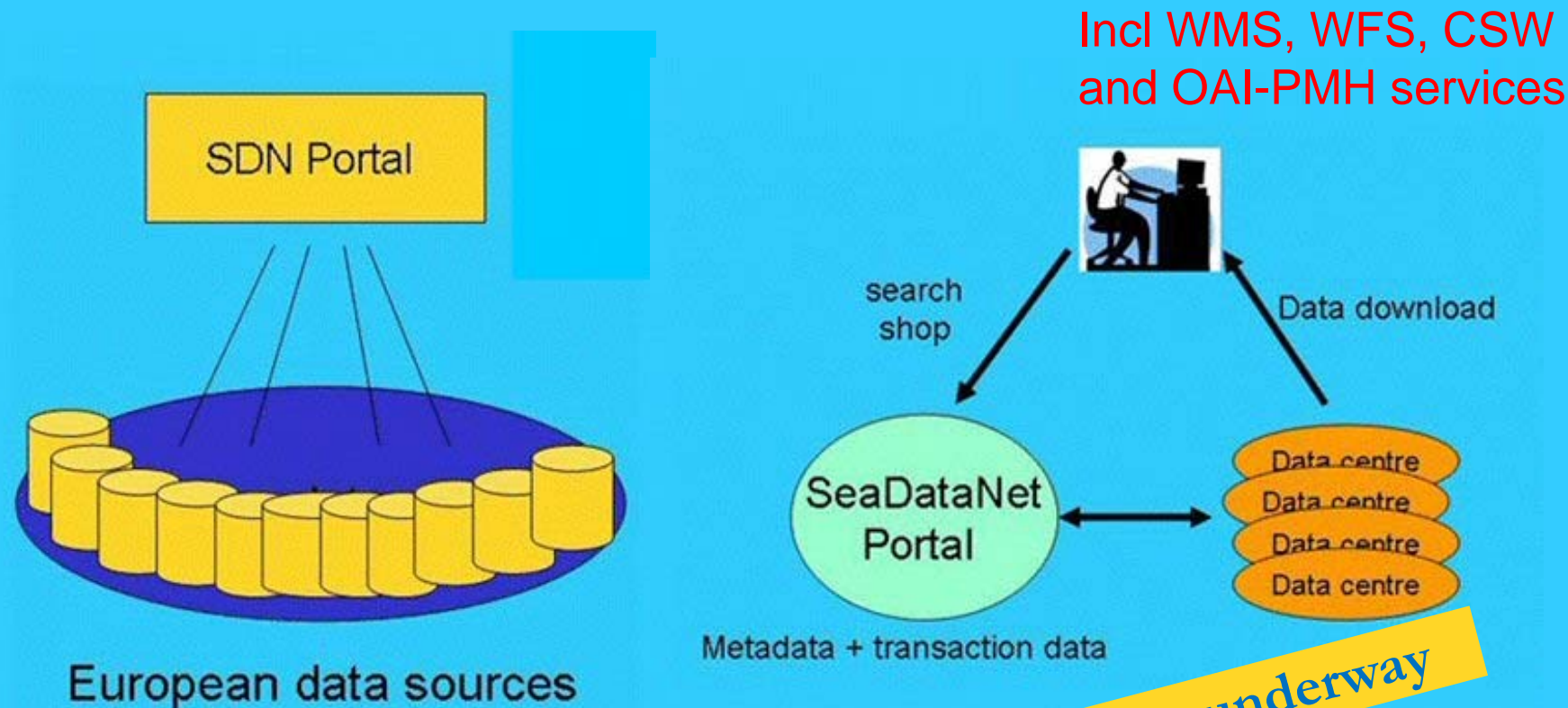
**Riga – Latvia, 30 November 2016,
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Common Data Index (CDI) service

- It provides users a highly detailed insight and unified access to the large volumes of marine and oceanographic data sets managed by the distributed data centres
- It is a fine-grained index (ISO 19115 – ISO 19139) to individual data measurements (such as a CTD cast or moored instrument record).
- INSPIRE compliant and supported by Controlled Vocabularies, and Directories (EDMO, EDMERP, CSR, EDMED)
- MIKADO editor for preparation of metadata records and NEMO software for preparation of SeaDataNet ODV files

Common Data Index (CDI) service for discovery and unified access of data



Incl WMS, WFS, CSW and OAI-PMH services

Already > 100 data centres connected and more underway



User interfaces for discovery and shopping

SEADATANET COMMON DATA INDEX (CDI) V3

Tools

Layer control Expand Add layer

- CDI entry Points
- CDI entry Tracks
- CDI entry Areas
- Grid Lines
- Regional sea
- Regional sea labels
- Main sea
- Main sea labels
- Bathymetry
- Blue Marble

Lat/long Upper-left Lower-right

Search Search Clear

Free search

Disciplines - Parameter groups

- All
- Administration and dimensions
- > Administration and dimensions
- Atmosphere
- > Atmospheric chemistry

Discovery parameters

- All
- Acoustic backscatter in the water column
- Acoustic noise in the water column
- Active seismic refraction
- Air pressure

Cruise/Station name

Projectname

Datasetname

Sea regions

- All
- World
- > Arctic Ocean
- > Baffin Bay

Waterdepth (m) from

Originator

CDI partner

Country

Access restriction

Instrument type

- All
- >2000 Hz top-bandwidth single-channel seism
- >2000 Hz top-bandwidth sub-bottom penetrat
- 1000 Hz top-bandwidth multi-channel seismic

Instrument depth (m) from

Platform type

- All
- aeroplane
- beach/intertidal zone structure
- coastal structure

Measuring area type

- All

Temporal resolution

Date (yyyymmdd) from

Duration

Unit (Hours)

Extended Search

Option to combine multiple search criteria and free text search

PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT

SeaDataNet

Cart: 0 Dataset(s) Proceed to check out Reset Basket Timeseries on Export Store query Summary Hide map ?

Reset all steps - point

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Display all selected records

Only selected records in results list

Zoom to selected

SEARCH BY: Add to basket 20 100 1000 Records Go | Found 1340076 | Show (1-20) | Previous | Next 20

Geographical Box

Time period

Parameter categories

- Water column temperature and salinity (1031241)
- Administration and dimensions (561399)
- Dissolved gases (363474)
- Carbon, nitrogen and phosphorus (245371)
- Nutrients (231455)

Disciplines

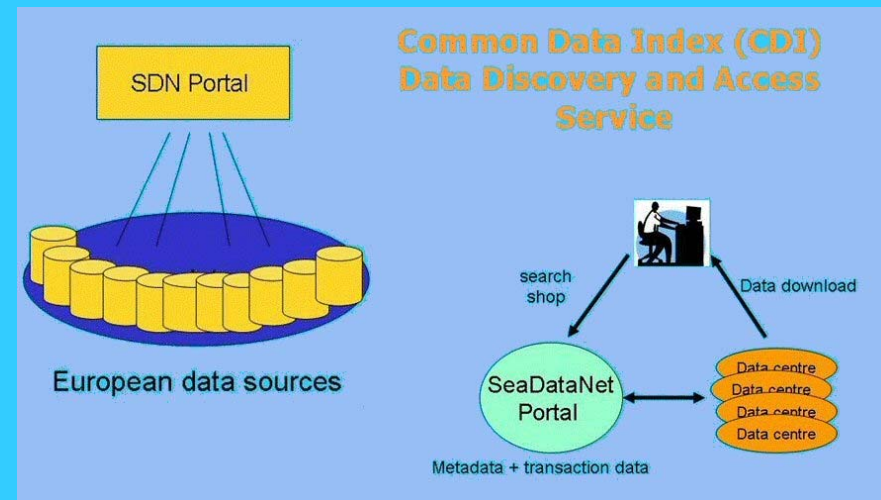
#	Data set name	Disciplines - Parameter groups	Instrument / gear type	Show
1	2003400090.ctd (00308)	Administration and dimensions > Administration and dimensions Physical oceanography > Optical properties > Water column temperature and salinity	CTD	👁
2	TS profile 292 Cruise 1998204	Physical oceanography > Water column temperature and salinity	CTD	👁
3	TS profile 606 Cruise 1996208	Physical oceanography > Water column temperature and salinity	CTD	👁
4	TS profile 774 Cruise 1996903	Physical oceanography > Water column temperature and salinity	CTD	👁
5	TS profile 243 Cruise 1999206	Physical oceanography > Water column temperature and salinity	CTD	👁
6	2011450020.ctd (00003)	Administration and dimensions > Administration and dimensions Biological oceanography > Pigments Chemical oceanography > Dissolved gases Physical oceanography	CTD	👁

Quick Search

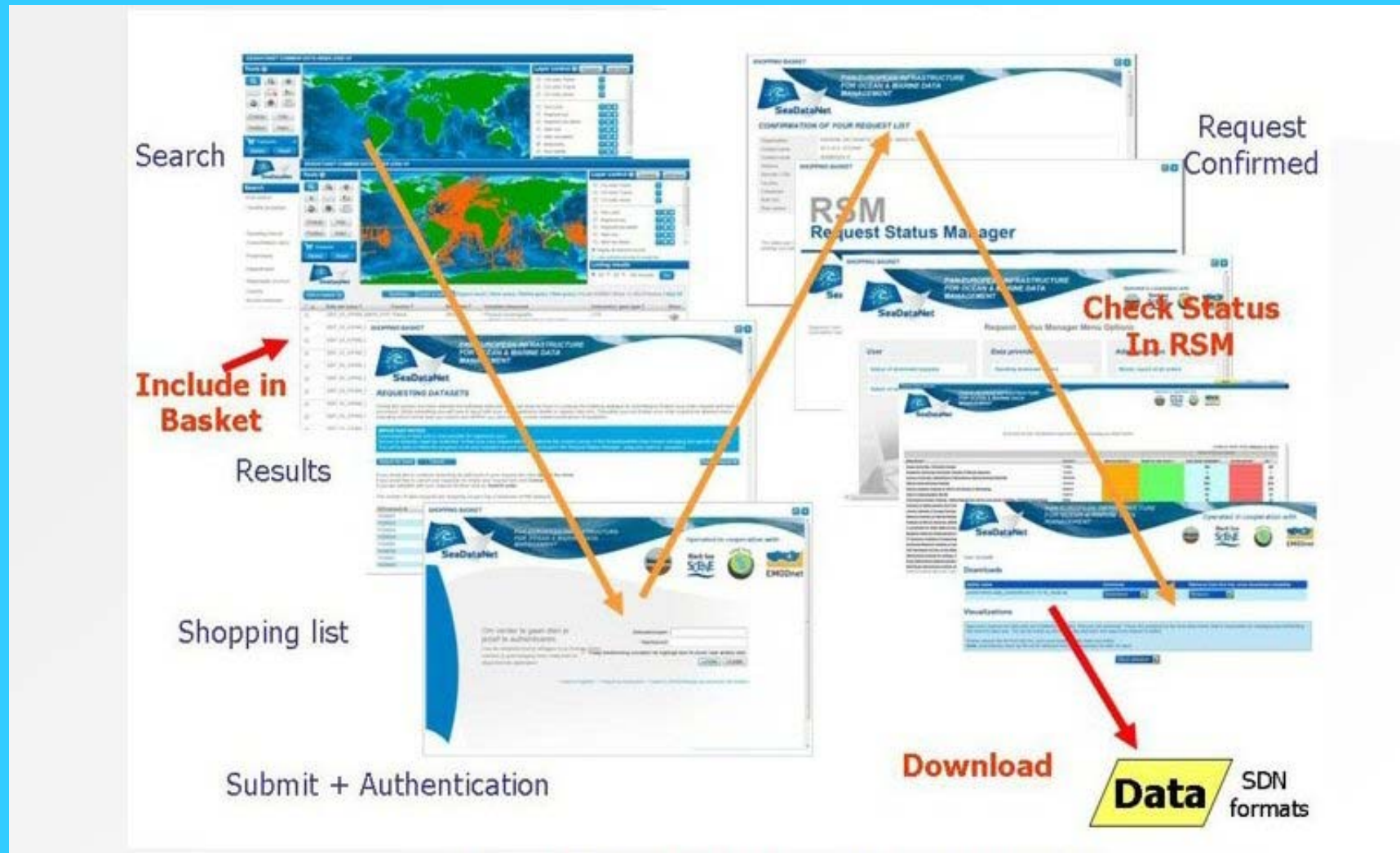
Drill down facet search – intuitive and more easy for 1st time users

Data Access Service

- An intelligent middle tier connection is configured between the SeaDataNet portal and the local data management systems at each of the data centres
- A shopping basket (max 10.000 records per basket) allows users to submit a shopping request for multiple data providers in one go and to follow its processing by each of the providers *via* an online transaction register.



Data Access – Shopping dialogue



Request Status Manager (RSM)

- Tracking and tracing of all shopping requests by users, data providers and system managers
- Analysis of transactions and report generator
- Checking status of orders and downloading from data providers

Request Status Manager Menu Options

User

- Status of download requests
- Status of seismic viewing requests

Data provider

- Standing download orders
- Standing seismic viewing orders
- History of all download orders
- History of all viewing orders
- Report of all orders
- Report of robot testing

Administration

- Master report of all orders
- Master report of robot testing

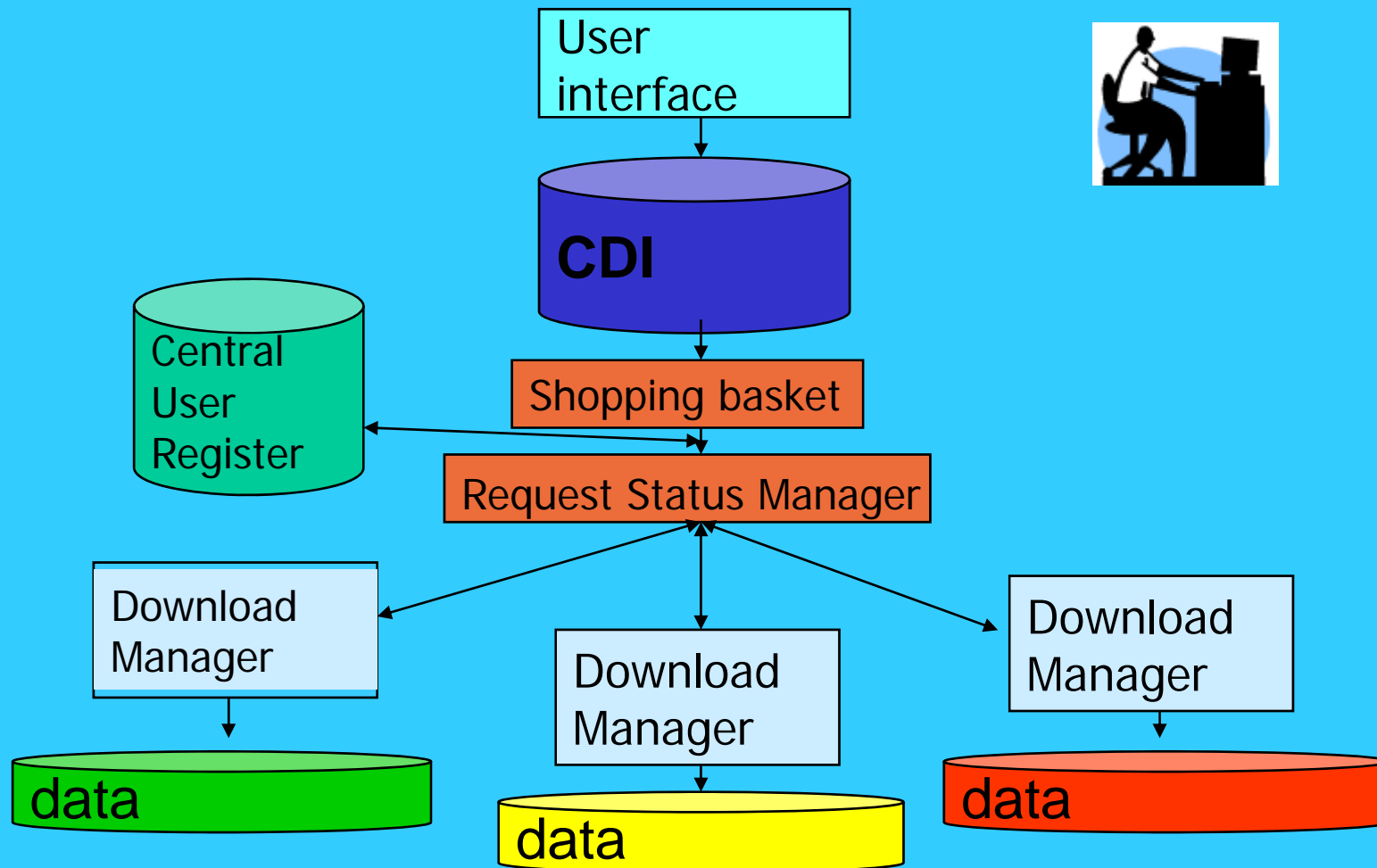
Request Status Manager

Overview of your download requests and processing per Data Centre

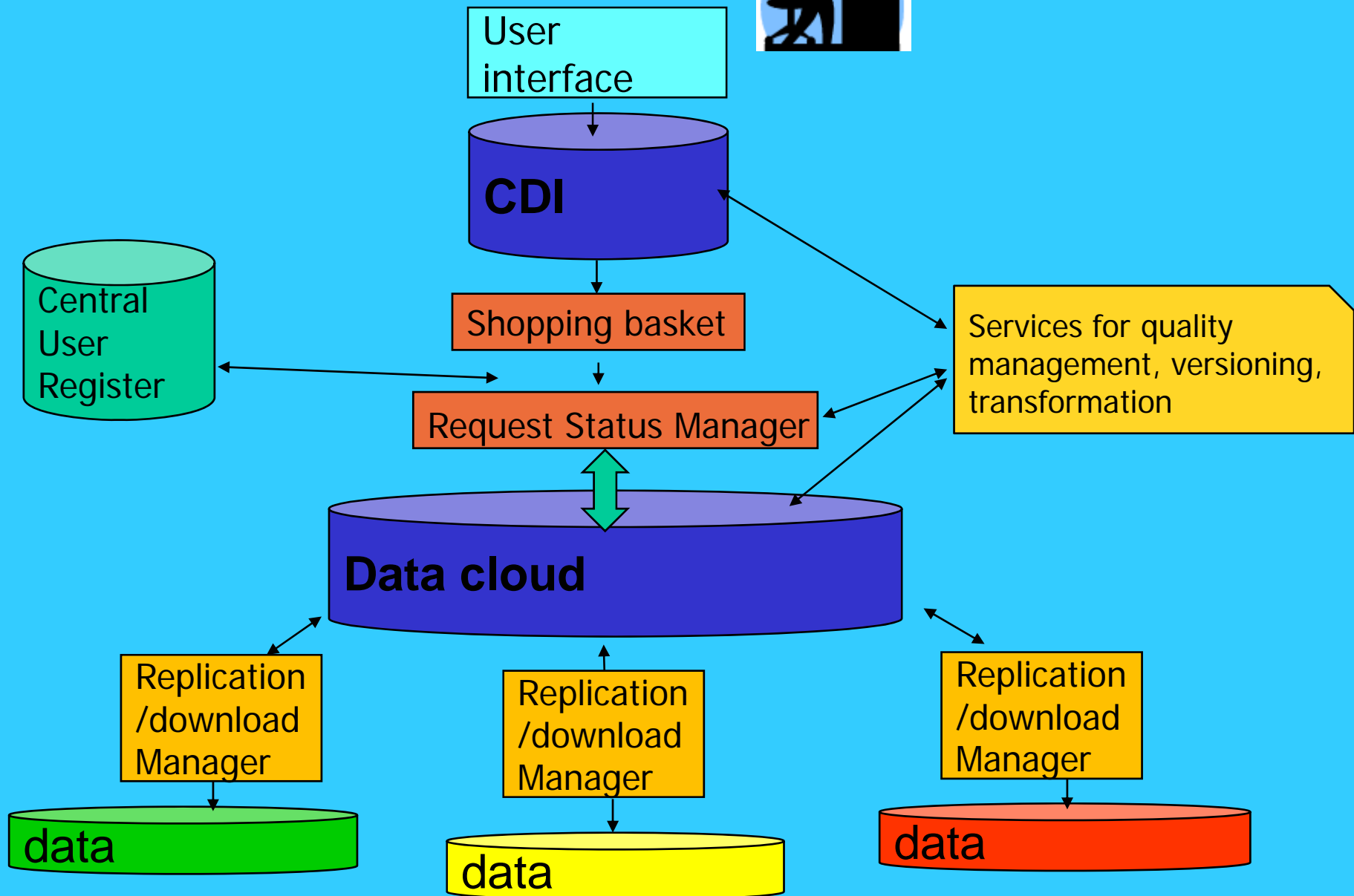
FOUND 59 | SHOW (25-50) | PREVIOUS 25 | NEXT 8

Data centre	Country	Approval pending	Ready for user action	User action completed	Access denied	All
Sinop University, Fisheries Faculty	Turkey	250		250		250
Karadeniz Technical University, Faculty of Marine Sciences	Turkey	3		3		3
Aarhus University, Department of Bioscience, Marine Ecology, Roskilde	Denmark	289		289		289
Marine Hydrophysical Institute	Ukraine	2261		2261		2261
Marine Systems Institute at Tallinn University of Technology	Estonia	224		224		224
Cyprus Oceanography Center	Cyprus	80		80		80
International Ocean Institute - Malta Operational Centre (University Of Malta) / Physical Oceanograp	Malta	20		20		20
Institute of Oceanography and Fisheries	Croatia	37		37		37
Latvian Institute of Aquatic Ecology	Latvia	20		20		20
National Institute for Marine Research and Development "Grigore Antipa"	Romania	2730		248	4128	4128
Institute of Marine Sciences, Middle East Technical University	Turkey	4336		5	4341	4341
Iv. Javakishvili Tbilisi State University, Centre of Relations with UNESCO Oceanological Research Ce	Georgia	86			86	86
Bulgarian National Oceanographic Data Centre (BNOODC), Institute of Oceanology	Bulgaria	238		1	238	238
P.P. Shirshov Institute of Oceanology, RAS	Russian Federation	471			471	471
All-Russian Research Institute of Hydrometeorological Information - World Data Centre (RHMI-WDC) Har	Russian Federation	4603			4603	4603
TNO Geological Survey of the Netherlands	Netherlands	736	101		836	836
Netherlands Institute for Ecology, Centre for Estuarine and Marine Ecology	Netherlands	18		3	22	22
Royal Netherlands Meteorological Institute	Netherlands	148			148	148
NOX Royal Netherlands Institute for Sea Research	Netherlands	756	1		757	757
Institute of Marine Research - Harmonized Marine Data Centre (HMDC)	Denmark	45			45	45

CDI system components



Upgraded CDI service



Upgrading CDI service using the cloud and HPC

- A cloud environment with High Performance Computing (HPC) facilities to host **copies of all data resources**
- Exchange by dynamic **replication** from the individual data centres, following their updating of the CDI catalogue service
- In the cloud buffer:
 - checking possible duplicates
 - Checking overall quality of formats
 - Checking integrity of data files and metadata relations.
 - Results of checks to be reported back to data centres for amendments of their submissions and/or local configurations for mapping data and metadata.
- Include versioning of data files
- Include transformation services for harmonizing data sets to common parameters and units, and converting data sets to other required output formats such as SeaDataNet NetCDF and relevant INSPIRE data models.

Upgrading CDI service using the cloud and HPC

- **Task WP9.1: Upgrading the CDI service making use of the cloud** – led by MARIS, EUDAT and IFREMER:
 - WP9.1.1: Specification of the SeaDataNet European cloud environment (EUDAT) – M6
 - WP9.1.2: Enhancing the EUDAT B2SAFE replication software (EUDAT, MARIS and IFREMER) – M12
 - WP9.1.3: Integrating and adapting the EUDAT B2HOST service (EUDAT and MARIS) – M12
 - WP9.1.4: Configuring the upgraded CDI service (MARIS and EUDAT) – M18
 - WP9.1.5: Deploying, testing and taking into operation the upgraded CDI service (MARIS and EUDAT) – M18
- **Task WP9.2: Developing and deploying additional services in the cloud for ensuring integrity and conformity of the CDI related cloud data resources** - led by IFREMER, MARIS, AWI and EUDAT - M18
- Upgraded CDI service fully deployed – M24 (*via* WP5 and WP3)



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