Data and libraries – the DataCite consortium

Jan Brase, TIB - DataCite

December 13th, 2010

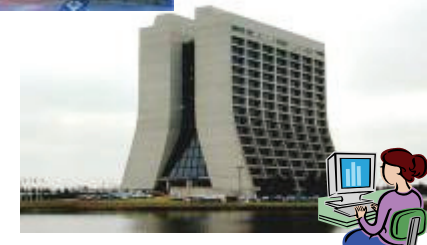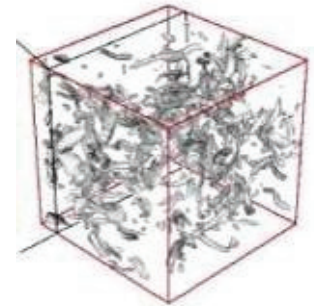**Open Access Open Data Conference, Köln**

I
Data and Libraries

Science Paradigms

- Thousand years ago:
  science was **empirical**
    describing natural phenomena

- Last few hundred years:
  theoretical branch
    using models, generalizations

$$\left(\frac{\dot{a}}{a}\right)^2 = \frac{4\pi G\rho}{3} - K\frac{c^2}{a^2}$$

- Last few decades:
  a **computational** branch
    simulating complex phenomena

- Today:
  data exploration (eScience)
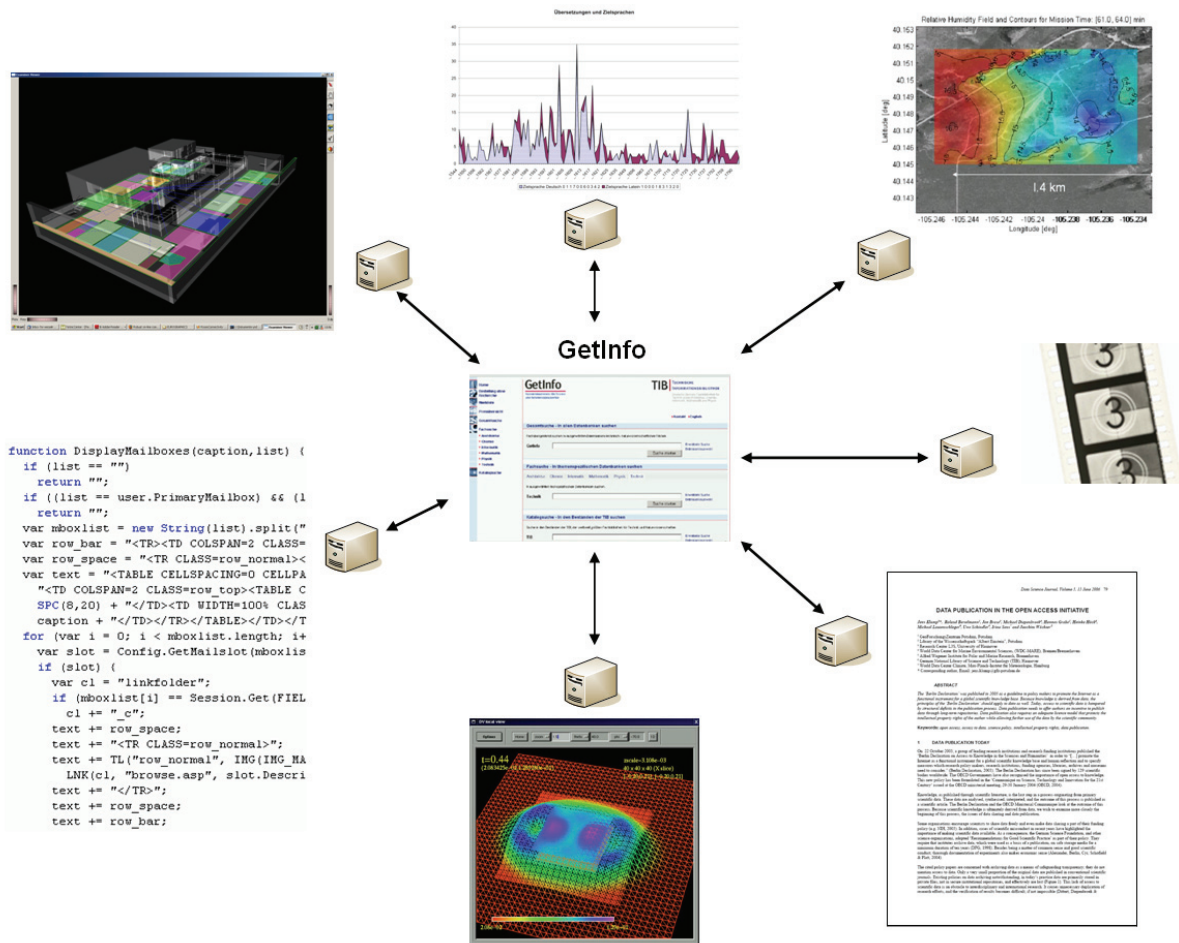   *unify theory, experiment, and
    simulation*

Jim Gray, *eScience Group, Microsoft Research*

Consequences for Libraries

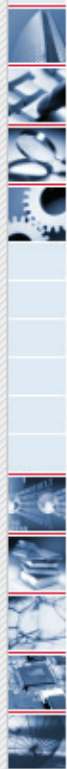- Scientific Information is more than a published article or a book

- Libraries should open their cataolgues to this non-textual information

- The catalogue of the future is NOT ONLY a window to the library's holding, but

- A portal in a net of trusted providers of scientific content

We do not have it
BUT
We know where you can find it

And here is the link to it!

Vision 2015

- **Examples**

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chemistry, information technology,
mathematics and physics.

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Detail view

◄ ►

Title:	SAFOD Main Hole downhole logging data phase 1.2 1894-2123m, year: 2004
Author(s):	SAFOD,
Published in:	2008;
Publisher:	GeoForschungsZentrum Potsdam(GFZ) (Potsdam, Germany)
Document type:	Research Data
Language:	English
DOI:	10.1594/GFZ.SDDB.1121

Abstract

SAFOD is motivated by the need to answer fundamental questions about the physical and chemical processes controlling faulting and earthquake generation within a major plate-bounding fault. SAFOD will drill and instrument an inclined borehole across the San Andreas Fault Zone to a depth of 3.2 km, targeting a repeating microearthquake source. The drill site is located west of the vertical San Andreas Fault on a segment of the fault that moves through a combination of aseismic creep and repeating microearthquakes. It lies at the extreme northern end of the rupture zone of the 1966, Magnitude 6 Parkfield earthquake, the most recent in a series of events that have ruptured the fault five times since 1857. This data set contains open hole geophysical wireline logging data from 1894-2123m (measured depth relative to Kelly Bushing, which is 9,45m above ground level).
This dataset is cited by doi: 10.1029/2006GC001388.

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Scientific Drilling Database

Data from Deep Earth Sampling and Monitoring

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GFZ POTSDAM   icdp

Glossary
Catalogue

Dataset Description

Citation: SAFOD, ; (2008): SAFOD Main Hole downhole logging data phase 2 (2005), 2975-3387m.
Scientific Drilling Database. doi:10.1594/GFZ.SDDB.1127

[Download Citation (EndNote)]

DOI: 10.1594/GFZ.SDDB.1127

Title: SAFOD Main Hole downhole logging data phase 2 (2005), 2975-3387m

Abstract: SAFOD is motivated by the need to answer fundamental questions about the physical and chemical processes controlling faulting and earthquake generation within a major plate-bounding fault. SAFOD will drill and instrument an inclined borehole across the San Andreas Fault Zone to a depth of 3.2 km, targeting a repeating microearthquake source. The drill site is located west of the vertical San Andreas Fault on a segment of the fault that moves through a combination of aseismic creep and repeating microearthquakes. It lies at the extreme northern end of the rupture zone of the 1966, Magnitude 6 Parkfield earthquake, the most recent in a series of events that have ruptured the fault five times since 1857. The Parkfield region is the most comprehensively instrumented section of a fault anywhere in the world, and has been the focus of intensive study for the past two decades. This data set contains open hole geophysical wireline logging data from 2975-3387m (rel. to rig floor, 9,45m abv gnd)

[Show in Google Earth]

Related Publications:

Activities: **SAFOD-1-C**

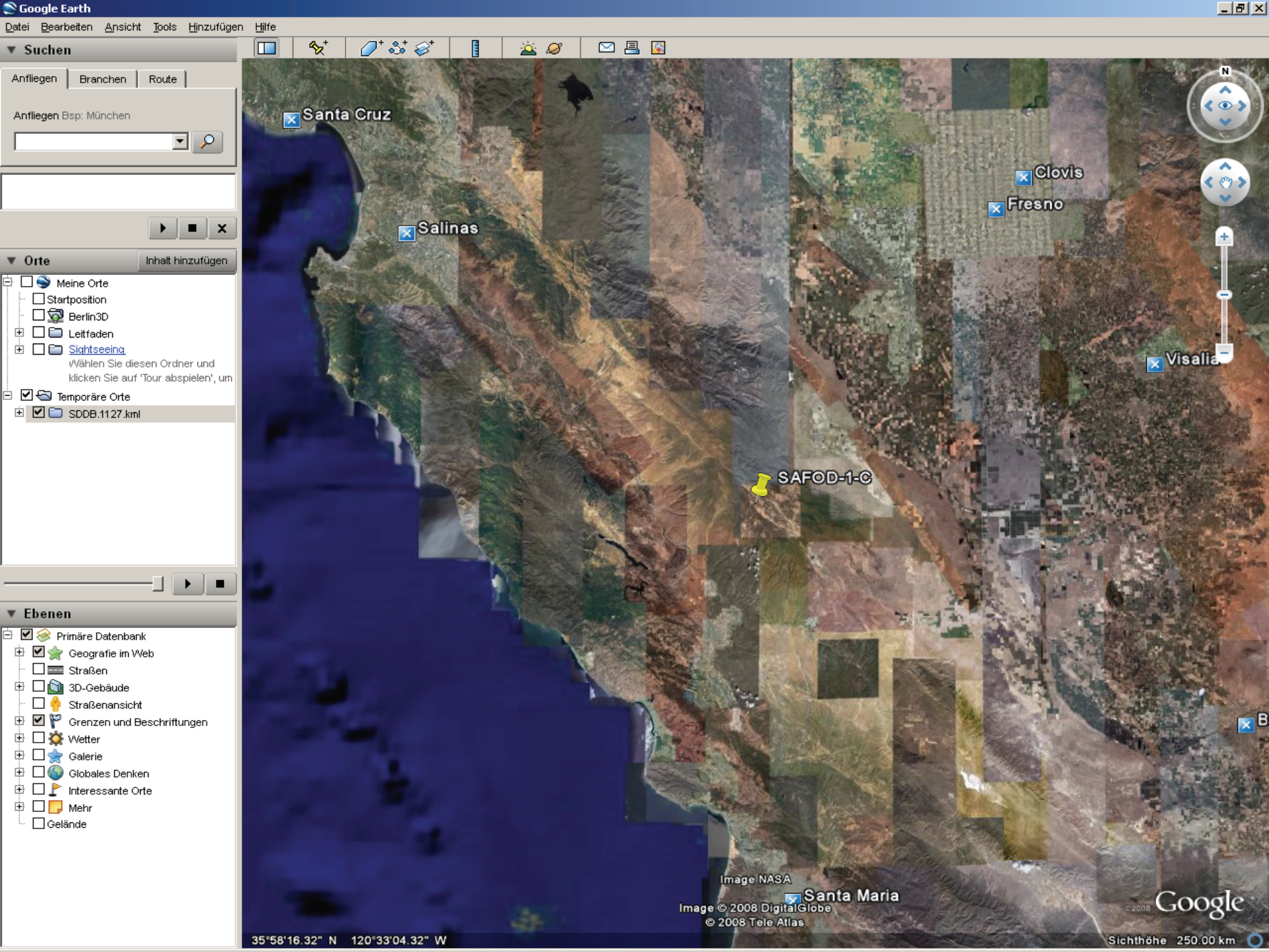|	
Latidude:	35.9712 °N
Longitude:	-120.5512 °E
Elevation:	m above site datum
Date/Time:	2004-07-20 00:00:00 UTC
Program:	International Continental Scientific Drilling Program
Expedition:	SAFOD
Platform:	Land based
Gear:	drilling rig

Datapoints: 99974

Parameter(s):

	Parameter [Unit]	Principal Investigator	Method
☐	Bit size [cm]	SAFOD	length
☐	Caliper [cm]	SAFOD	not specified
☐	Shear Wave Slowness [US/F]	SAFOD	calculation
☐	Compressional Wave Slowness [US/F]	SAFOD	calculation
☐	gamma ray [GAPI]	SAFOD	gamma ray

☐	gamma ray [GAPI]	SAFOD	gamma ray logging
☐	Relative Bearing [°]	SAFOD	not specified
☐	Caliper from x axis of x-y Caliper(s) [cm]	SAFOD	not specified
☐	Cablehead Tension [N]	SAFOD	not specified
☐	Field Normalized Compensated Neutron Porosity [PU]	SAFOD	calculation
☐	gamma ray [GAPI]	SAFOD	gamma ray logging
☐	Potassium [%]	SAFOD	calculation
☐	Vert resolution matched (2 ft) res - DOI 10 inch [Ohmm]	SAFOD	calculation
☐	Vert resolution matched (2 ft) res - DOI 20 inch [Ohmm]	SAFOD	calculation
☐	Vert resolution matched (2 ft) res - DOI 30 inch [Ohmm]	SAFOD	calculation
☐	Vert resolution matched (2 ft) res - DOI 60 inch [Ohmm]	SAFOD	calculation
☐	Vert resolution matched (2 ft) res - DOI 90 inch [Ohmm]	SAFOD	calculation
☐	Vert resolution matched (2 ft) res - DOI 120 inch [Ohmm]	SAFOD	calculation
☐	Porosity from ZDEN or ZDNC [PU]	SAFOD	not specified
☐	Spontaneous Potential Shifted [mV]	SAFOD	not specified
☐	Speed [m/s]	SAFOD	calculation
☐	Thorium [ppm]	SAFOD	calculation
☐	Uranium [ppm]	SAFOD	calculation
☐	ZDL correction [g/cm3]	SAFOD	calculation
☐	ZDL bulk density [g/cm3]	SAFOD	not specified

Separator: Comma ▼

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☐	gamma ray [GAPI]	SAFOD	gamma ray logging
☐	Relative Bearing [°]	SAFOD	not specified
☐	Caliper from x axis of x-y Caliper(s) [cm]	SAFOD	not specified
☐	Cablehead Tension [N]	SAFOD	not specified
☐	Field Normalized Compensated Neutron Porosity [PU]	SAFOD	calculation
☐	gamma ray [GAPI]	SAFOD	gamma ray logging
☐	Potas		calculation
☐	Vert r inch [		calculation
☐	Vert r inch [		calculation
☐	Vert r inch [		calculation
☐	Vert r inch [		calculation
☐	Vert r inch [		calculation
☐	Porosity from ZDEN or ZDNC [PU]	SAFOD	not specified
☐	Spontaneous Potential Shifted [mV]	SAFOD	not specified
☐	Speed [m/s]	SAFOD	calculation
☐	Thorium [ppm]	SAFOD	calculation
☐	Uranium [ppm]	SAFOD	calculation
☐	ZDL correction [g/cm3]	SAFOD	calculation
☐	ZDL bulk density [g/cm3]	SAFOD	not specified

Öffnen von dataset1127selection.csv

Sie möchten folgende Datei herunterladen:

dataset1127selection.csv

Vom Typ: Microsoft Office Excel Comma Separated Values File
Von: http://www.icdp-online.org

Wie soll Firefox mit dieser Datei verfahren?

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○ Auf Diskette/Festplatte speichern

☐ Für Dateien dieses Typs immer diese Aktion ausführen
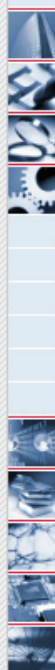
OK   Abbrechen

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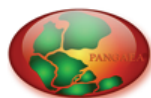|	
Title:	Geological map of Potter Peninsula (King George Island, South Shetland Islands, Antarctic Peninsula)
Author(s):	Kraus, Stefan; del Valle, Rodolfo
Published in:	2008;
Publisher:	PANGAEA - Publishing Network for Geoscientific & Environmental Data (Bremen/Bremerhaven)
Document type:	Research Data
Language:	English
DOI:	10.1594/PANGAEA.667386

Abstract

We present here a new geological map of Potter Peninsula (King George Island, South Shetland Islands). Like on adjacent Barton Peninsula, the morphology on Potter Peninsula is predominantly characterized by a glacial landscape with abrasion platforms offshore, in parts steep cliffs along the coast, and a rather smooth, hilly countryside in the interior. Potter Peninsula forms part of the downthrown Warszawa Block. The volcanic sequence cropping out here belongs to the King George Island Supergroup, with an observed local minimum thickness of approx. 90 m (Kraus 2005). The most prominent morphological feature is Three Brothers Hill (196 m), a well known andesitic plug showing conspicuous columnar jointing. It marks the final stage of activity of a Paleogene volcano, whose eruption products (lava flows and pyroclastic rocks), together with hypabyssal intrusions related to the volcanism, make up most of the lithology observed on Potter Peninsula (Kraus 2005).
The Three Brothers Hill volcanic complex is eroded down to its deepest levels. Thus, the stratigraphically deepest units from the initial phase of volcanic activity are cropping out in some parts (Kraus & del Valle, in Wiencke et al. 2008). The lithology on Potter Peninsula comprises lava flows (~50%), pyroclastic rocks (ash-fallout, pyroclastic flow deposits, volcanic breccia and agglomerates, ~30%) and hypabyssal intrusions (dykes, sills and small subvolcanic intrusive bodies, ~20%). 40Ar/39Ar datings carried out on magmatic dykes from Potter Peninsula indicate a short, but intense intrusive event during the Lutetian (Kraus et al. 2007).

REFERENCE:
Kraus, Stefan (2005): Magmatic dyke systems of the South Shetland Islands volcanic arc (West Antarctica): reflections of the geodynamic history. PhD Thesis, LMU München: Fakultät für Geowissenschaften, 160 pp
Wiencke, Christian; Ferreyra, Gustavo A; Abele, Doris; Marenssi, Sergio (2008): The Antarctic ecosystem of Potter Cove, King-George Island (Isla 25 de Mayo): Synopsis of research performed 1999-2006 at the Dallmann Laboratory and Jubany Station. Reports on Polar and Marine Research, Alfred Wegener Institute

PANGAEA®
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Always quote citation when using data!

Data Description

RIS BIBTEX

Citation: **Kraus, Stefan; del Valle, Rodolfo (2008):** Geological map of Potter Peninsula (King George Island, South Shetland Islands, Antarctic Peninsula), *Instituto Antártico Chileno, Punta Arenas, Chile & Instituto Antártico Argentino, Buenos Aires, Argentina*, doi:10.1594/PANGAEA.667386

Reference(s): **Kraus, Stefan (2005):** Magmatic dyke systems of the South Shetland Islands volcanic arc (West Antarctica): reflections of the geodynamic history, *Dissertation, LMU München: Fakultät für Geowissenschaften*, 160 pp, urn:nbn:de:bvb:19-38277

Wiencke, Christian; Ferreyra, Gustavo A; Abele, Doris; Marenssi, Sergio (2008): The Antarctic ecosystem of Potter Cove, King-George Island (Isla 25 de Mayo): Synopsis of research performed 1999-2006 at the Dallmann Laboratory and Jubany Station, *Reports on Polar and Marine Research, Alfred Wegener Institute for Polar and Marine Research, Bremerhaven*, **571**, 411 pp, hdl:10013/epic.30038.d001

Kraus, Stefan; McWilliams, Michael; Pecskay, Zoltan (2007): New 40Ar/39Ar and K/Ar ages of dikes in the South Shetland Islands (Antarctic Peninsula), *In: Cooper A.K. & Raymond C.R. (eds.): Antarctica: A Keystone in a Changing World – Online Proceedings of the 10th ISAES, U.S. Geological Survey, Open-File Report 2007-1047, Short Research Paper*, **035**, 3, doi:10.3133/of2007-1047.srp035

Abstract: We present here a new geological map of Potter Peninsula (King George Island, South Shetland Islands). Like on adjacent Barton Peninsula, the morphology on Potter Peninsula is predominantly characterized by a glacial landscape with abrasion platforms offshore, in parts steep cliffs along the coast, and a rather smooth, hilly countryside in the interior. Potter Peninsula forms part of the downthrown Warszawa Block. The volcanic sequence cropping out here belongs to the King George Island Supergroup, with an observed local minimum thickness of approx. 90 m (Kraus 2005). The most prominent morphological feature is Three Brothers Hill (196 m), a well known andesitic plug showing conspicuous columnar jointing. It marks the final stage of activity of a Paleogene volcano, whose eruption products (lava flows and pyroclastic rocks), together with hypabyssal intrusions related to the volcanism, make up most of the lithology observed on Potter Peninsula (Kraus 2005).

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Size: 1972.0 kBytes

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Contact

GEOLOGICAL MAP OF POTTER PENINSULA
KING GEORGE ISLAND
SOUTH SHETLAND ISLANDS - ANTARCTICA

Potter Cove

Jubany Station (Arg)
Dallmann Laboratory (Arg/Ger)

WARSZAWA ICEFIELD

POLAR CLUB GLACIER

MAXWELL BAY

BRANSFIELD STRAIT

Reference

Pyroclastica, breccia, agglomerates	
Basaltic and andesitic lava flows, partly with indication of flow sense	
Hybabyssal intrusions (plugs and sills), mostly columnar jointed	
Basaltic to andesitic, occasionally acidic dykes	
Boundaries of superimposed flows	
Fault Fault with indication of sense	
Fossils: carbonized wood incorporated into pyroclastic rocks	

Refuge	
Building	
Heliport	
DGPS Station	
Hill	
Boundary of glacier	
Lake	
Temporary Creek	

250   0   500   1000 m

Elevations in meters - contour interval 3 meters
Projection: Universal Transverse Mercator (UTM), Zone 21
Reference ellipsoid: World Geodetic System 1984 (WGS-84)
Datum for elevations: Global geo-potential geoid model OSU-91a

geographic north
magnetic north
11.4°

average declination (2002): 11,4° E
average inclination (2002): -55,4°

Dirección Nacional del Antártico
Instituto Antártico Argentino
División Geología

Department für Geo- und Umweltwissenschaften
Sektion Geologie
Ludwig-Maximilians-Universität München

Topography:
J.C. Lusky, R.A. Vallverdú, D.R. Gomez-Izquierdo,
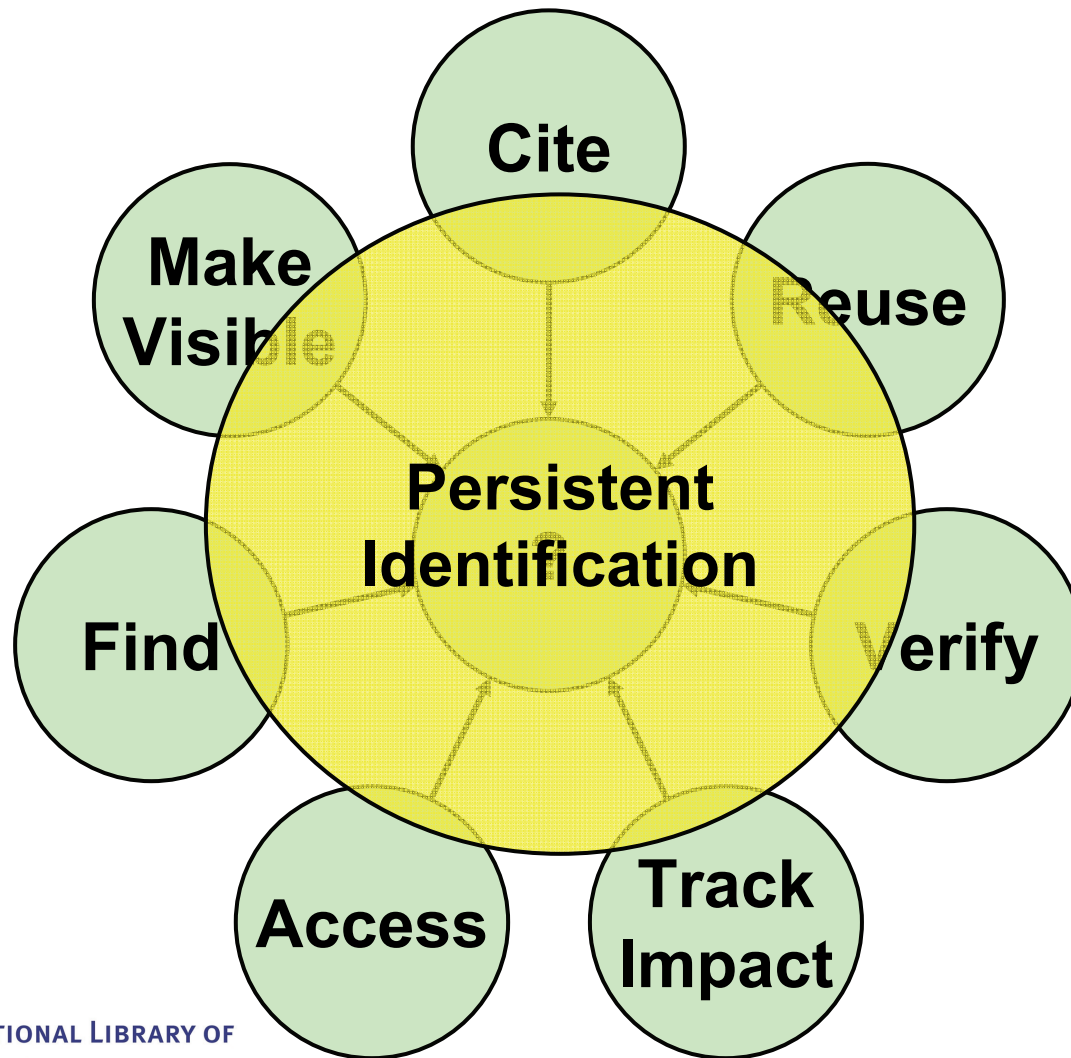R.A. del Valle & H. Felske (2001)

Geology:
S. Kraus & R.A. del Valle (2005)

Stranger Point

II

Persistent identification and citation

A key component for non-textual information

Results

- Citability of research data
- High visability of the data
- Easy re-use and verification of the data sets.
- Scientific reputation for the collection and documentation of data (Citation Index)
- Encouraging the *Brussels declaration on STM publishing* and *the Rules of good scientific practise (DFG)*
- Avoiding duplications
- Motivation for new research

Dataset citation using the DOI system

The DOI system offers an easy way to connect the article with the underlying data:

The dataset:

Storz, D et al. (2009):

Planktic foraminiferal flux and faunal composition of sediment trap L1_K276 in the northeastern Atlantic.

doi:10.1594/PANGAEA.724325

Is supplement to the article:

Storz, David; Schulz, Hartmut; Waniek, Joanna J; Schulz-Bull, Detlef; Kucera, Michal (2009): *Seasonal and interannual variability of the planktic foraminiferal flux in the vicinity of the Azores Current.*

Deep-Sea Research Part I-Oceanographic Research Papers, **56(1),** 107-124,

doi:10.1016/j.dsr.2008.08.009

III

The DataCite consortium

Status

- Since 2005 TIB was acting as a DOI registration agency. Since 2010 TIB is managing DataCite, a global consortium of now 15 libraries and information institutions,

- Over 900,000 records registered with DOI names so far
  - ~750,000 Datasets
  - ~15,000 Video clips
  - ~140,000 grey literature

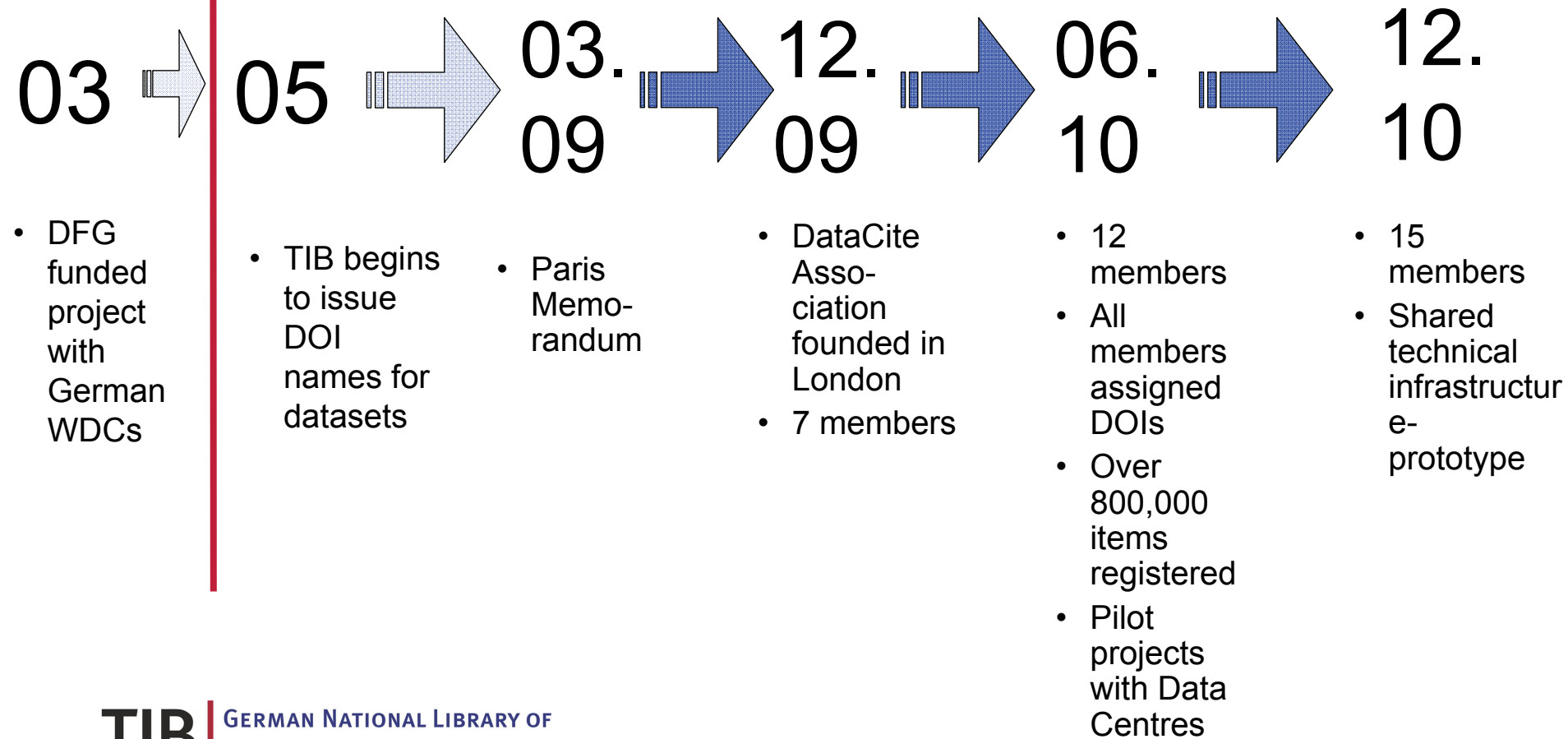- DataCite is Winner of 2010 Rethinking Resource Sharing Innovation Award

DataCite

- Global consortium carried by local institutions
- focused on improving the scholarly infrastructure around datasets and other non-textual information
- focused on working with data centres and organisations that hold data
- Providing standards, workflows and best-practice
- Initially, but not exclusivly based on the DOI system
- Founded December 1st 2009 in London

Rapid progress builds on foundational work

03 ➡ **05** ➡ **03. 09** ➡ **12. 09** ➡ **06. 10** ➡ **12. 10**

- DFG funded project with German WDCs

- TIB begins to issue DOI names for datasets

- Paris Memo-randum

- DataCite Asso-ciation founded in London
- 7 members

- 12 members
- All members assigned DOIs
- Over 800,000 items registered
- Pilot projects with Data Centres

- 15 members
- Shared technical infrastructur e- prototype

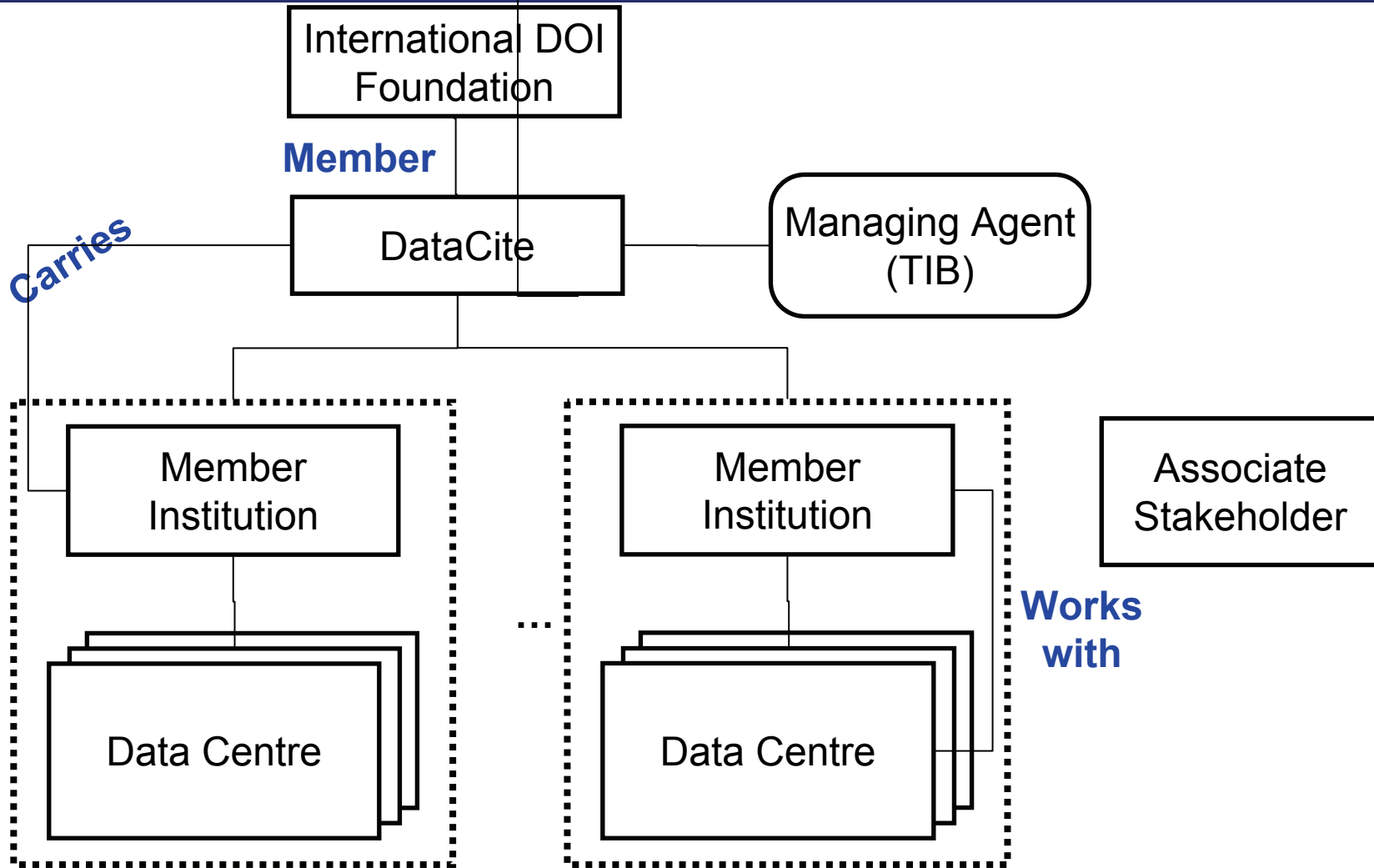**TIB** | **GERMAN NATIONAL LIBRARY OF SCIENCE AND TECHNOLOGY**

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- The British Library
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- Gesis, Deutschland
- Library of ETH Zürich
- L'Institut de l'Information Scientifique et Technique (INIST), Frankreich
- Swedish National Data Service (SND)
- Australian National Data Service (ANDS)

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- Microsoft Research
- Interuniversity Consortium for Political and Social Research (ICPSR)
- Korea Institute of Science and Technology Information (KISTI)

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- **DataCite <u>supports data centres</u> by providing workflows and standards for data publication**

- **DataCite <u>supports publisher</u> by enabling linking from articles to the underlying data**

  http://www.datacite.org