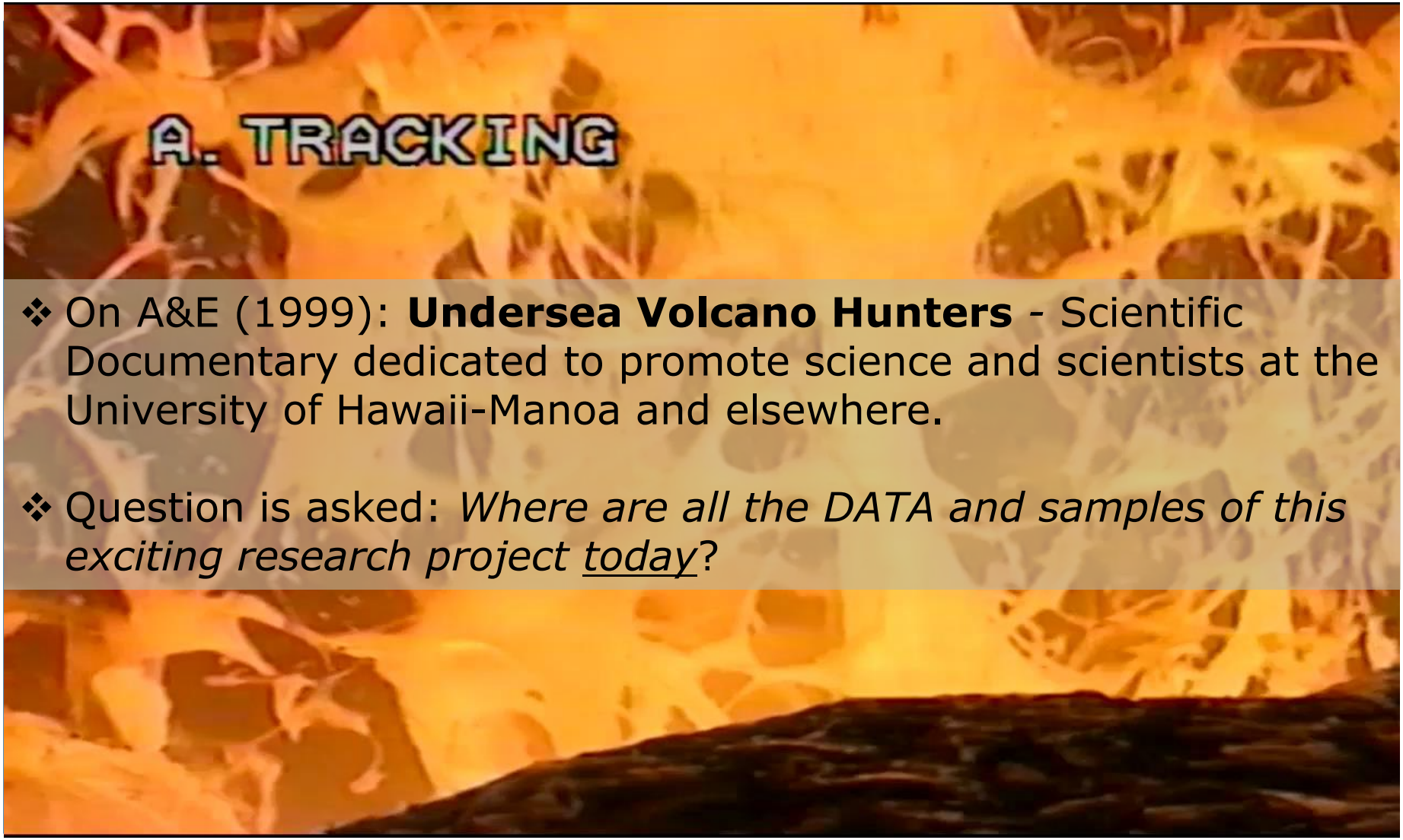
ICDP DATA MANAGEMENT



- On A&E (1999): **Undersea Volcano Hunters** - Scientific Documentary dedicated to promote science and scientists at the University of Hawaii-Manoa and elsewhere.
- Question is asked: *Where are all the DATA and samples of this exciting research project <u>today</u>*?

ICDP Data Management: A Data Message from the Past

Target

If samples or data are not properly preserved without a solid management plan for when to use them again in the future, you might be in trouble!

Why modern "Data Management Systems" are so important

- 2½ weeks into ODP LEG 175 (1997), the JOIDES Resolution crosses the equator on her way from the Canary Islands to South Africa - a peculiar type of „Geological Material and Data Sampling" takes place...
- >8km of mud was collected in 5½ weeks – still the unbroken record in ocean scientific drilling up to date!

Issue

- ✓ Data and samples collected during ODP LEG 175 still fuel scientists' work today – YET:
- ✓ Question is asked: „Are ALL data available via ODP/IODP database and data management systems (JANUS or LIMS)?
- ✓ Short answer: "Not really…"

ICDP DATA MANAGEMENT: Purpose and People

Photo Credit: http://bigdatapix.tumblr.com/

ICDP DATA MANAGEMENT: Hierarchy of Data

Goal

Provide IT services and support before, during, and post-drilling for all GFZ-ICDP Scientific Drilling Projects

What to do with drilling-generated DATA?

ICDP Approach

BASIC QUESTIONS are asked:

- ✓ *Where does this core come from?*
- ✓ *Do we have enough information to reconstruct all experiments around this core?*
- ✓ *Where do all data "live" today?*

ICDP DATA MANAGEMENT

Target	Task Sharing and Duties	ICDP Approach
Data Acquisition	Drilling Information System (DIS)	❑ Without Ideas and Targets no Project ❑ Without Project no Drilling ❑ Without Drilling no Hole ❑ Without Hole no Core ❑ Without Core no Data ❑ Without Data no Scientific Output ❑ Hence without all the above: NO GEO-GROUNDTRUTHING
Data Dissemination	Web Site within the ICDP Information Network	
Data and Research Publication	Datasets in Scientific Drilling Data Centers	

ICDP DATA MANAGEMENT: Data Acquisition

Target	The DIS	ICDP Approach
Data Acquisition	Drilling Information System (DIS) *Documentation and administration for acquiring initial primary data and corresponding reports, including sample requests, sample distribution, core scanner and borehole logging data*	Provide a common reference frame for all Science Team Members (STMs) regarding "depth matching", "offset" units", etc. to avoid generation of non-synchro-nized and non-authorized data files

ICDP DATA MANAGEMENT: Data Acquisition

Target	Task Sharing and Duties	ICDP-Approach
Data Acquisition	Drilling Information System (DIS) Will never be an: • active online real time monitoring system • active measuring or logging system • application for interpreting or evaluating data	DIS-based data management provides a common reference frame for all Science Team Members (STMs) regarding "depth matching", "offset", "units", etc., and seeks to avoid generating non-synchronized and non-authorized data files.

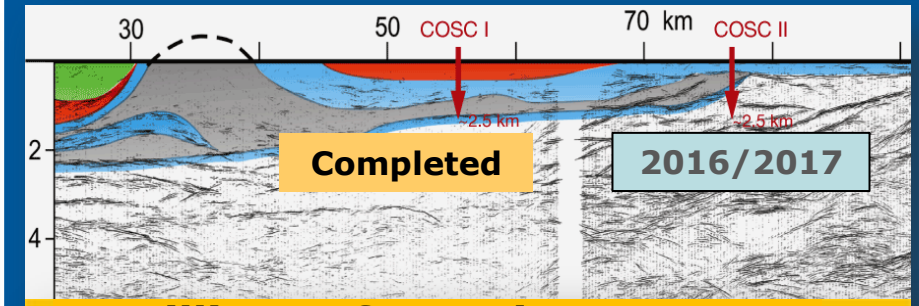
Drilling Information System (DIS) in the Field

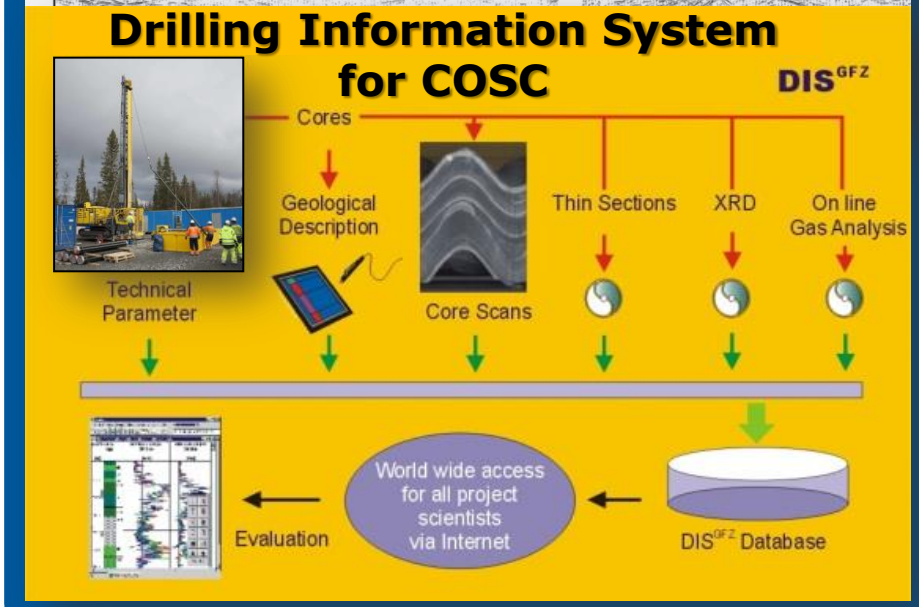
Goal

- DIS maintains an individually designed data acquisition base for any drilling project (here: COSC)
- DIS allows design of operational and technical working flow for on-site data manage-ment tasks

Prime Example: COSC (Sweden)

COSC: Collisional Orogeny in the Scandinavian Caledonides





ICDP Approach

- ✓ DIS-Software adjustable to specific project needs
- ✓ DIS-Knowledge transfer to science team through pre-drilling DIS-training in Potsdam
- ✓ DIS-Support before, during and after field experiment

Drilling Information System (DIS) in the Field

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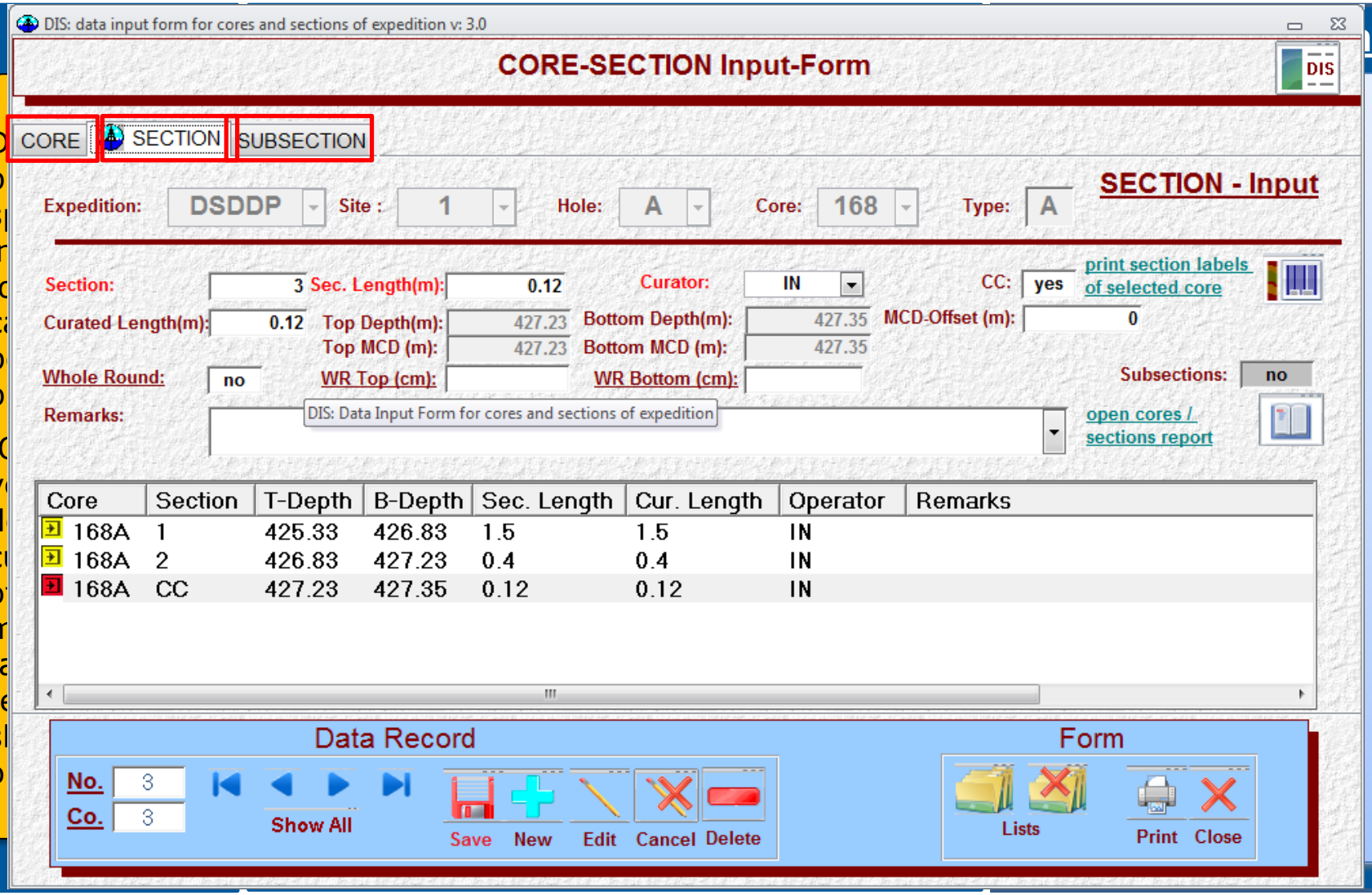


Drilling Information System (DIS) in the Field

Target

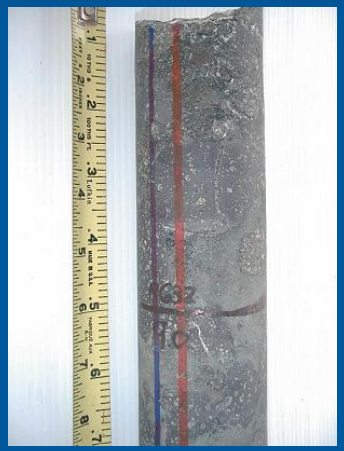
Project-specific DIS is designed to log typical information about cored material on-site, incl.:

Expedition, Hole, Site, Core, Core Recovery, Section Length, Core Box, etc. ...

Onsite Core-Logging Workflow

❖ Cleaning

❖ Fitting



❖ Marking

Approach

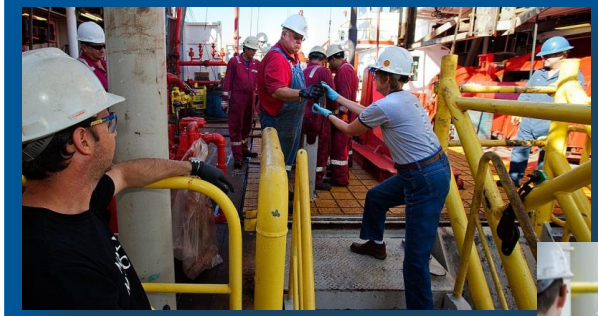
- ✓ DIS-Software adjustable to project needs during field use
- ✓ DIS-Knowledge transfer to science team also during field experiment
- ✓ DIS-Support before, during and after field campaign

Comparison with IODP Sea-Going Operations

Target

Shipboard logging of all cored material via expedition-specific **L(ogging)I(nformation)M(anagement)S(ystem)**: *Expedition, Hole, Site, Core, Core Recovery, Section Length, Samples, etc.,...*

Onsite Core-Logging Workflow



- Core Reception

- Core Recovery from Drill Floor

- Cat Walk Curation

IODP Approach

- ✓ LIMS software adjusted to specific expedition needs
- ✓ Knowledge transfer to science team during „transit" from port to drill site
- ✓ LIMS support before, during and after sea-going campaign

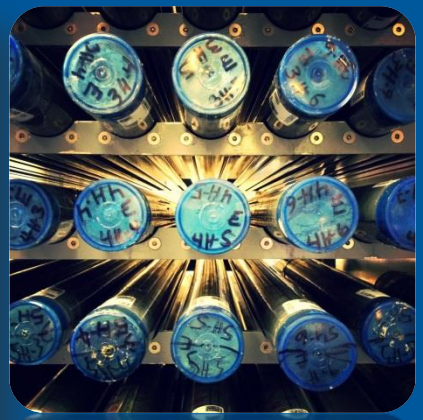
IODP/ICDP Coring during Sea-Going/Lake Operations

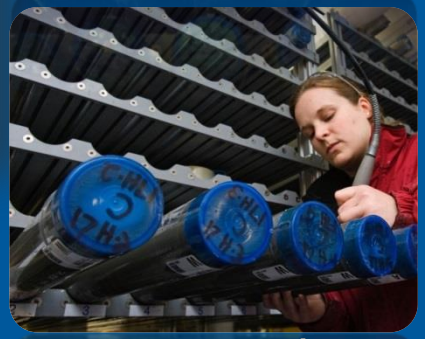
Target

Logging of all core material in form of *Cores*, *Sections*, *Samples* and *Sub-Samples*, etc...

Onsite Core-Logging Workflow

❖ Core Section Transporation during ICDP Lake Drilling Project





❖ Core Rack on Drill Ship and Core Section Logging

Approach

- ✓ Requires logging of precise information of top, bottom and length of each material
- ✓ Critical to follow very precise core material logging workflow („Curation") to locate samples within cored material during and post-drilling campaign

IODP/ICDP Coring during Sea-Going/Lake Operations

Target

Rules of the Game: „Keep everything in tidy order during the logging process!“

Onsite Core-Logging Workflow

- ICDP/ECORD Core Sections
- IODP Core Sections

Approach

- ✓ Rules of the Game: „Blue End Cap“ always on top, arrows upwards
- ✓ Note: Single-Line is “Archive Half“, Double-Line is „Working Half“
- ✓ Lables slightly different for IODP vs. ICDP projects

ICDP Coring: Naming Conventions

Naming Conventions

Precise definitions required for:

Expedition, *Site*, *Hole*, *Core*, *Type*, *Section*, *Working-Half*, *Archive-Half*, *Interval, etc.*

to build a hierarchical data base!

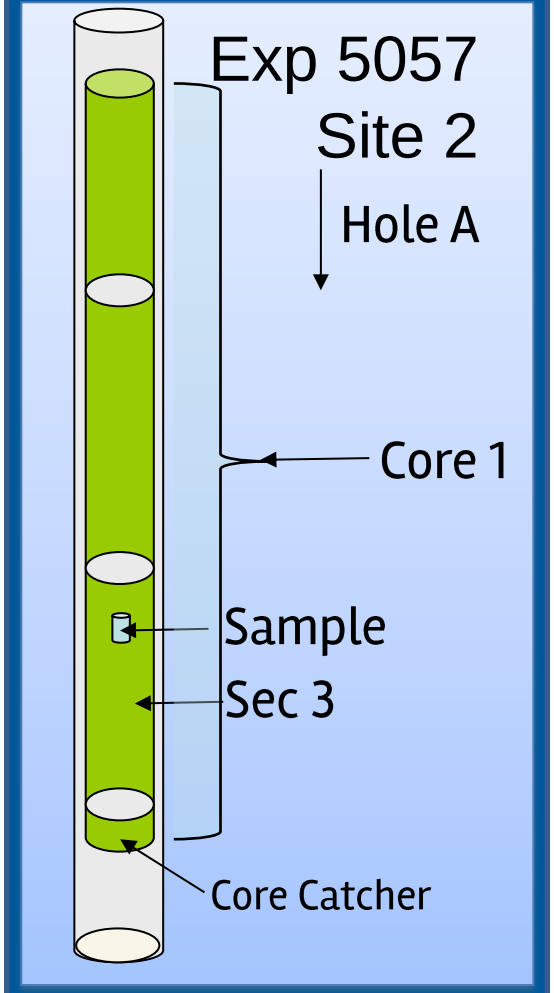
Onsite Core-Logging Workflow

Expedition and Site followed by Hole, Core, Section, Type, Interval, e.g.:

5057-2A-1R-3A, 10-12

- Hole A (A-Z)
- Core 1 (1-n)
- H-hydraulic, X-extended, R-rotary
- Section 3 (1-n) plus Core Catcher Section
- WR-whole round, A-archive half, W-working half
- interval (cm, relative to top of section - normally in „W-Half")

ICDP Approach



IODP Coring during land-based operations

Naming Conventions

Precise definitions required for:

Expedition, *Site*, *Hole*, *Core*, *Type*, *Section*, *Working-Half*, *Archive-Half*, *Interval, Box, etc.*

to build a hierarchical data base!

Onsite Core-Logging Workflow

ICDP Approach

Here: Expedition and Site, followed by Hole, Core, Core Box #, W(orking)/A(rchive) Half

5057–2–B–25–W/A

ICDP Coring during land-based operations

Naming Conventions

Precise definitions required for:

Expedition, *Site*, *Hole*, *Core*, *Type*, *Section*, *Working-Half*, *Archive-Half*, *Interval, Core Box, etc.*

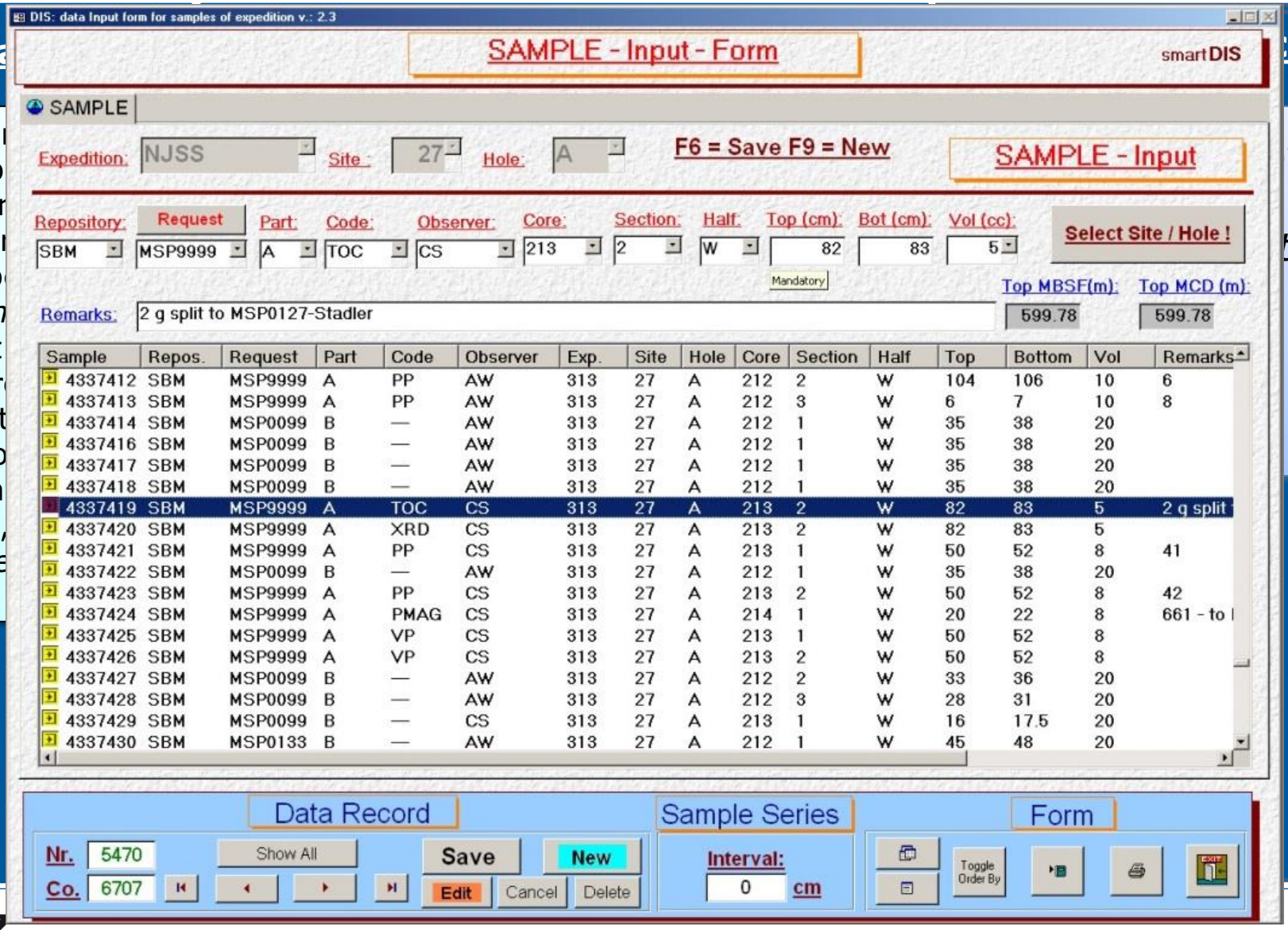
to build a hierarchical data base!

Onshore Core-Logging Workflow

ICDP Approach

- ✓ Pay attention to institute-specific labels and other distinguishing criteria!
- ✓ Pay attention to the evolving **IGSN** concept! (**I**nternational **Geo****S**ample **N**umber)

DIS Sampling for ICDP land/lake-based operations



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ICDP DATA MANAGEMENT: Data Dissemination

Target	Task Sharing and Duties	ICDP Approach
Data Acquisition	Drilling Information System (DIS)	❑ Without Ideas and Targets no Project ❑ Without Project no Drilling ❑ Without Drilling no Hole ❑ Without Hole no Core ❑ Without Core no Data ❑ Without Data no Scientific Output ❑ Hence without all the above: NO GEO-SCIENCE PUBLISHING
Data Dissemination	Web Site within the ICDP Information Network	
Data and Research Publication	Datasets in Scientific Drilling Data Centers	

ICDP DATA MANAGEMENT: Data Dissemination

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- 7000+ registe… users r… workin… website platfor…

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icdp | INTERNATIONAL CONTINENTAL SCIENTIFIC DRILLING PROGRAM

MEDIA | OUTREACH

PROFILE | SUPPORT | PROJECTS | PROPOSALS | MEMBERS | SEARCH | LOGIN

EUROPE

- Map of Europe
- Alpine
- Are-Jarpen
- Campi Flegrei
- Central Apennines
- Corinth
- Crete
- Dead Sea
- Eger
- Erzgebirge
- Fennoscandia
- Iceland
- Imandra
- Kola
- Krafla
- Lake Ohrid
- Lake Van
- Mjoelnir
- North Anatolian Fault
- North Sea
- Mochras
- Orava

Description | Location | Identifiers

Collisional Orogeny in the Scandinavian Caledonides (COSC) (COSC)

› COSC proposal abstract

Geologic age:	mid-paleozoic
Number of drillsites (drillholes):	1(3)
Drilled length:	2495.8 m
Cored length:	2393.1 m
Core recovered, length:	2396.49 m
Cored length / Total length ratio:	100.14%
Core recovered / Total length ratio:	96.02%

Principal Inv. (PIs) | CoPIs

Christopher Juhlin
Uppsala University, Department of Earth Sciences, Geophysics

David G. Gee
Uppsala University, Department of Earth Sciences, Geophysics

Randall Parrish
British Geological Survey (BGS), Natural Environment Research Council

Christophe Pascal
Ruhr-University Bochum (RUB), Institute of Geology, Mineralogy and Geophysics, Endogenous Geology

Chinfu Tsang
Lawrence Berkeley National Laboratory (LBNL), Earth Sciences Division

Karsten Pedersen
Chalmers University of Technology, Civil and Environmental Engineering

Programs&Funding | Partners&Contract.

International Continental Scientific Drilling Program (ICDP)
Swedish Research Council, Vetenskapsrådet
Geological Survey of Sweden (SGU)

Project Link

Project Link – Collisional Orogeny in the Scandinavian Caledonides (COSC)

› http://cosc.icdp-online.org

Please use only this URL in any kind of publication (papers, posters, flyers, citations etc.). Only this URL can be guaranteed to be persistent over coming relaunches of the Web Site.

- Daily News
- Gallery
- Data Description
- Operational Report
- Press Releases
- Publications
- Workshops
- Scientists

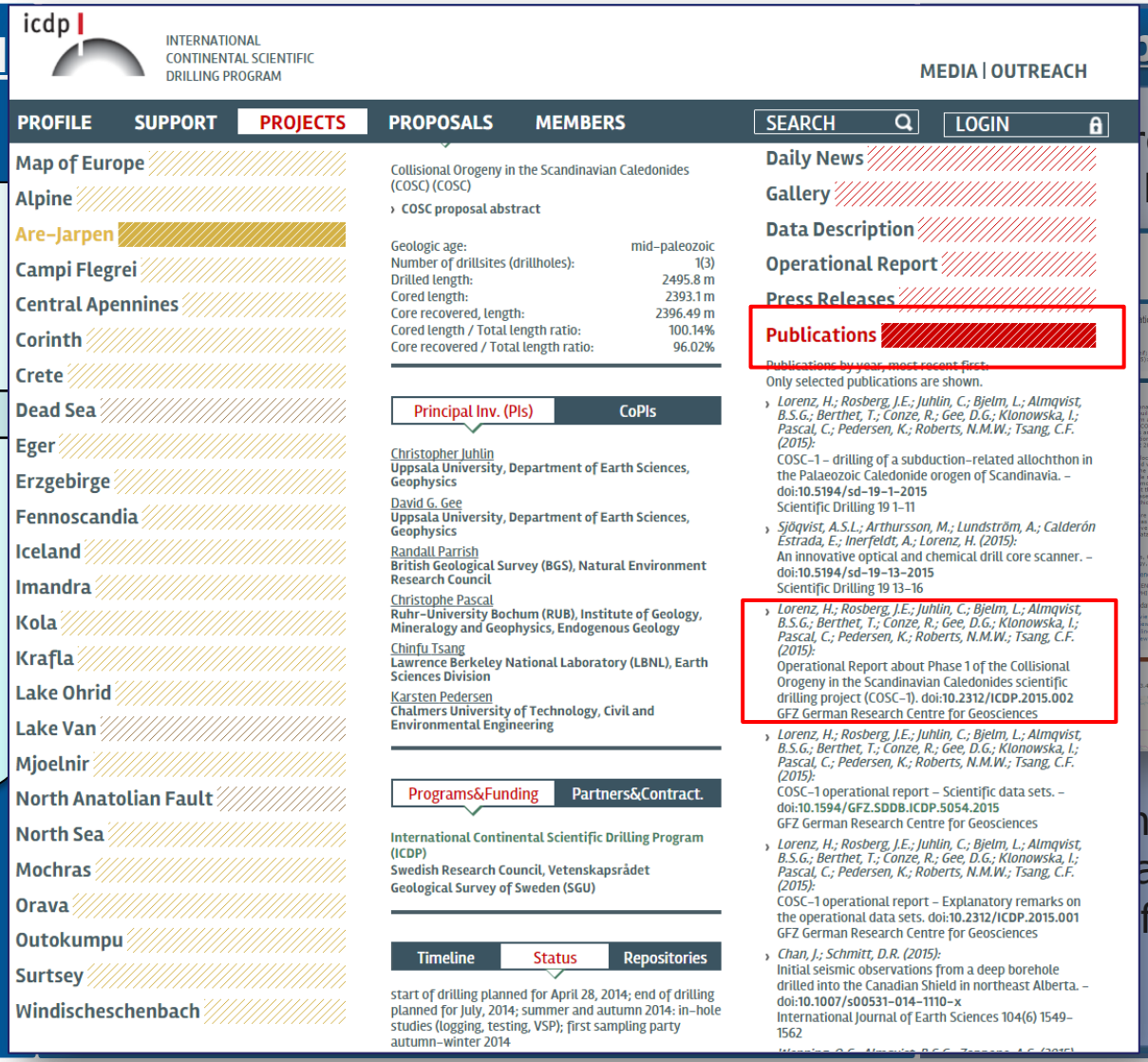
BACK

ssdp

ICDP DATA MANAGEMENT: Data Dissemination

Developed In-House

ICDP Web-programming platform (***TYPO-3***) combines general project information with data management



proach

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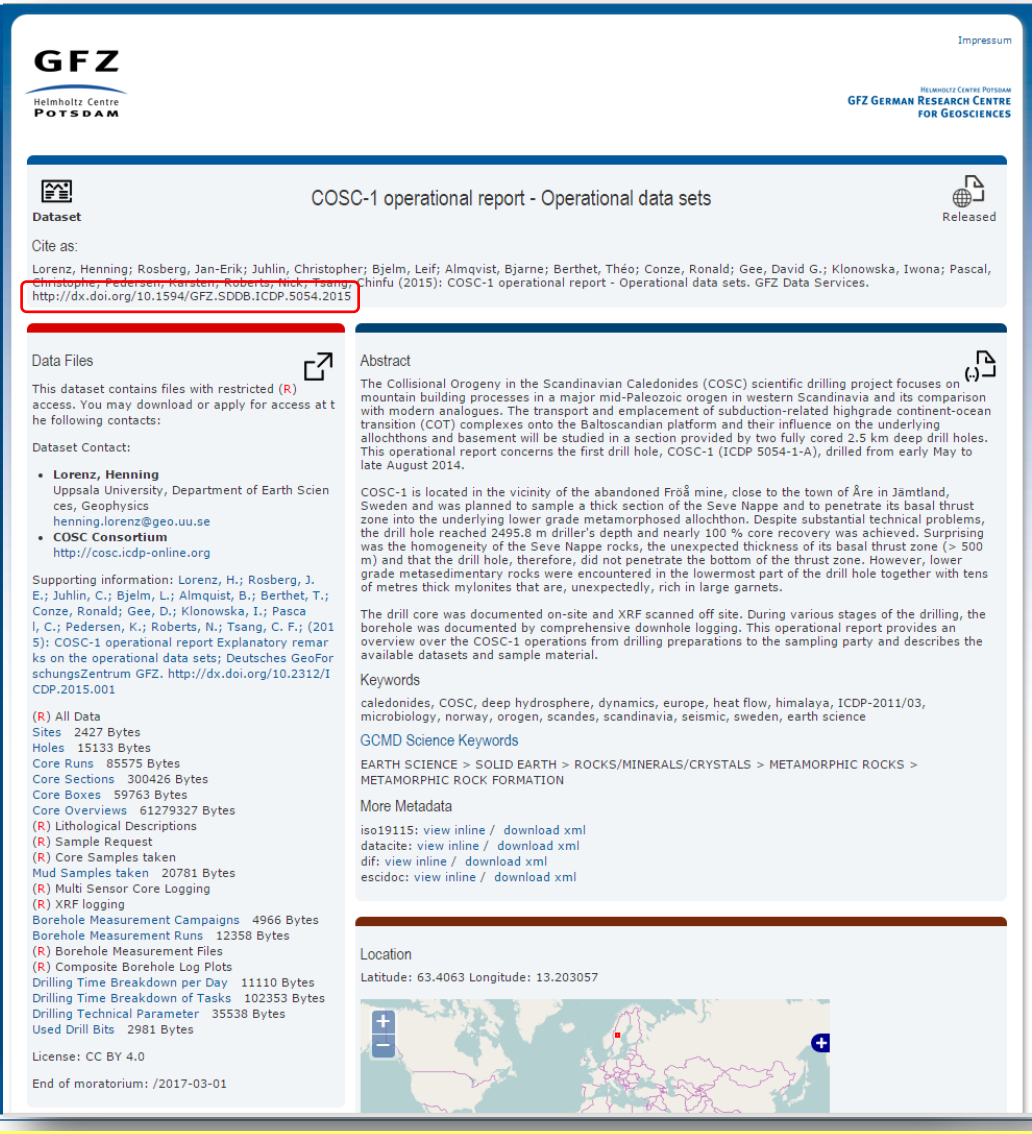
ICDP DATA MANAGEMENT: Data Dissemination

Target

DATA REPORT Advantages:

- Reaching a common knowledge and reference base, and documenting the entire expedition history and its primary data pool
- Refining the science and sampling plan during an ICDP funded post-drilling workshop
- Edited by PIs and staff scientists, independently peer-reviewed



GFZ Helmholtz Centre Potsdam

Impressum

GFZ German Research Centre for Geosciences

Dataset

COSC-1 operational report - Operational data sets

Released

Cite as:

Lorenz, Henning; Rosberg, Jan-Erik; Juhlin, Christopher; Bjelm, Leif; Almqvist, Bjarne; Berthet, Théo; Conze, Ronald; Gee, David G.; Klonowska, Iwona; Pascal, Christophe; Pedersen, Karsten; Roberts, Nick; Tsang, Chinfu (2015): COSC-1 operational report - Operational data sets. GFZ Data Services. http://dx.doi.org/10.1594/GFZ.SDDB.ICDP.5054.2015

Data Files

This dataset contains files with restricted (R) access. You may download or apply for access at t he following contacts:

Dataset Contact:

- **Lorenz, Henning**
  Uppsala University, Department of Earth Scien ces, Geophysics
  henning.lorenz@geo.uu.se
- **COSC Consortium**
  http://cosc.icdp-online.org

Supporting information: Lorenz, H.; Rosberg, J. E.; Juhlin, C.; Bjelm, L.; Almquist, B.; Berthet, T.; Conze, Ronald; Gee, D.; Klonowska, I.; Pasca l, C.; Pedersen, K.; Roberts, N.; Tsang, C. F.; (201 5): COSC-1 operational report Explanatory remar ks on the operational data sets; Deutsches GeoFor schungsZentrum GFZ. http://dx.doi.org/10.2312/I CDP.2015.001

(R) All Data
Sites 2427 Bytes
Holes 15133 Bytes
Core Runs 85575 Bytes
Core Sections 300426 Bytes
Core Boxes 59763 Bytes
Core Overviews 61279327 Bytes
(R) Lithological Descriptions
(R) Sample Request
(R) Core Samples taken
Mud Samples taken 20781 Bytes
(R) Multi Sensor Core Logging
(R) XRF logging
Borehole Measurement Campaigns 4966 Bytes
Borehole Measurement Runs 12358 Bytes
(R) Borehole Measurement Files
(R) Composite Borehole Log Plots
Drilling Time Breakdown per Day 11110 Bytes
Drilling Time Breakdown of Tasks 102353 Bytes
Drilling Technical Parameter 35538 Bytes
Used Drill Bits 2981 Bytes

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End of moratorium: /2017-03-01

Abstract

The Collisional Orogeny in the Scandinavian Caledonides (COSC) scientific drilling project focuses on mountain building processes in a major mid-Paleozoic orogen in western Scandinavia and its comparison with modern analogues. The transport and emplacement of subduction-related highgrade continent-ocean transition (COT) complexes onto the Baltoscandian platform and their influence on the underlying allochthons and basement will be studied in a section provided by two fully cored 2.5 km deep drill holes. This operational report concerns the first drill hole, COSC-1 (ICDP 5054-1-A), drilled from early May to late August 2014.

COSC-1 is located in the vicinity of the abandoned Fröå mine, close to the town of Åre in Jämtland, Sweden and was planned to sample a thick section of the Seve Nappe and to penetrate its basal thrust zone into the underlying lower grade metamorphosed allochthon. Despite substantial technical problems, the drill hole reached 2495.8 m driller's depth and nearly 100 % core recovery was achieved. Surprising was the homogeneity of the Seve Nappe rocks, the unexpected thickness of its basal thrust zone (> 500 m) and that the drill hole, therefore, did not penetrate the bottom of the thrust zone. However, lower grade metasedimentary rocks were encountered in the lowermost part of the drill hole together with tens of metres thick mylonites that are, unexpectedly, rich in large garnets.

The drill core was documented on-site and XRF scanned off site. During various stages of the drilling, the borehole was documented by comprehensive downhole logging. This operational report provides an overview over the COSC-1 operations from drilling preparations to the sampling party and describes the available datasets and sample material.

Keywords

caledonides, COSC, deep hydrosphere, dynamics, europe, heat flow, himalaya, ICDP-2011/03, microbiology, norway, orogen, scandes, scandinavia, seismic, sweden, earth science

GCMD Science Keywords

EARTH SCIENCE > SOLID EARTH > ROCKS/MINERALS/CRYSTALS > METAMORPHIC ROCKS > METAMORPHIC ROCK FORMATION

More Metadata

iso19115: view inline / download xml
datacite: view inline / download xml
dif: view inline / download xml
escidoc: view inline / download xml

Location

Latitude: 63.4063 Longitude: 13.203057

CDP Approach

Authors are all Science Team Members (STMs) and clearly assigned to defined chapters and contributions

Print copies may be optional, e.g. via the Journal ***S***(cientific)***D***(rilling): **http://www.scientific-drilling.net/**

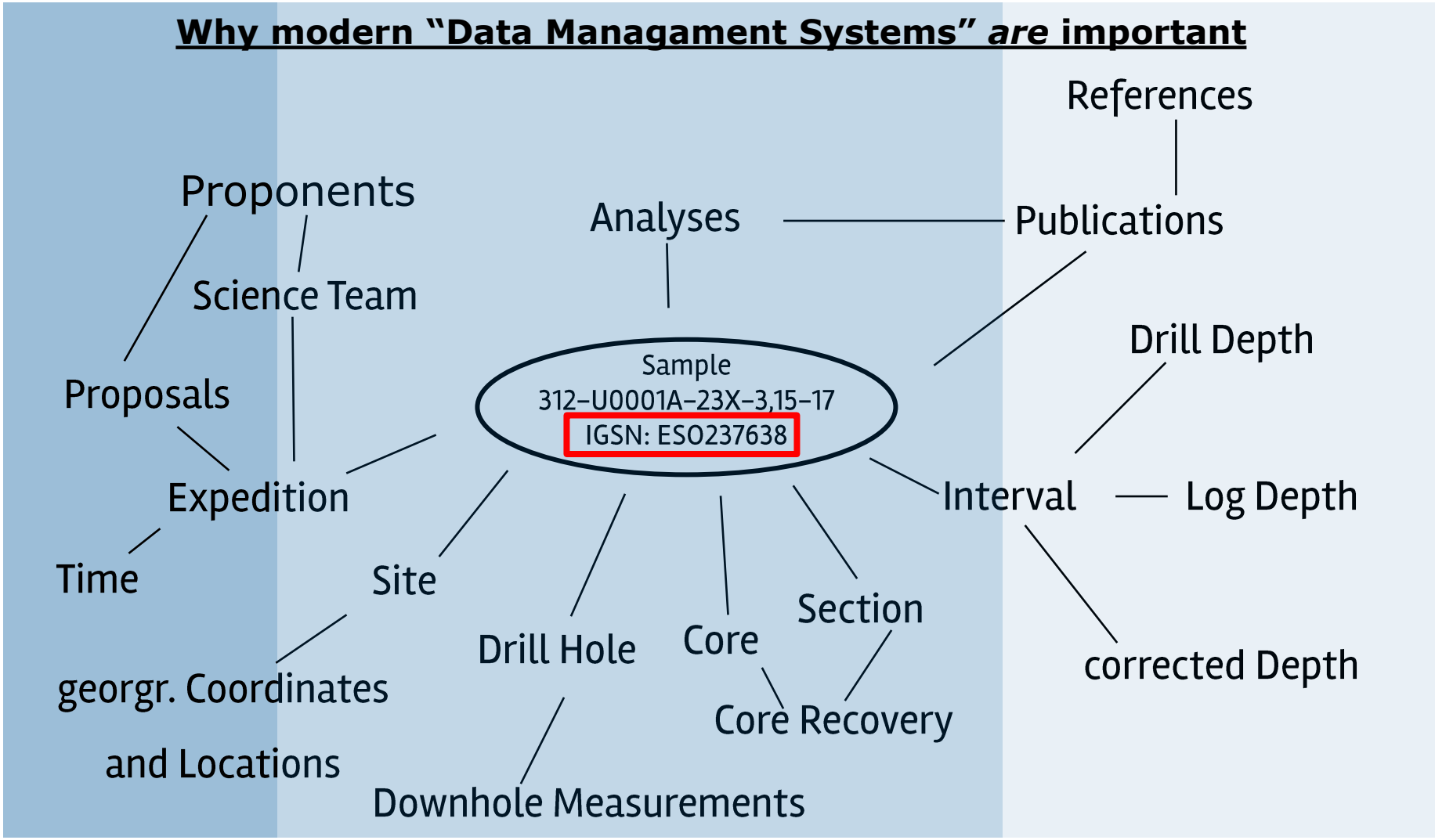
Attached with **DOI** (**D**igital **O**bject **I**dentifier)

http://pmd.gfz-potsdam.de/icdp/showshort.php?id=escidoc:1095929

ICDP DATA MANAGEMENT: PUBLICATIONS SUPPORT

Target	Task Sharing and Duties	ICDP Approach
Data Acquisition	Drilling Information System (DIS)	❑ Without Ideas and Targets no Project ❑ Without Project no Drilling ❑ Without Drilling no Hole ❑ Without Hole no Core ❑ Without Core no Data ❑ Without Data no Scientific Output ❑ Hence without all the above: NO GEO-SCIENCE PUBLISHING
Data Dissemination	Web Site within the ICDP Information Network	
Data and Research Publication	Datasets in Scientific Drilling Data Centers	

ICDP Data, Meta-Data and Samples



ICDP Data, Meta-Data and Samples

Ambiguous Naming

M1	GEOROC	DETAILS	MAP	43.7	141.55	IGNEOUS : VOLCANIC : INTERMEDIATE : ANDESITE
M-1	GEOROC	DETAILS	MAP	44.2	145.1	IGNEOUS : VOLCANIC : MAFIC : BASALT
M1	GEOROC	DETAILS	MAP	38.5	140.5	IGNEOUS : VOLCANIC : NOT-GIVEN
M-1	GEOROC	DETAILS	MAP	44.4	-116.7	IGNEOUS : VOLCANIC : MAFIC : BASALT
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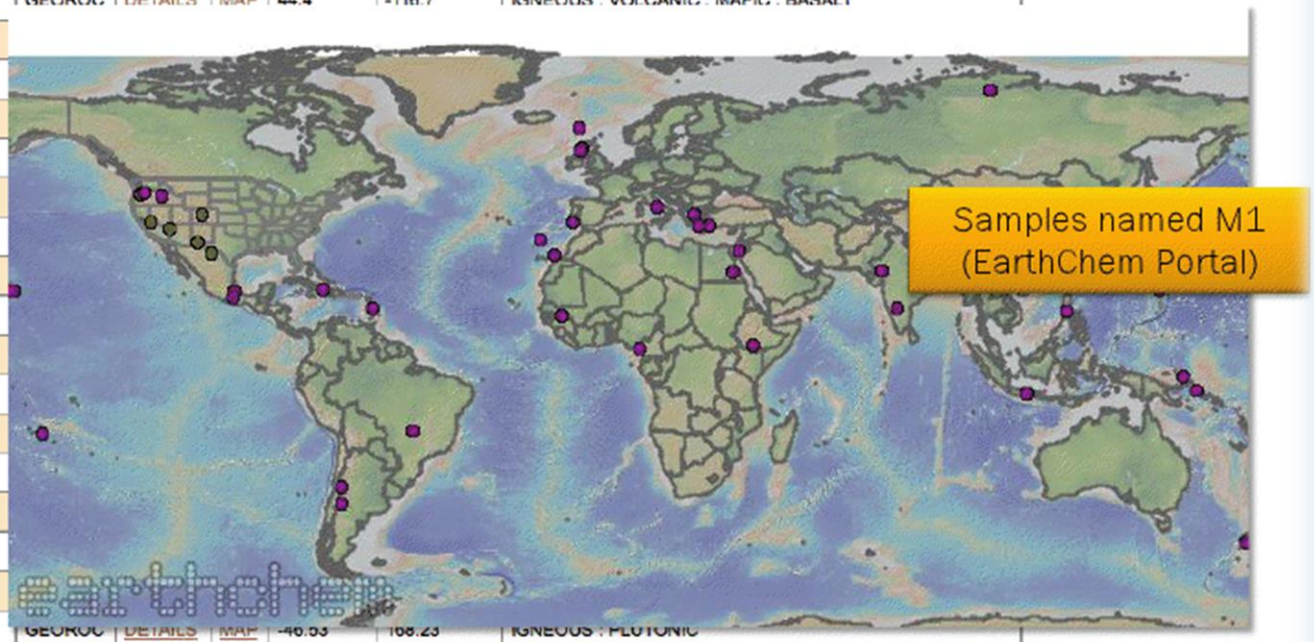
M1	GEOROC	DETAILS	MAP	-46.53	168.23	IGNEOUS : PLUTONIC
M-1	GEOROC	DETAILS	MAP	26.5	101.7	IGNEOUS : PLUTONIC : ULTRAMAFIC : PERIDOTITE
M1	GEOROC	DETAILS	MAP	36.73	24.42	IGNEOUS : VOLCANIC : FELSIC : RHYOLITE
M-1 August	GEOROC	DETAILS	MAP	32.0222	130.682	IGNEOUS : VOLCANIC : INTERMEDIATE : ANDESITE

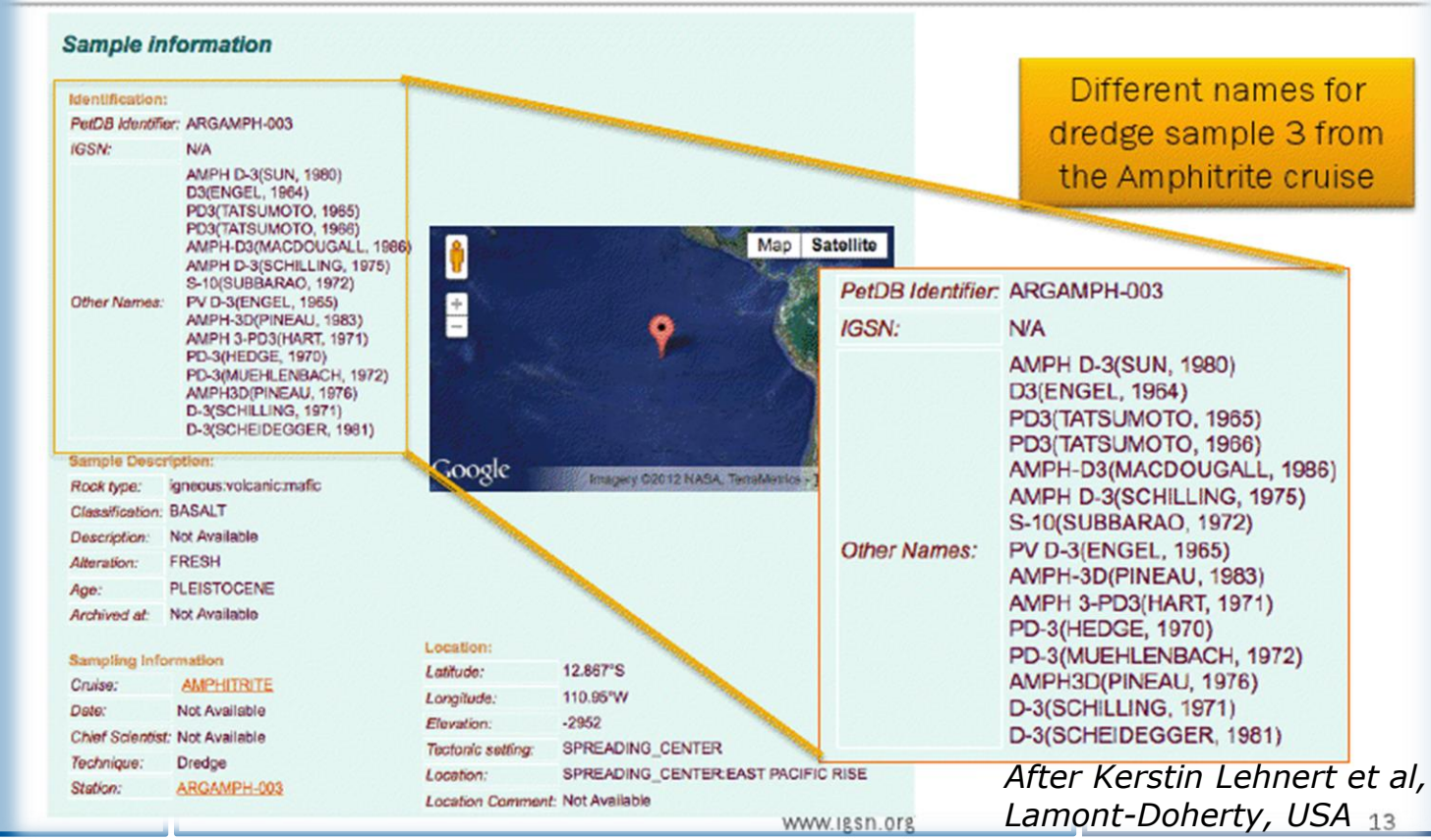


After Kerstin Lehnert et al, Lamont-Doherty, USA

12

ICDP Data, Meta-Data and Samples

Changing Names



After Kerstin Lehnert et al, Lamont-Doherty, USA 13

ICDP Data, Meta-Data and Samples

Target

Avoid bad Data Karma!

If data are not properly reported or not regarded as „important" when project data are used again in the future, your science might be in trouble!

Why modern "Data Managament Systems" *are* important

ELSEVIER

Marine Geology 180 (2002) 29–47

MARINE GEOLOGY

Sedimentation rates off SW Africa since the late Miocene deciphered from spectral analyses of [illegible] and GRA bulk density profiles: ODP Sites 1081–1084

Thomas J. Gorgas [a,*], [illegible] H. Wilkens [b,1]

[a] Department of Geology and Geophysics, SOEST, University of Hawai'i, [illegible] East-West Road, Honolulu, HI 96822, USA
[b] Office of Naval Research, Code 32[illegible]GG, 800 N. Quincy Street, Arlington, VA 22217-5660, USA

Received 1 July 2000; received [illegible] revised form [illegible] December 2000; accepted 27 May 2001

Abstract

Sedimentation rates (SRs) off SW Africa [illegible] calculated by performing spectral analyses in the depth domain on borehole and gamma [illegible] ation (GRA) bulk density data from ODP Sites 1081–1084. Inversion and integration of SRs versus depth from spectral analysis yielded detailed SR profiles in the time domain. Our technique allowed the detection of excursions in calculated SRs that not only often differed from those established through coarse-scaled biostratigraphic data but also revealed a greater regional variability in the sediment accumulation over time. High-resolution bulk density data exhibited distinct periodicity in the waveband of Milankovitch cycles (precession at 19–23 kyr; obliquity at 41 kyr; eccentricity at 100 kyr). The pronounced Milankovitch cyclicity suggests that climate

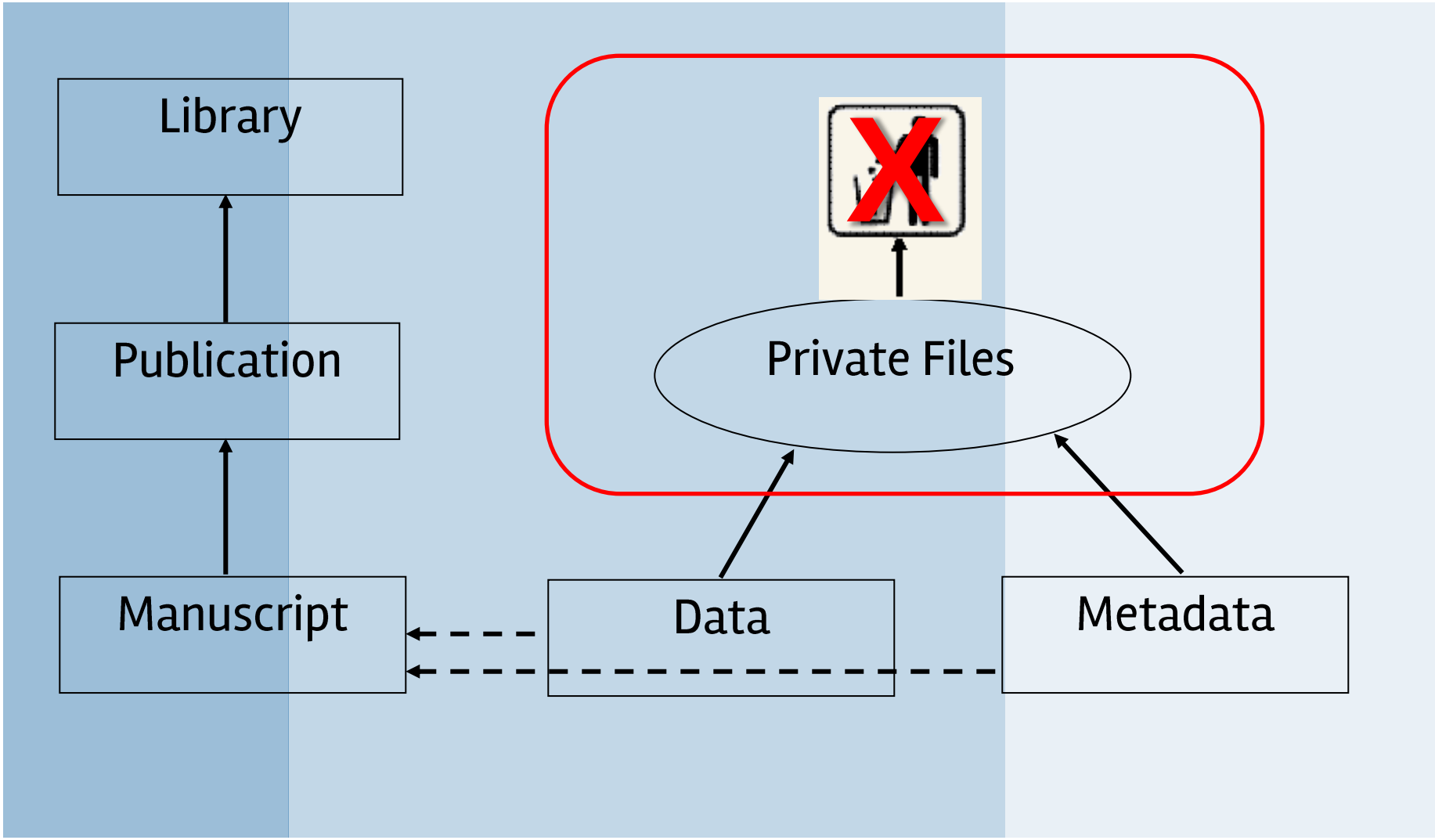
NO IGSN's!

- Experience from ODP LEG 175 raises the question: „Do we have all possible data available? Answer: „No!" – e.g. due to a lack of peer-reviewed „Operational Reports", which includes all samples and primary data associated with unambigious IGSN's.

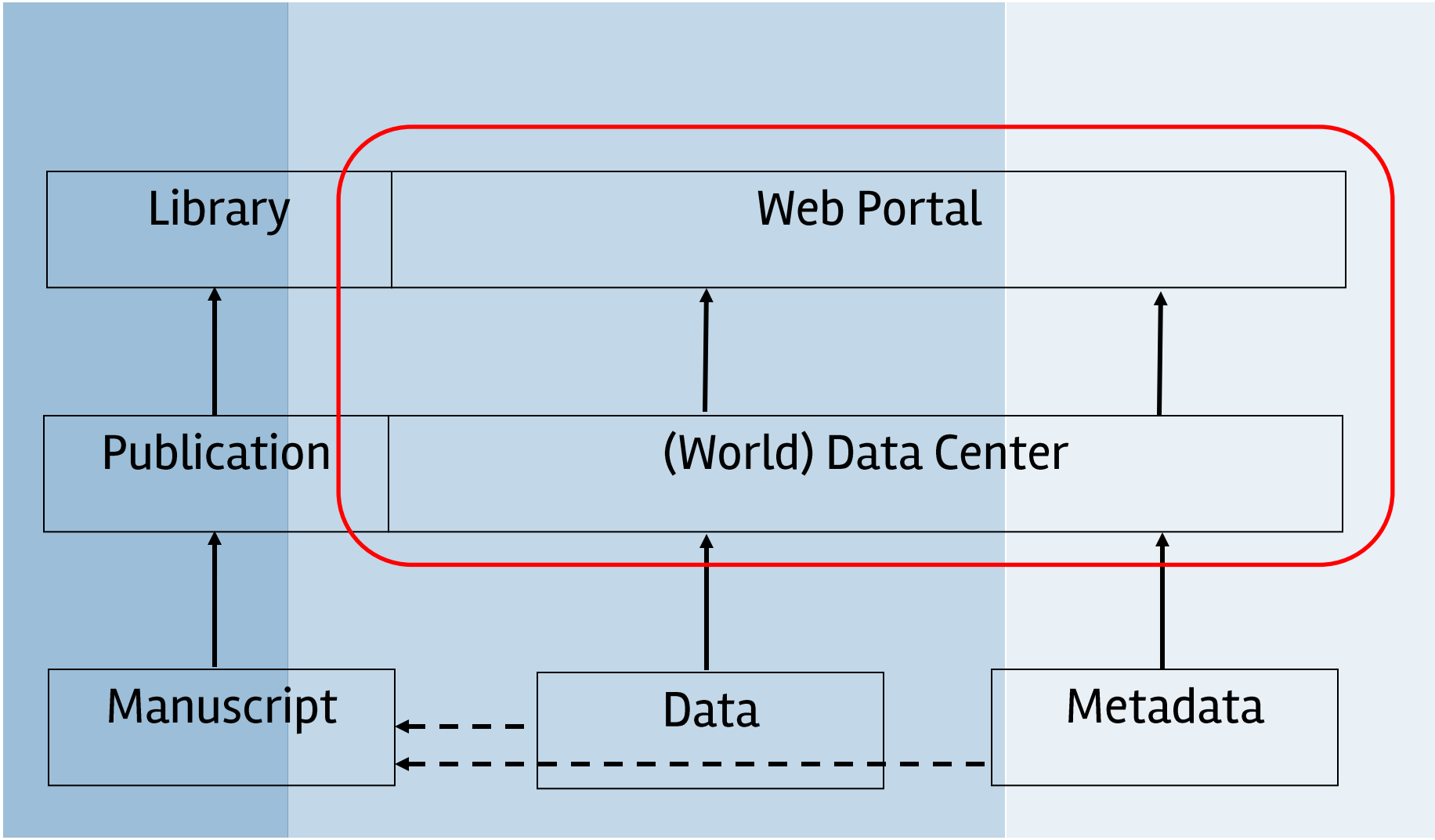
ICDP Approach

- ✓ Data produced in the past and not retrievable or reproducible any longer today highlight the importance of modern "Data Management" concepts!
- ✓ Such modern data management strategies are now rapidly expanding into Geo-Sciences

Benefits – Publication and Citation of Data



Benefits – Publication and Citation of Data



Benefits – Publication and Citation of Data and Samples

Unique Identifiers

DOI: Digital Object Identifier

IGSN: International Geo Sample Number

- For published articles, journals, and monographs DOI: **10.2204/iodp.sd.11.02.2011**
- For published data sets

  DOI: **10.1594/GFZ.SDDB.1071**
- For published samples

  IGSN: **ICD237AG8**

Select & Zoom

Science Reports

Scientific Drilling Into the San Andreas Fault Zone —An Overview of SAFOD's First Five Years

by Mark Zoback, Stephen Hickman, William Ellsworth, and the SAFOD Science Team

doi:10.2204/iodp.sd.11.02.2011

Abstract

The San Andreas Fault Observatory at Depth (SAFOD) was drilled to study the physical and chemical processes controlling faulting and earthquake generation along an active, plate-bounding fault at depth. SAFOD is located near double-difference tomography, Zhang et al. (2009) determined a detailed Vp, Vs, and Vp/Vs model for the SAFOD

Detailed planning of a research experiment focused on drilling, sampling, and downhole measurements directly within the San Andreas Fault Zone began with an international workshop held in Asilomar, California in December 1992. This workshop highlighted the importance of deploying a permanent geophysical observatory within the crust, as indicated by the *in situ* stress and heat-flow measurements in the SAFOD Pilot Hole and Main Hole.

Figure 6. Photographs of the section of core 2 that crosses the SDZ (see Figs. 4 and 5) as they appear in the Photographic Atlas of the SAFOD Phase 3 (Table 1). The colored lettering indicates where samples were used for TS, XRD, and SEM presented in the Phase 3 Core Atlas. Note that the center and bottom photos are of the core sections split in half. Measured depths (in the sidetrack) are shown in feet (1 ft=30.48 cm).

The twenty-seven experimental deployments also guided the selection of sensors for the observatory and revealed mechanical and environmental issues that dictated the design of the observatory. The ambient temperature of up to 120°C at the planned depth of the observatory controlled the choice of downhole electronics and sensors. More seriously, the borehole fluid contains gases that penetrate past conventional O-rings and wireline insulation. Consequently, a design was

ICDP's Meta-Data Sample Tracking

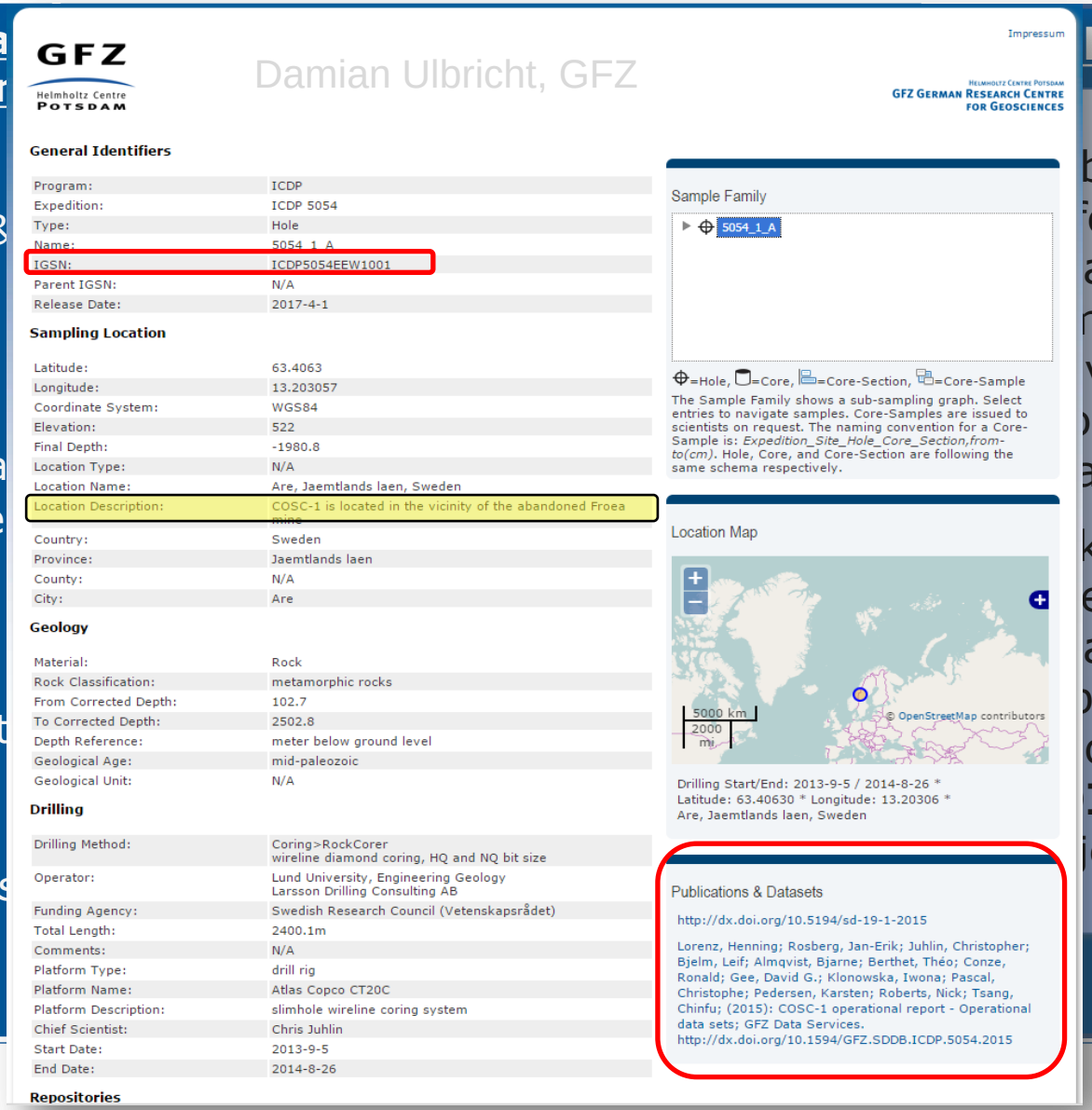
GFZ-interna Cooperatio

- ICDP & GFZ Bibliothek -8 Information Dienste
- Implements **I**nternationa **G**eo-**S**ample **N**umber (**IGSN**) strategy in ICDP project with new data mana-gement tools (e.g. COSC)

P Approach

b-based tool eature meta- a (e.g., on nple origin, venance, logy, GPS ation, etc.)

ks to both earch and a report lications ociated with a **I** (**D**igital ject **I**dentifier)



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Damian Ulbricht, GFZ

Impressum

GFZ German Research Centre for Geosciences

General Identifiers

Program:	ICDP
Expedition:	ICDP 5054
Type:	Hole
Name:	5054_1_A
IGSN:	ICDP5054EEW1001
Parent IGSN:	N/A
Release Date:	2017-4-1

Sampling Location

Latitude:	63.4063
Longitude:	13.203057
Coordinate System:	WGS84
Elevation:	522
Final Depth:	-1980.8
Location Type:	N/A
Location Name:	Are, Jaemtlands laen, Sweden
Location Description:	COSC-1 is located in the vicinity of the abandoned Froea mine
Country:	Sweden
Province:	Jaemtlands laen
County:	N/A
City:	Are

Geology

Material:	Rock
Rock Classification:	metamorphic rocks
From Corrected Depth:	102.7
To Corrected Depth:	2502.8
Depth Reference:	meter below ground level
Geological Age:	mid-paleozoic
Geological Unit:	N/A

Drilling

Drilling Method:	Coring>RockCorer wireline diamond coring, HQ and NQ bit size
Operator:	Lund University, Engineering Geology Larsson Drilling Consulting AB
Funding Agency:	Swedish Research Council (Vetenskapsrådet)
Total Length:	2400.1m
Comments:	N/A
Platform Type:	drill rig
Platform Name:	Atlas Copco CT20C
Platform Description:	slimhole wireline coring system
Chief Scientist:	Chris Juhlin
Start Date:	2013-9-5
End Date:	2014-8-26

Repositories

Sample Family

5054_1_A

=Hole, =Core, =Core-Section, =Core-Sample

The Sample Family shows a sub-sampling graph. Select entries to navigate samples. Core-Samples are issued to scientists on request. The naming convention for a Core-Sample is: *Expedition_Site_Hole_Core_Section,from-to(cm)*. Hole, Core, and Core-Section are following the same schema respectively.

Location Map

5000 km
2000 mi
© OpenStreetMap contributors

Drilling Start/End: 2013-9-5 / 2014-8-26 *
Latitude: 63.40630 * Longitude: 13.20306 *
Are, Jaemtlands laen, Sweden

Publications & Datasets

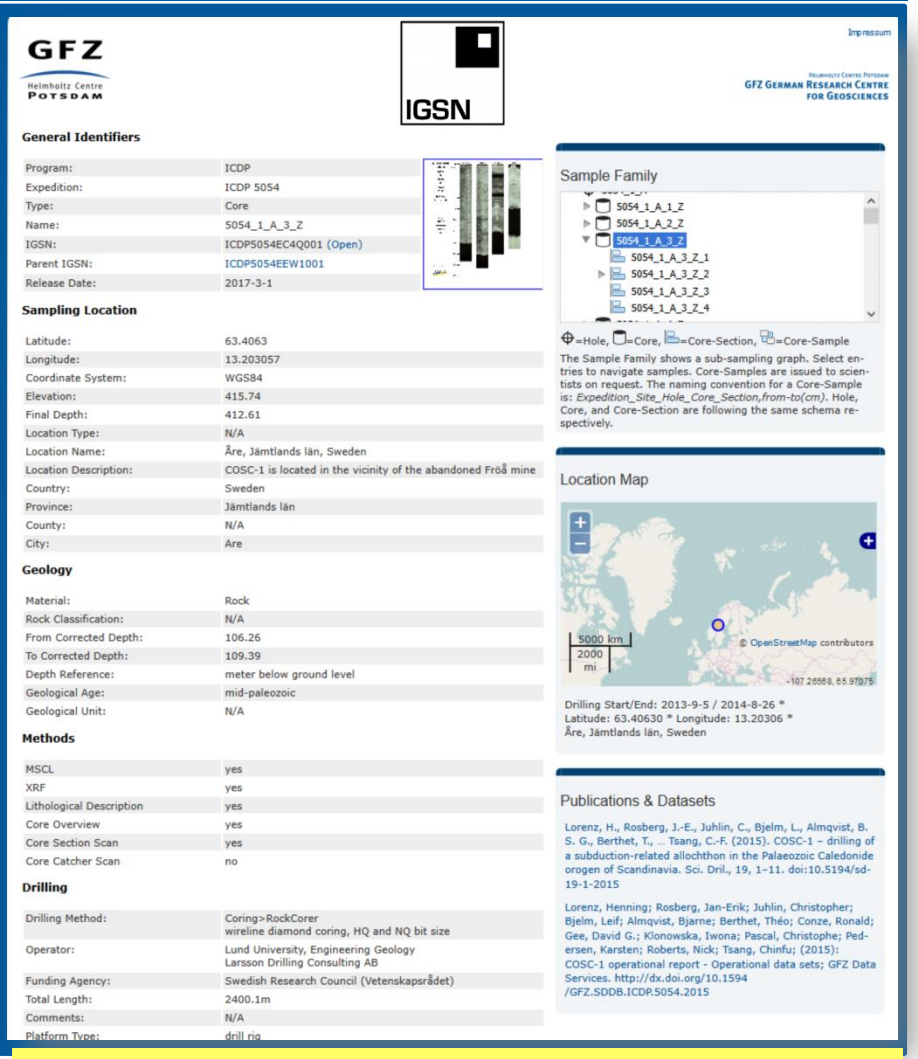
http://dx.doi.org/10.5194/sd-19-1-2015

Lorenz, Henning; Rosberg, Jan-Erik; Juhlin, Christopher; Bjelm, Leif; Almqvist, Bjarne; Berthet, Théo; Conze, Ronald; Gee, David G.; Klonowska, Iwona; Pascal, Christophe; Pedersen, Karsten; Roberts, Nick; Tsang, Chinfu; (2015): COSC-1 operational report - Operational data sets; GFZ Data Services. http://dx.doi.org/10.1594/GFZ.SDDB.ICDP.5054.2015

IGSN International Geo Sample Number

- Globally unique identifier for physical samples and materials
- Central registration based on the Handle system
- QR Code on the sample

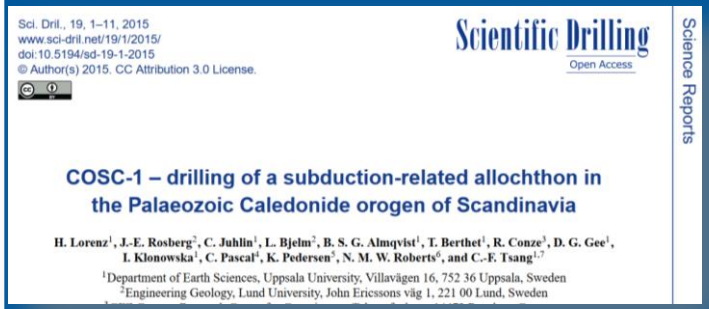
- Virtual sample description online via IGSN Landing Pages
- IGSN citation in papers possible



http://hdl.handle.net/10273/ICDP5054EX2Z501

ICDP Publication Formats – Example COSC

Initial paper (DOI)



Sci. Dril., 19, 1–11, 2015
www.sci-dril.net/19/1/2015/
doi:10.5194/sd-19-1-2015
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Scientific Drilling
Open Access

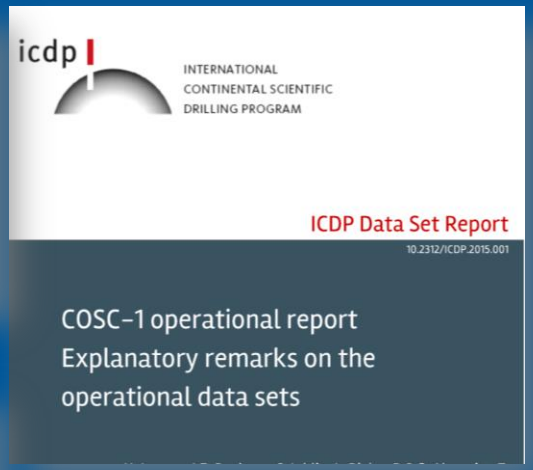
Science Reports

COSC-1 – drilling of a subduction-related allochthon in the Palaeozoic Caledonide orogen of Scandinavia

H. Lorenz[1], J.-E. Rosberg[2], C. Juhlin[1], L. Bjelm[2], B. S. G. Almqvist[1], T. Berthet[1], R. Conze[3], D. G. Gee[1], I. Klonowska[1], C. Pascal[4], K. Pedersen[5], N. M. W. Roberts[6], and C.-F. Tsang[1,7]

[1]Department of Earth Sciences, Uppsala University, Villavägen 16, 752 36 Uppsala, Sweden
[2]Engineering Geology, Lund University, John Ericssons väg 1, 221 00 Lund, Sweden

Reports (DOI)

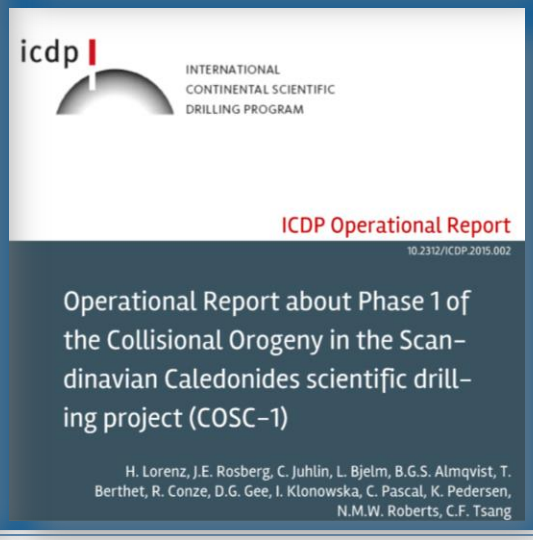


icdp INTERNATIONAL CONTINENTAL SCIENTIFIC DRILLING PROGRAM

ICDP Data Set Report

10.2312/ICDP.2015.001

COSC–1 operational report
Explanatory remarks on the operational data sets



icdp INTERNATIONAL CONTINENTAL SCIENTIFIC DRILLING PROGRAM

ICDP Operational Report

10.2312/ICDP.2015.002

Operational Report about Phase 1 of the Collisional Orogeny in the Scandinavian Caledonides scientific drilling project (COSC–1)

H. Lorenz, J.E. Rosberg, C. Juhlin, L. Bjelm, B.G.S. Almqvist, T. Berthet, R. Conze, D.G. Gee, I. Klonowska, C. Pascal, K. Pedersen, N.M.W. Roberts, C.F. Tsang

Datasets (DOI)

icdp INTERNATIONAL CONTINENTAL SCIENTIFIC DRILLING PROGRAM

GFZ Helmholtz Centre Potsdam

Impressum

Dataset

COSC-1 operational report - Operational data sets

Released

Cite as:

Copy citation to clipboard

Lorenz, Henning; Rosberg, Jan-Erik; Juhlin, Christopher; Bjelm, Leif; Almqvist, Bjarne; Berthet, Théo; Conze, Ronald; Gee, David G.; Klonowska, Iwona; Pascal, Christophe; Pedersen, Karsten; Roberts, Nick; Tsang, Chinfu (2015): COSC-1 operational report - Operational data sets. GFZ Data Services. http://doi.org/10.1594/GFZ.SDDB.ICDP.5054.2015

Data Files

(R) All Data
Sites 2427 Bytes
Holes 15133 Bytes
Core Runs 85575 Bytes
Core Sections 300426 Bytes
Core Boxes 59763 Bytes
Core Overviews 61279327 Bytes
(R) Lithological Descriptions
(R) Sample Request
(R) Core Samples taken
Mud Samples taken 20781 Bytes
(R) Multi Sensor Core Logging
(R) XRF logging
Borehole Measurement Campaigns 4966 Bytes
Borehole Measurement Runs 12358 Bytes
(R) Borehole Measurement Files
(R) Composite Borehole Log Plots
Drilling Time Breakdown per Day 11110 Bytes
Drilling Time Breakdown of Tasks 102353 Bytes
Drilling Technical Parameter 35538 Bytes
Used Drill Bits 2981 Bytes

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End of moratorium: /2017-03-01

Abstract

The Collisional Orogeny in the Scandinavian Caledonides (COSC) scientific drilling project focuses on mountain building processes in a major mid-Paleozoic orogen in western Scandinavia and its comparison with modern analogues. The transport and emplacement of subduction-related highgrade continent-ocean transition (COT) complexes onto the Baltoscandian platform and their influence on the underlying allochthons and basement will be studied in a section provided by two fully cored 2.5 km deep drill holes. This operational report concerns the first drill hole, COSC-1 (ICDP 5054-1-A), drilled from early May to late August 2014.

COSC-1 is located in the vicinity of the abandoned Fröå mine, close to the town of Åre in Jämtland, Sweden and was planned to sample a thick section of the Seve Nappe and to penetrate its basal thrust zone into the underlying lower grade metamorphosed allochthon. Despite substantial technical problems, the drill hole reached 2495.8 m driller's depth and nearly 100 % core recovery was achieved. Surprising was the homogeneity of the Seve Nappe rocks, the unexpected thickness of its basal thrust zone (> 500 m) and that the drill hole, therefore, did not penetrate the bottom of the thrust zone. However, lower grade metasedimentary rocks were encountered in the lowermost part of the drill hole together with tens of metres thick mylonites that are, unexpectedly, rich in large garnets.

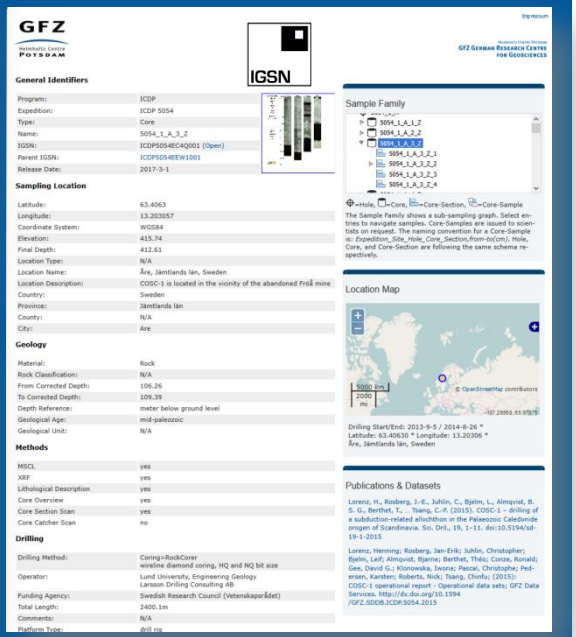
The drill core was documented on-site and XRF scanned off site. During various stages of the drilling, the borehole was documented by comprehensive downhole logging. This operational report provides an overview over the COSC-1 operations from drilling preparations to the sampling party and describes the available datasets and sample material.

Dataset Contact

Lorenz, Henning; Uppsala University, Department of Earth Sciences, Geophysics; henning.lorenz(_at_)geo.uu.se
COSC Consortium; http://cosc.icdp-online.org

IGSN

International Geo Sample Number



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IGSN

General Identifiers

Program: ICDP
Expedition: ICDP 5054
Type: Core
Name: 5054_1_A_3_Z
IGSN: ICDP5054EC4Q001 (Open)
Parent IGSN: ICDP5054EW1001
Release Date: 2017-3-1

Sampling Location

Latitude: 63.4063
Longitude: 13.203057
Coordinate System: WGS84
Elevation: 415.74
Final Depth: 412.61
Location Type: N/A
Location Name: Åre, Jämtlands län, Sweden
Location Description: COSC-1 is located in the vicinity of the abandoned Fröå mine
Country: Sweden
Province: Jämtlands län
County: N/A
City: Are

Geology

Material: Rock
Rock Classification: N/A
From Corrected Depth: 106.26
To Corrected Depth: 109.39
Depth Reference: meter below ground level
Geological Age: mid-paleozoic
Geological Unit: N/A

Methods

MSCL: yes
XRF: yes
Lithological Description: yes
Core Overview: yes
Core Section Scan: yes
Core Catcher Scan: no

Drilling

Drilling Method: Coring>RockCorer wireline diamond coring, HQ and NQ bit size
Operator: Lund University, Engineering Geology Larsson Drilling Consulting AB
Funding Agency: Swedish Research Council (Vetenskapsrådet)
Total Length: 2400.1m
Comments: N/A
Platform Type: drill rig

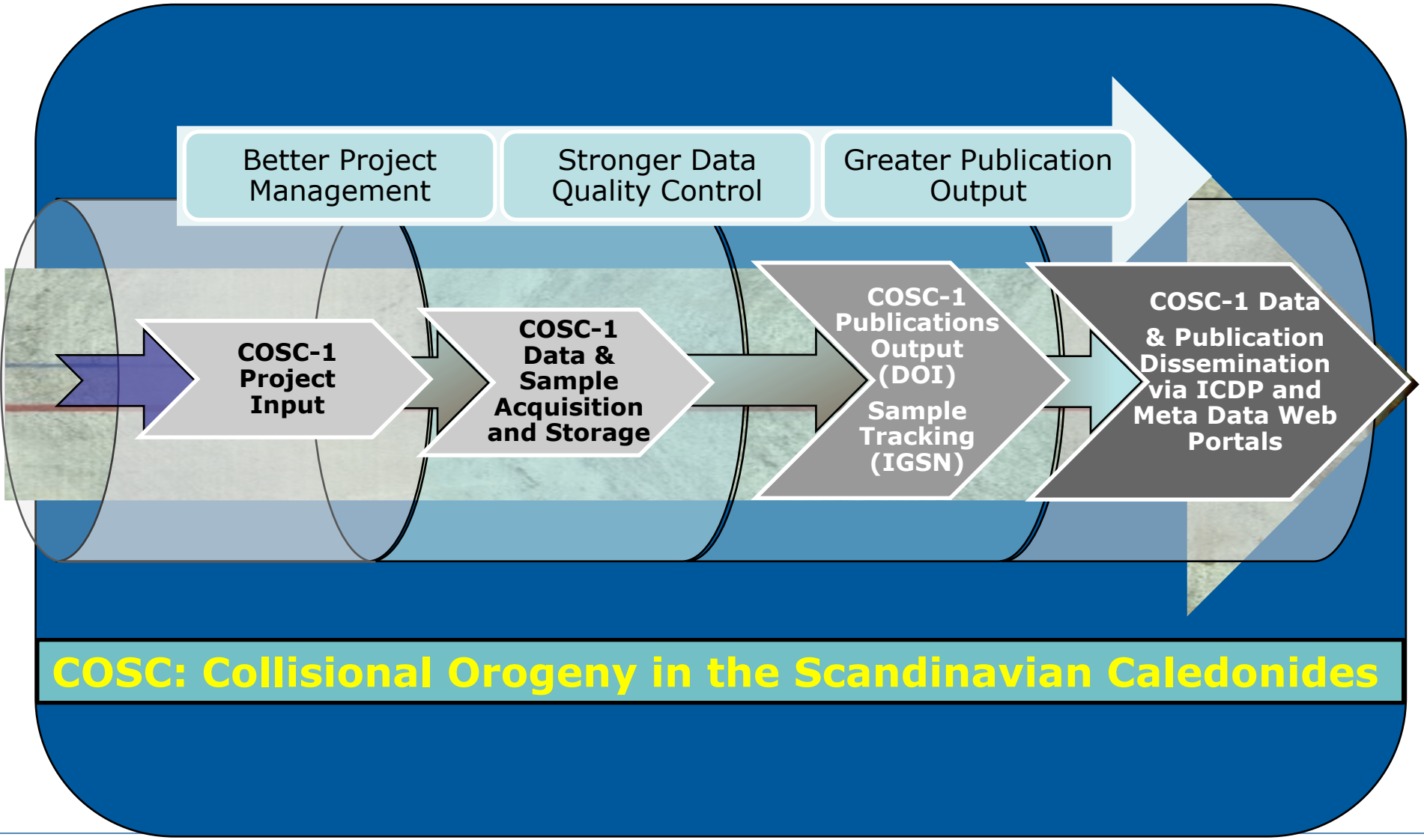
Sample Family

Location Map

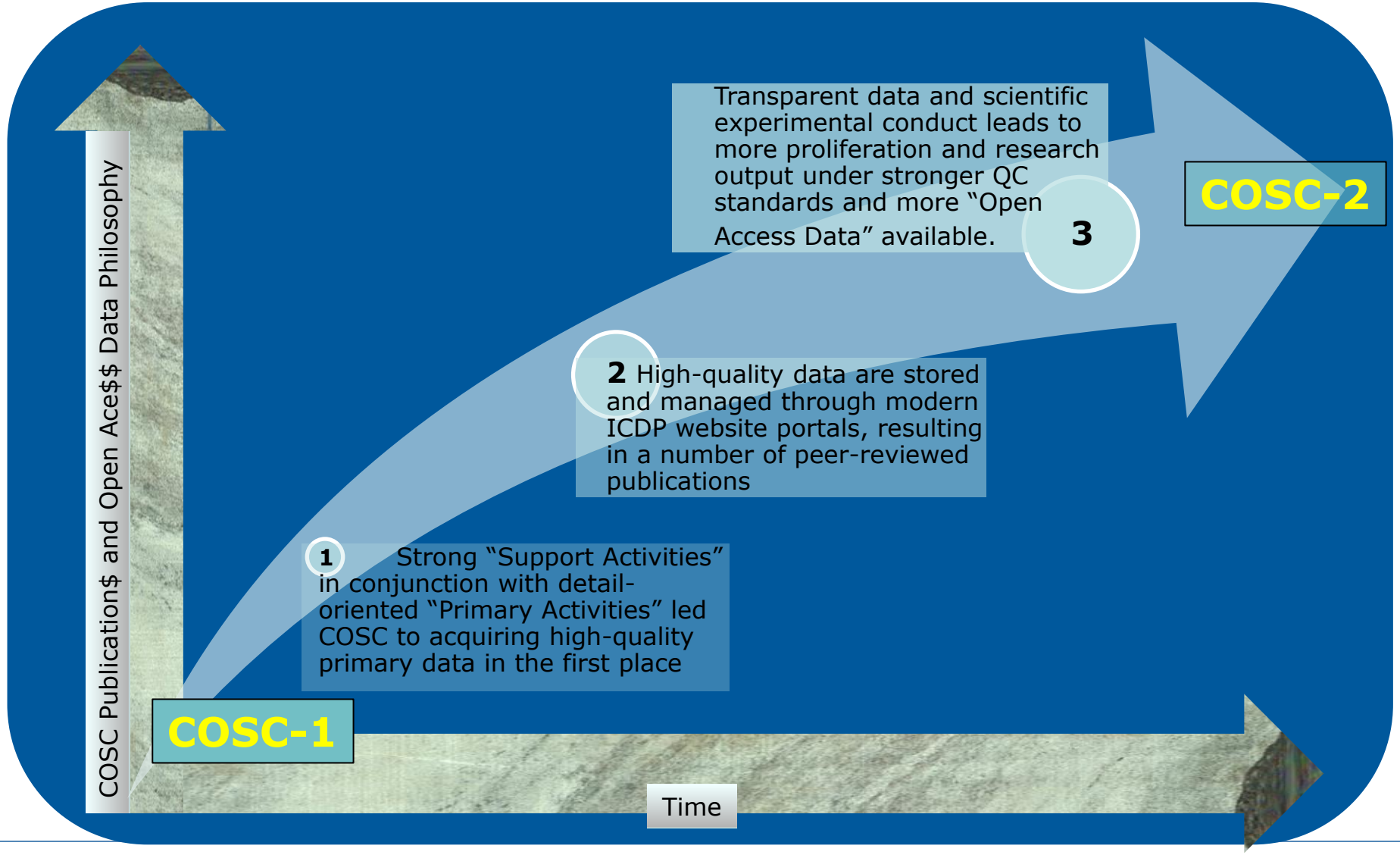
Publications & Datasets

4465 registered IGSN's for COSC (Oct 2016)

ICDP Mission: Enhancing the *Value Chain* Core



ICDP Mission: Enhancing the *Value Chain* Core



ICDP Mission: Enhancing the *Value Chain* Core

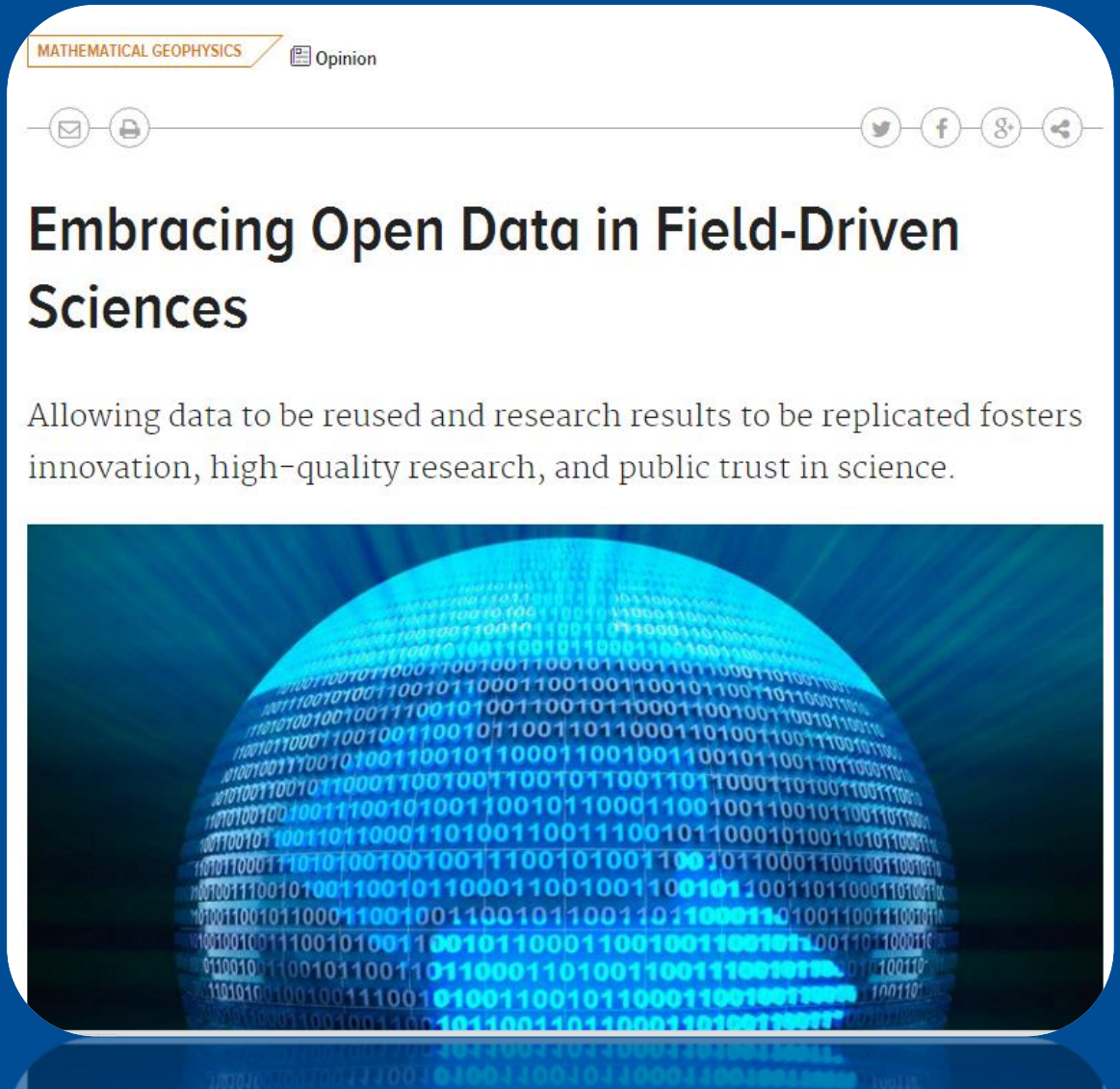
Why "Modern Data Management Systems" *are* important

- On A&E (1999) **Underwater Volcano Hunters**: Interview with Mr. Terry Kirby, pilot of the PISCES research submarine of the HURL program at the University of Hawaii-Manoa on his vision of data preservation and data storage.

Take-Home Message:

Apply modern Data Management Tools in your own research!

Thank you for your attention



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Questions/Comments?