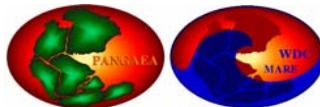


Visual Core Description

and Information Structure

Hans-Joachim Wallrabe-Adams, MARUM
Ronald Conze, OSG/ICDP
Colin Graham, ESO 8.5.2006



Expeditions - Information Structure

Drilling Information System

DIS/XDIS (ESO, ICDP)

= data acquisition

WDC-MARE (ESO), Information Network (ICDP)

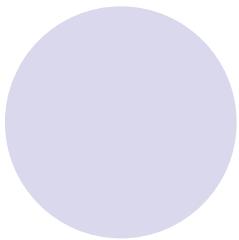
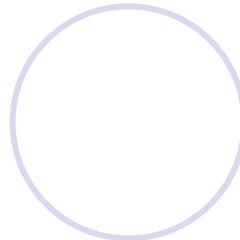
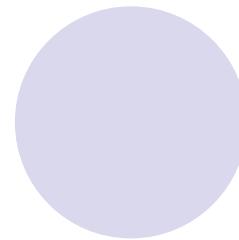
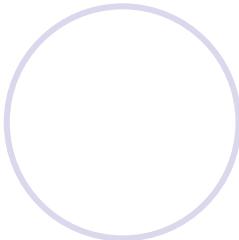
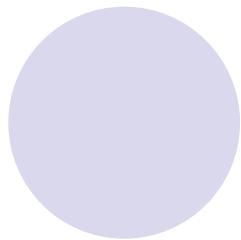
= data dissemination

Sample Materials Curation System (ESO/IODP)

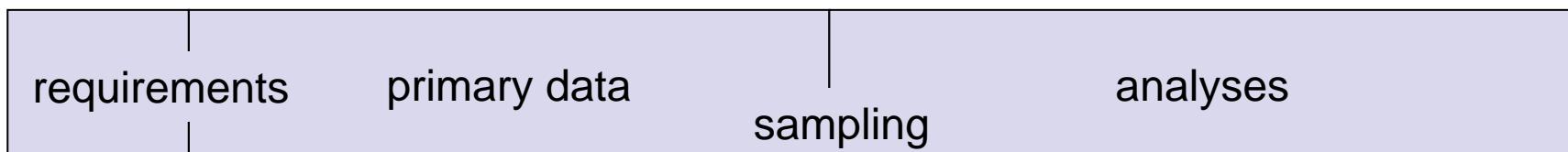
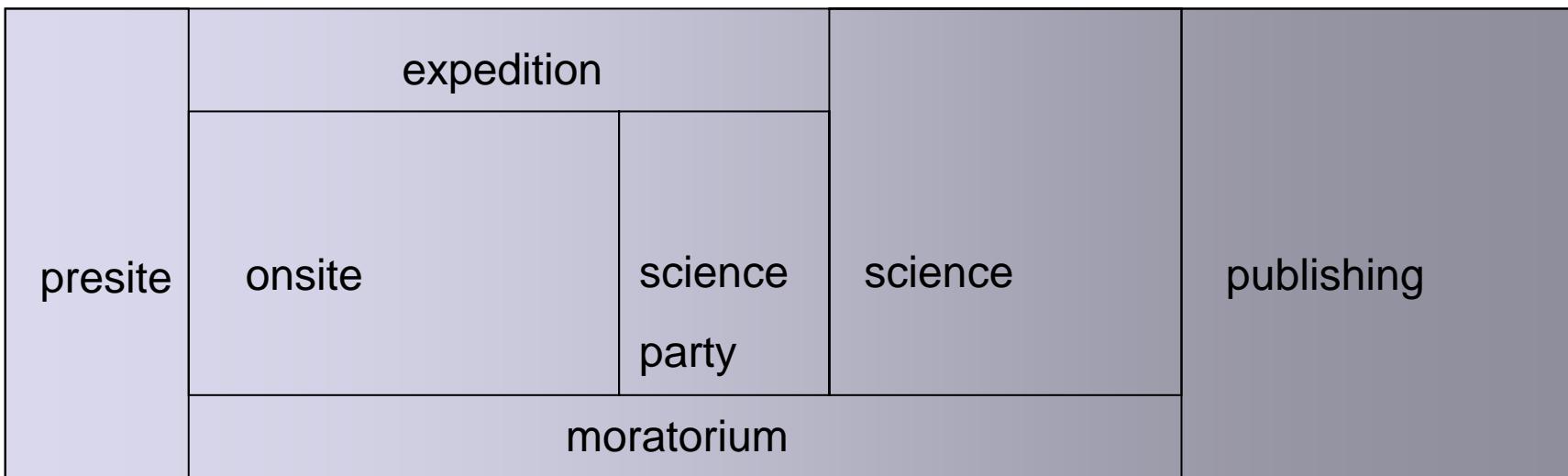
Scientific Earth Drilling Services (ESO/IODP)

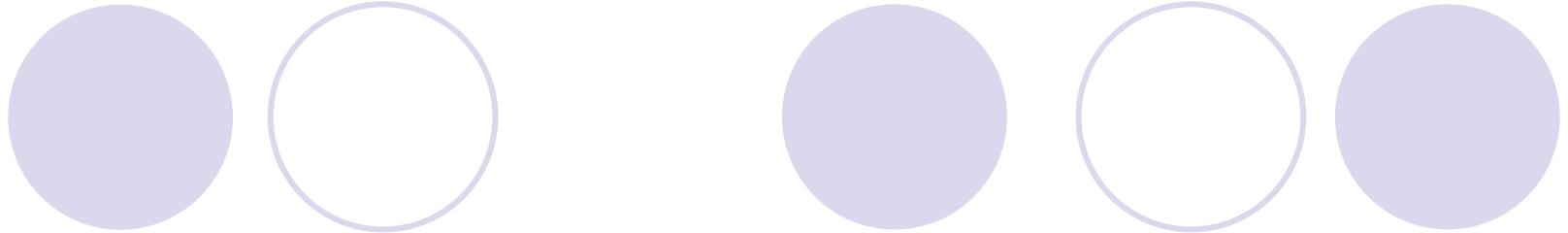
Information Network (ICDP)

= data discovery



Data Management

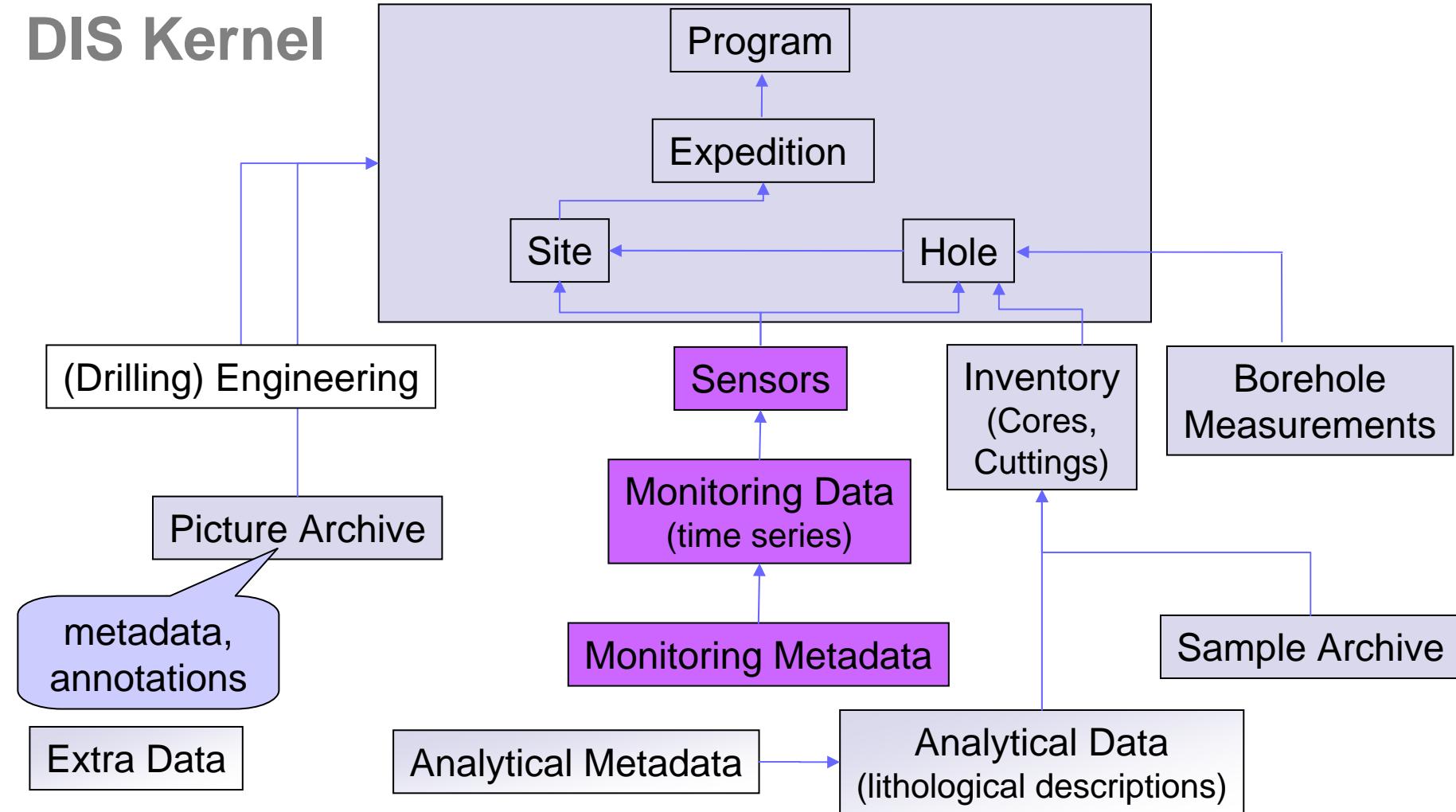


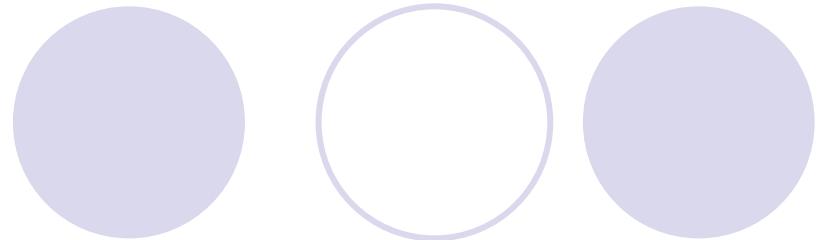
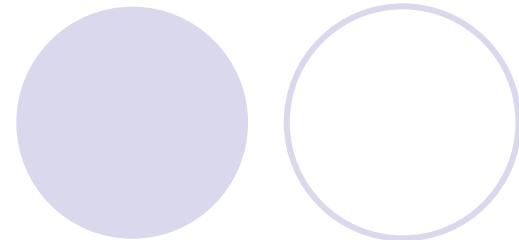


DIS – Objectives and History

- electronic toolbox to design individual operational Drilling Information Systems
- consistent data by controlled primary data acquisition
 - first expedition to Long Valley in 1998
- 2004 redesign towards ESO MSP expeditions
 - first used for Expedition 302 (ACEX)
- then Expedition 310 (Tahiti Sea-level) in 2005
 - MSP sample curation at BCR uses DIS
 - next step: consolidation of a DIS Kernel
 - Image Annotation and Visual Descriptions

DIS Kernel





Hawai‘i 1999



Initial Lithological Description

Image Annotation Tool

Drilling Information System

DIS: Data Input Form of HSDP_2_Units_INP

Data-Input-Form

LITHO UNIT UNIT IN BOX POINTCOUNTS INTERNAL BOUNDARY CLASTS

box unit #: B0198b
core box #: B0198
logged by: AR
core run: R0238
calculated top depth: 1868.9
rock name: moderately olivine-phyric basalt
top contact: rubby flow contact
bottom contact: continuous with next box
contact comments: upper contact consists of a baked olivine in the rubble is black
groundmass: microcrystalline
groundmass / matrix comments:

Data Record

Nr. 1 Co. 2

BW_B0198_1.jpg

Unit 96 Unit 97

R238-3.4

pc

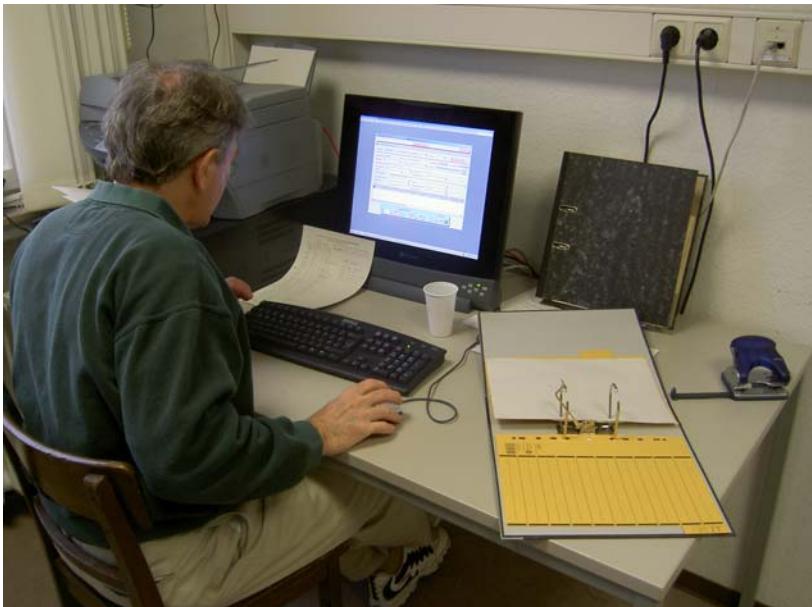
END 238
1875.0
START 239

Annotation 10 @ 379, 11

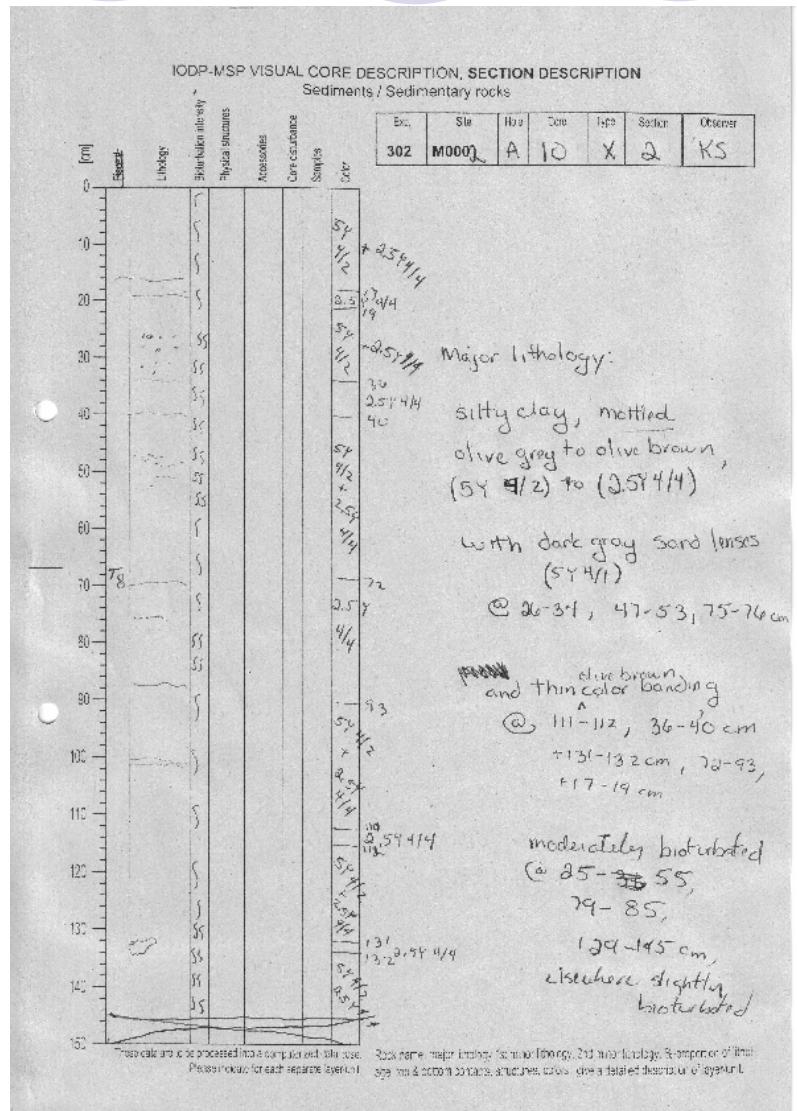
Start Drilling Information System BW_B0198_1.jpg

9:43 AM

ACEX 2004



Visual Section Unit Description



Tahiti 2005

DIS: data input form for section lithology of expedition

Data-Input-Form

smart DIS

SECTION UNIT | MINOR COMPONENTS

Expedition: Tahiti | **Site:** 5 | **Hole:** B | **Core:** 4 | **Section:** 1 | **SECTION UNIT**

Section Unit: 1 | **Top Depth Of Section (cm):** 0 | **Top Depth (mbst):** 12.5 | **(mbst):** 71.63 | **(mcd):** 12.5

Unit Class: CAR | **Unit Type:** Microbialite | **VCD-File:** VCD_310_5_B_4_1.PDF | **Open** | **Link**

Unit Description: General description: Microbialite with tab corals and coralline algae in growth position, and rob br corals in growth position with ECR. Rare infillings of Hal and molluscs. MB biocorrosion, mostly laminar.

Major Component: Microbialite | **Percentage:** []

Bedding: [] | **Core Disturbance:** slightly []

General Comments: []

Structure: []

Bioturbation Intensity: [] | **Bioerosion Intensity:** []

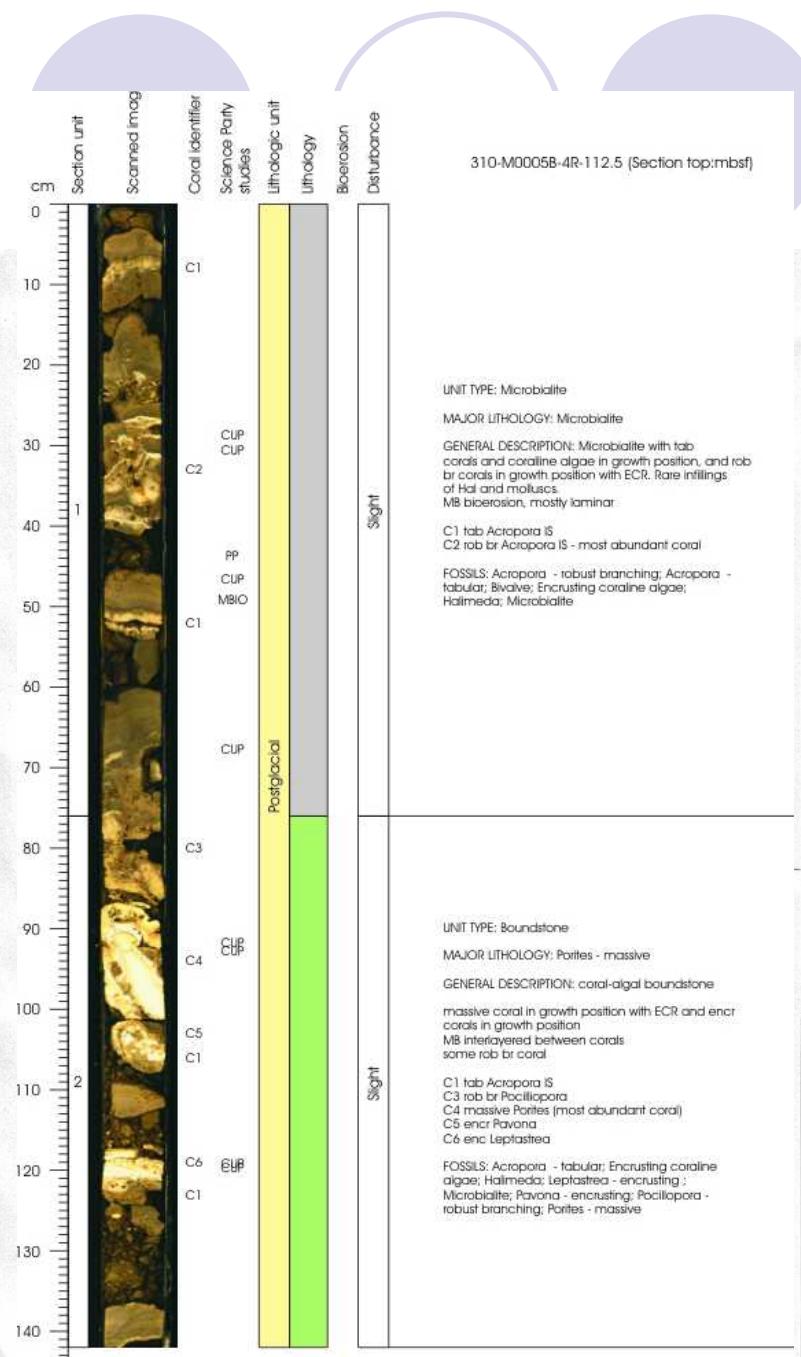
Colour: [] | **Bottom Contact:** []

CORE	SECTION	SECTION_UNIT	TOP_INTERVAL	TOP_DEPTH	TOP_DEPTH...	UNIT_CLASS	UNIT_TYPE	UNIT_DESCR	BI
2	2	1	0	11.05	11.05	CAR	Bindstone	General descrip...	
3	1	1	0	11.6	11.6	CAR	Bindstone	General descrip...	
3	1	2	55	12.15	12.15	CAR	Bindstone	General descrip...	
3	1	3	70	12.3	12.3	CAR	Microbialite	General descrip...	
3	2	1	0	12.38	12.38	CAR	Microbialite	General descrip...	
4	1	1	0	12.5	12.5	CAR	Microbialite	General descrip...	
4	1	2	76	13.26	13.26	CAR	Bindstone	General descrip...	
4	2	1	0	13.92	13.92	CAR	Microbialite	General descrip...	

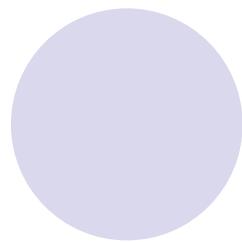
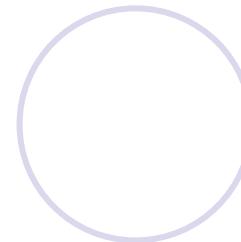
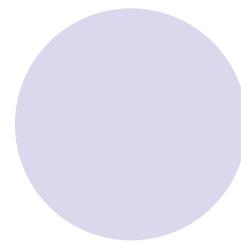
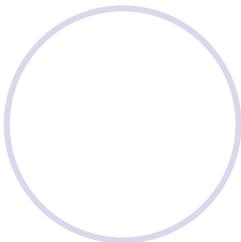
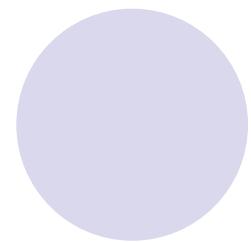
Data Record

Nr. 13 | Co. 31 | **Show All** | **Save** | **New** | **Edit** | **Cancel** | **Delete**

Form



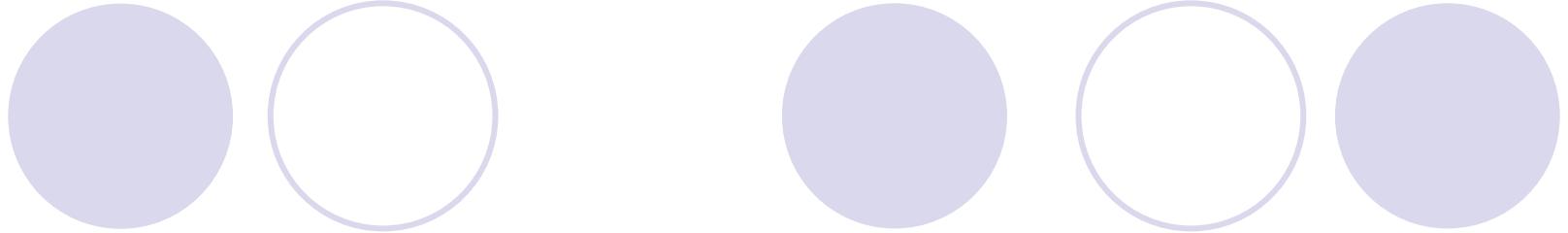
Visual Section Unit Description



Peten-Itza 2006

Visual Section Unit Description ?





Post expedition long term archive World Data Center MARE @ PANGAEA

- Public library for georeferenced data

- Normalized data model
- Open parameter list
- Internet clients for search & download
- Networking with other systems (Information exchange using metadata standards, e.g. ISO19115/XML)
- Part of the IODP Data Portal

Recent IODP-MSP data portal

IODP data portal - Mozilla Firefox

Datei Bearbeiten Ansicht Gehe Lesezeichen Extras Hilfe

http://iodp.wdc-mare.org/front_content.php?idcat=122

WDC-MARE · World ...

IODP data portal

IODP INTEGRATED OCEAN DRILLING PROGRAM

MSP Data Portal

WDC-MARE

Data

Search for:

123 datasets found!

<< PREV | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | NEXT >>

1. **Backman, J; Moran, K; McInroy, D et al. (2006): Summary of lithologic units and occurrences by section, Holes 302-M0002A, M0003A, M0004A - M0004C**
Reference: **Backman, J; Moran, K; McInroy, D et al. (2005): Proceedings of the Integrated Ocean Drilling Program, 302, College Station TX (Integrated Ocean Drilling Program Management International, Inc.).**
Size: 85 data points
doi:10.1594/PANGAEA.401192 - Score: 100% - Similar datasets

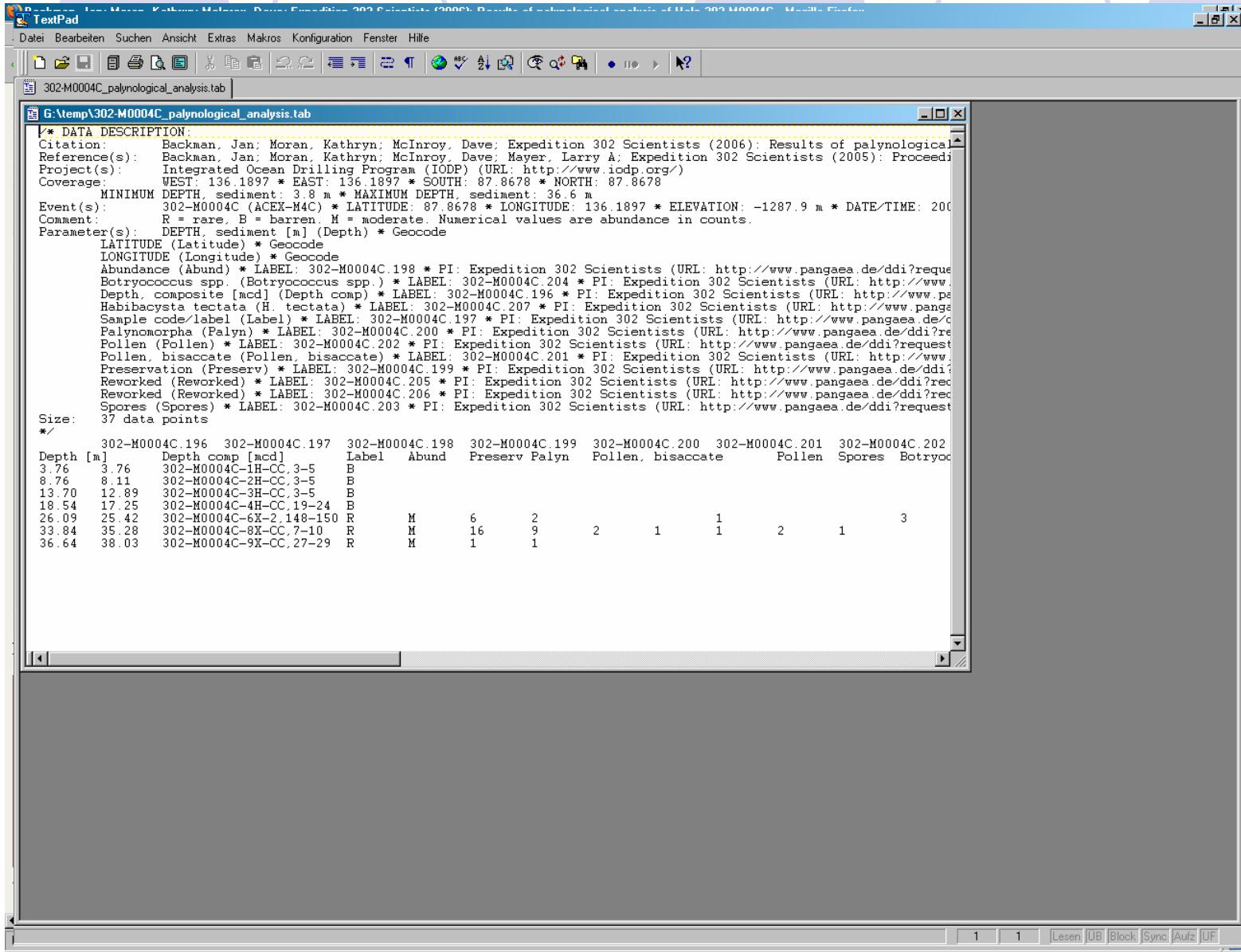
2. **Backman, J; Moran, K; McInroy, D et al. (2006): Calcareous microfossils index events of Holes 302-M0003A and 302-M0004C**
Reference: **Backman, J; Moran, K; McInroy, D et al. (2005): Proceedings of the Integrated Ocean Drilling Program, 302, College Station TX (Integrated Ocean Drilling Program Management International, Inc.).**
Size: 30 data points
doi:10.1594/PANGAEA.399835 - Score: 100% - Similar datasets

3. **Backman, J; Moran, K; McInroy, D et al. (2006): Diatoms index events of Hole 302-M0004A**
Reference: **Backman, J; Moran, K; McInroy, D et al. (2005): Proceedings of the Integrated Ocean Drilling Program, 302, College Station TX (Integrated Ocean Drilling Program Management International, Inc.).**
Size: 10 data points
doi:10.1594/PANGAEA.399822 - Score: 100% - Similar datasets

4. **Backman, J; Moran, K; McInroy, D et al. (2006): Silicoflagellates index events of Holes 302-M0002A and 302-M0004A**
Reference: **Backman, J; Moran, K; McInroy, D et al. (2005): Proceedings of the Integrated Ocean Drilling Program, 302, College Station TX (Integrated Ocean Drilling Program Management International, Inc.).**
Size: 100 data points

http://doi.pangaea.de/10.1594/PANGAEA.401192

Fertig



Information Network

international continental scientific drilling program

icdp

www.icdp-online.org

about

search



projects

On-Site Drilling Information
Systems

Primary data

Catalogue Service

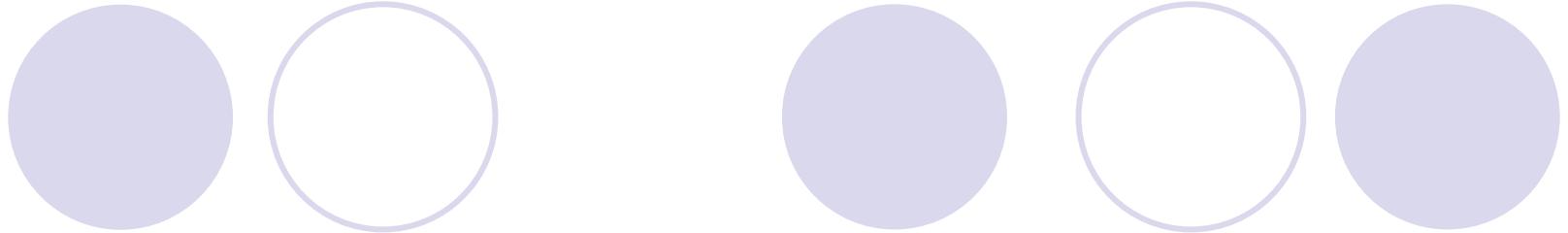
Keywords

contact



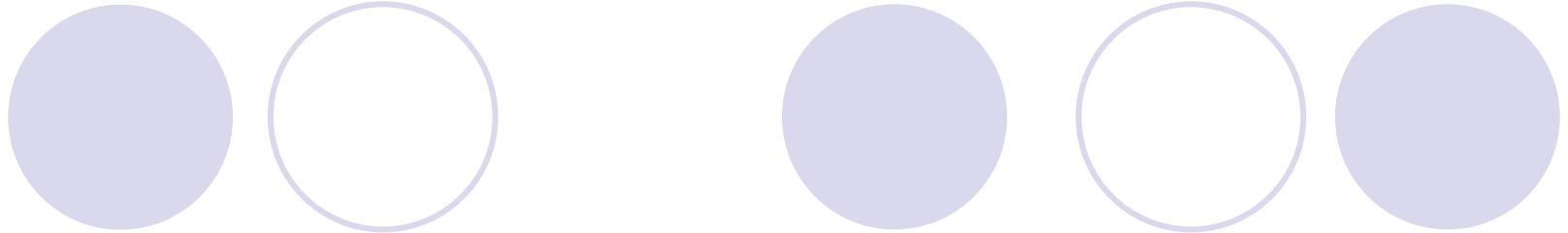
Archive & Data
Warehouse

Results &
Publications



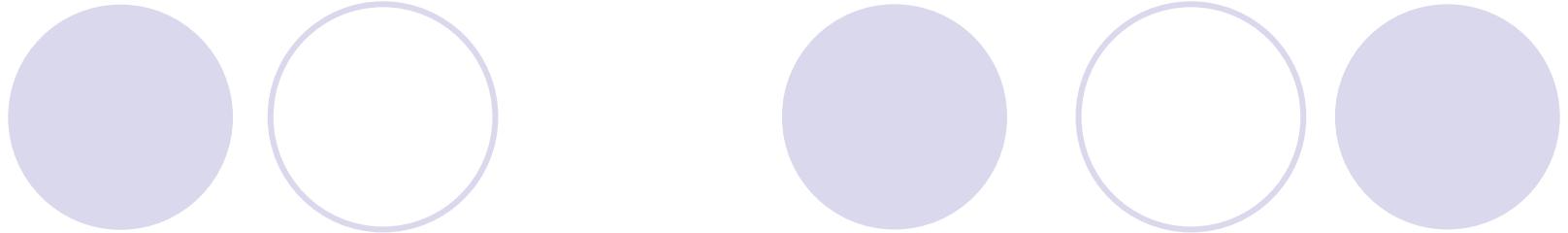
ICDP Information Network

- Official ICDP Web-Site
 - portal-like Web Site representing ICDP and ICDP related projects
 - main focus is data and information dissemination within specific science teams during the drilling and scientific evaluation phases – the pre-publishing or moratorium phases
 - published and unpublished data and information will be catalogized using common standards such as unique identifiers
 - these catalogues will be provided through the Lithon Portal (Lithosphere Online) of the German GEO-GRID Community
 - Lithon will be a platform to interface CoreWall Web Services with ICDP archives



Visual Description - Requirements

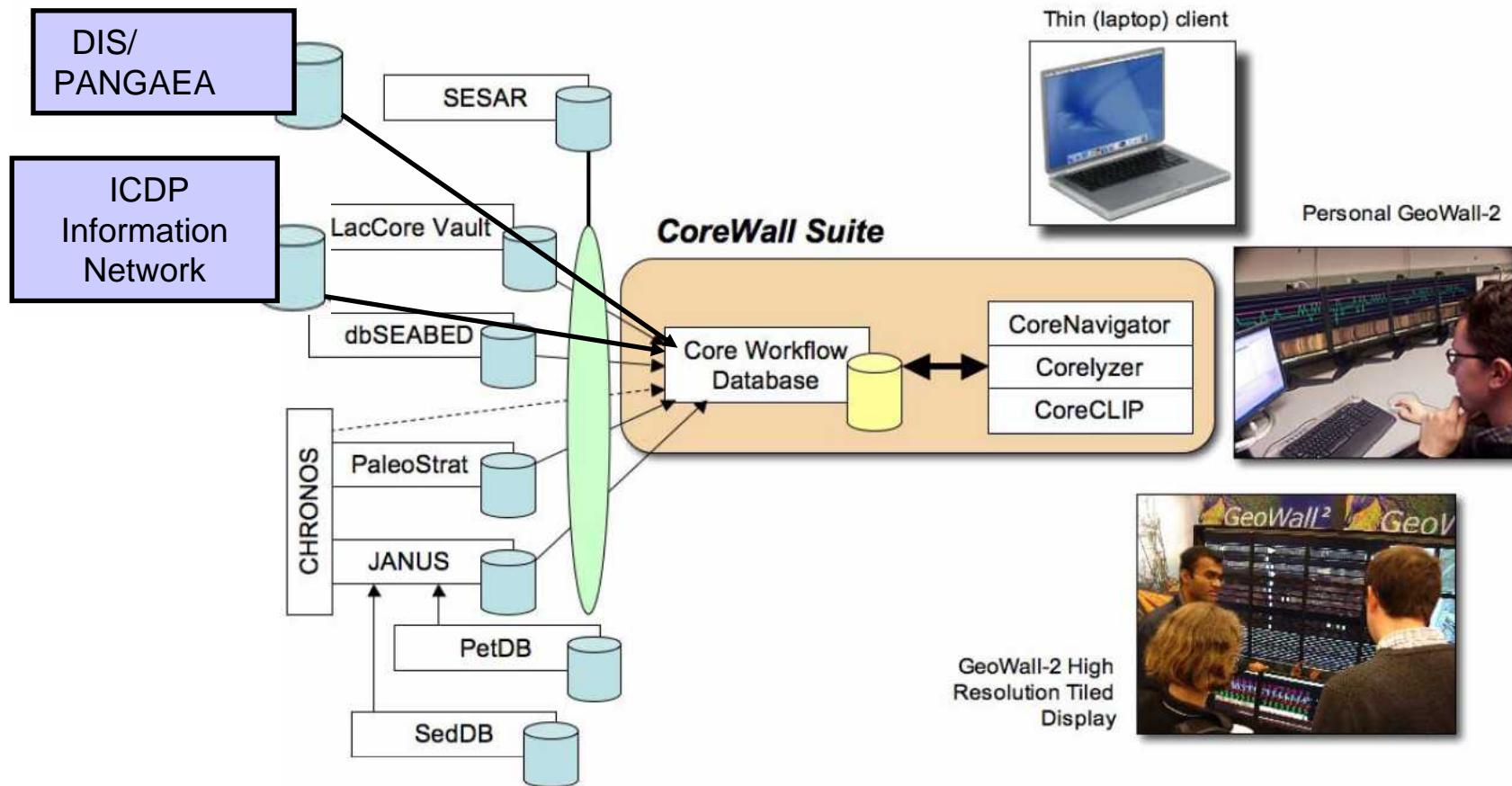
- integrated data model for images and corresponding objects comprising constraints, value ranges, annotations, measurements, metadata, georeferences, ages, markers, ...
 - all kinds of images (core and section overviews, slabbed and unrolled scans, close ups, core boxes, cutting series, cuttings, thinsections, smear slides, diagrams, logs, ...)
- annotations (text, symbols, depth oriented, interval oriented, areas, correlations, links, picking and measuring structural features, color spectra ...)
 - not only description, but also processing, interpretation, and analyses



Visual Description - Techniques

- analog and digital forms (paper, input masks, touch and tablet screen)
 - still and live images
- automated alignment using depth and scale information
 - using predefined lists and dictionaries
 - free text entry
 - key, mouse, pen, touch, voice

Database Communication



e.g. middleware PANGAEA

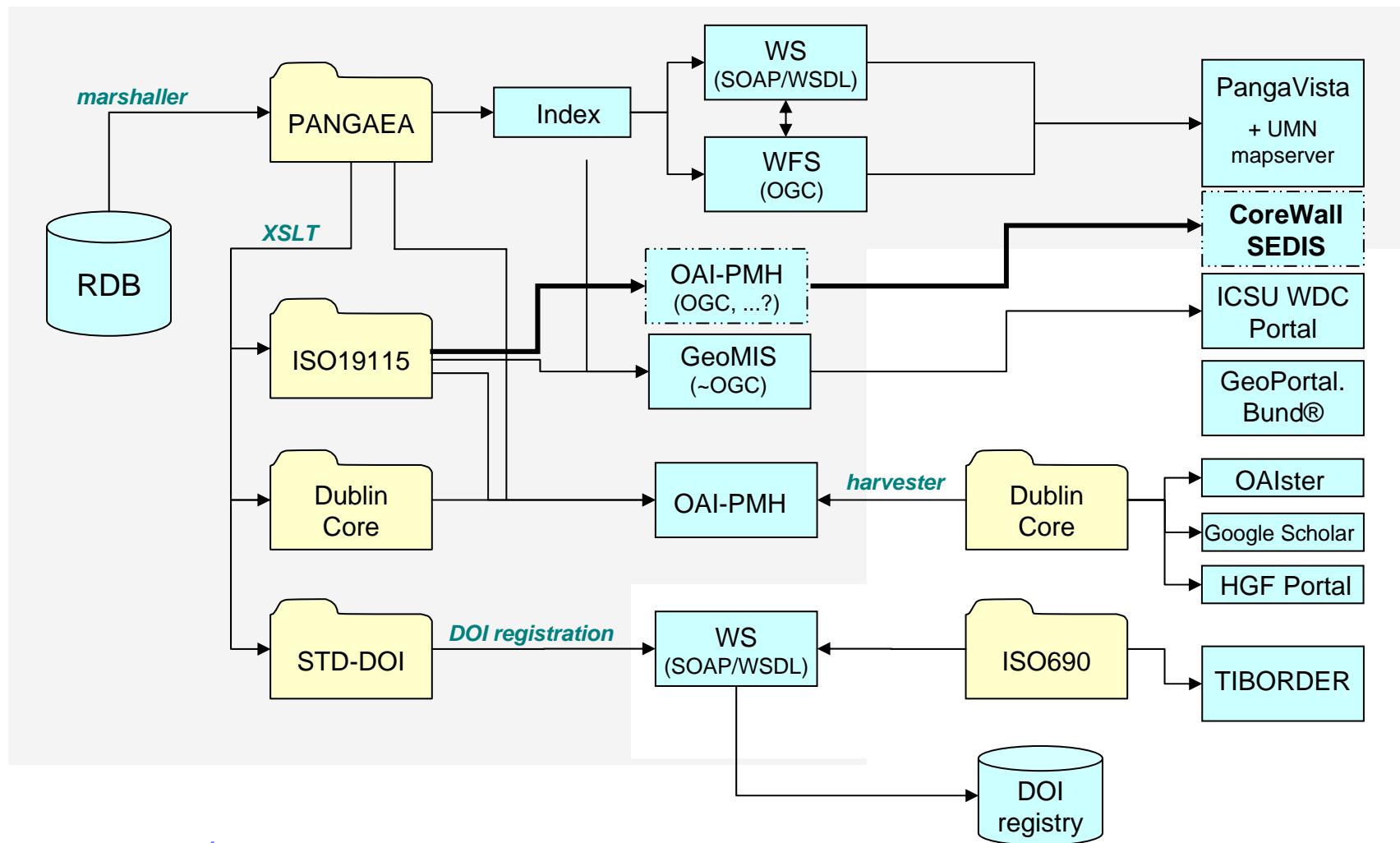
data management &
longterm archiving

catalogues

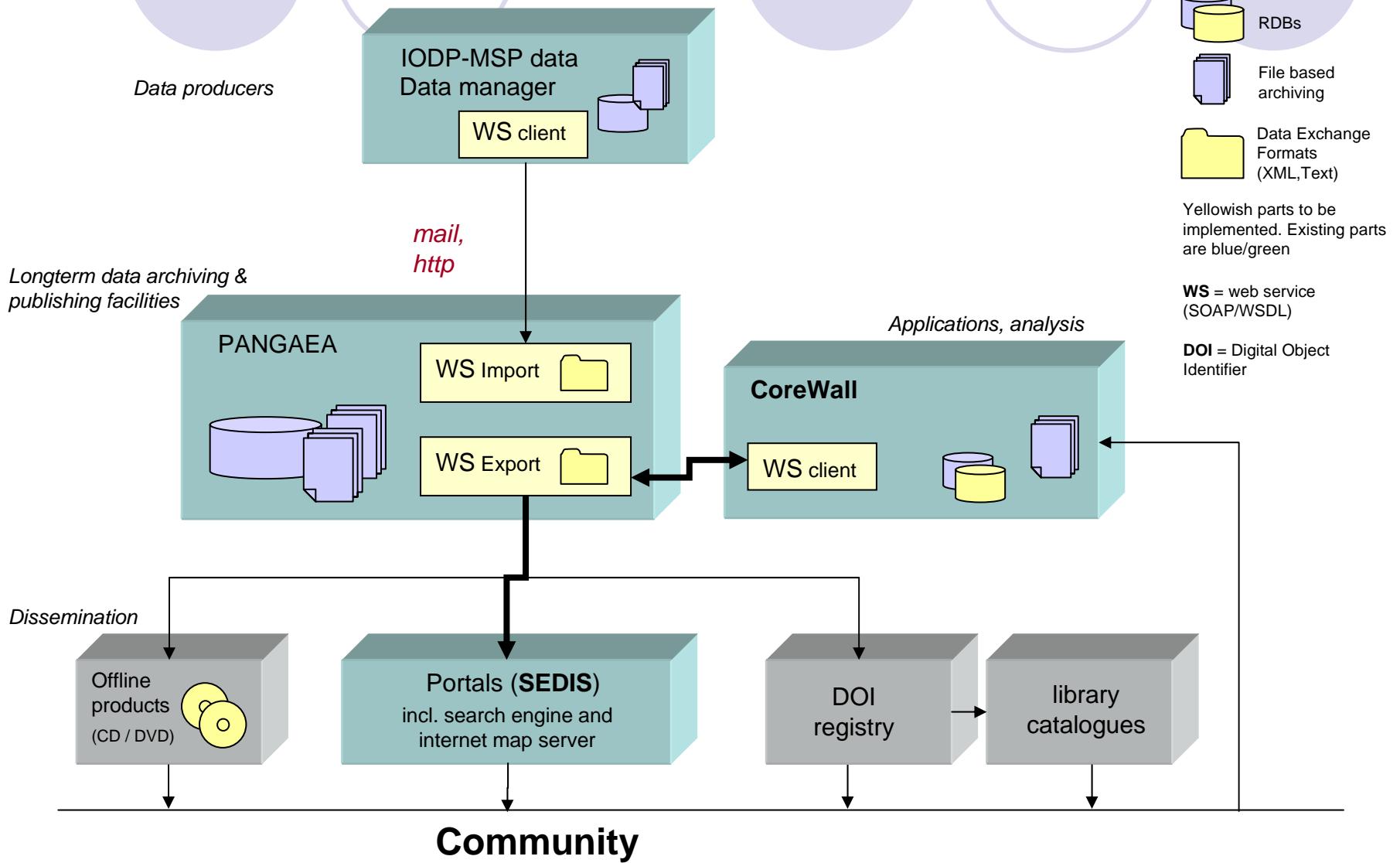
protocols

catalogues

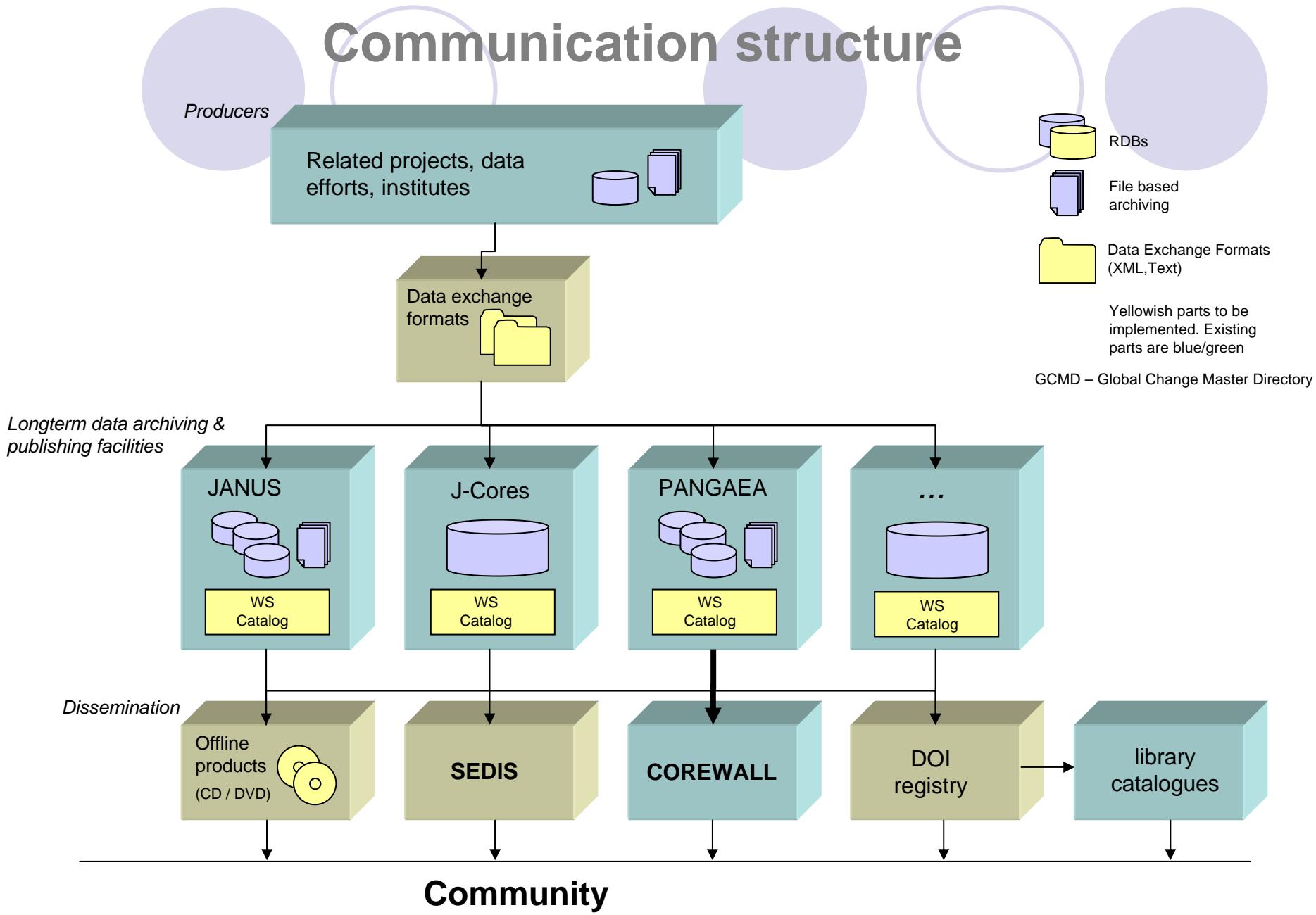
frontends



Integrated data management



Communication structure



Data portal, example (OAI-PHM)

 CARBOOCEAN data portal
Towards an integrated marine Carbon sources and sinks assessment



Home **Delivered data** **Data** **Methodology** **Cruise metadata inventory** **Metadata Template**

Search terms ([syntax help](#)):

Geographic coverage:

Temporal coverage:
Start date:
End date:

374 datasets found! (Query time: 0.012 s)

<< PREV | [1](#) | [2](#) | [3](#) | [4](#) | [5](#) | [6](#) | [7](#) | [8](#) | [9](#) | [10](#) | NEXT >>

- Nydal, R.: Carbon-14 Measurements in Surface Water CO₂ from the Atlantic, Indian and Pacific Oceans, 1965-1994.**: Carbon-14 Measurements in Surface Water CO₂ from the Atlantic, Indian and Pacific Oceans, 1965-1994.
Data Center: CDIAC (Carbon Dioxide Information Analysis Center)
Investigators: Nydal, R.
Parameters: SST; SSS; Delta C14; Delta C13; CRC14; SIGMA
Data Description - Score: 88%
- Smetacek, Victor; Bakker, Dorothee (2003):** Partial pressure of CO₂ in the surface ocean along the cruise track of ANT-X/6
Data Center: PANGAEA (Publishing Network for Geoscientific & Environmental Data)
Investigators: Bakker, Dorothee
Parameters: Depth, bathymetric; Chlorophyll a; Solubility of CO₂ at the sea surface; Solubility of CO₂ in bulk water; Salinity; Density, sigma-theta (0); Carbon dioxide, total; Temperature, water
Data Description - Score: 62%
- Sabine, Christopher: CO₂ Moorings Project: Mooring TAO125W**
Data Center: CDIAC (Carbon Dioxide Information Analysis Center)
Investigators: Sabine, Christopher
Parameters: xCO₂ SW (wet); H2O SW; xCO₂ Air (wet); H2O Air; Pressure of Liquor; Liquor Temp; % O₂; SST; SS Salinity; xCO₂ SW (dry); xCO₂ Air (dry); fCO₂ SW (sat); fCO₂ Air (sat); Delta fCO₂ (fCO₂ SW - fCO₂ Air)
Data Description - Score: 62%
- Sabine, Christopher: CO₂ Moorings Project: Mooring TAO140W**
Data Center: CDIAC (Carbon Dioxide Information Analysis Center)
Investigators: Sabine, Christopher

<http://mercury.ornl.gov/ocean/query.jsp?query=dataset&BATDBList=oceanuw&BATTerm1=Carbon 14: Surface Measurements>



The End