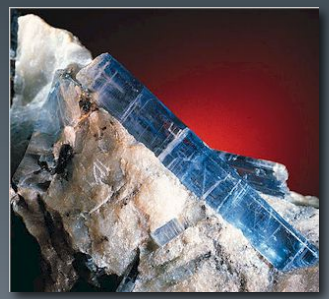
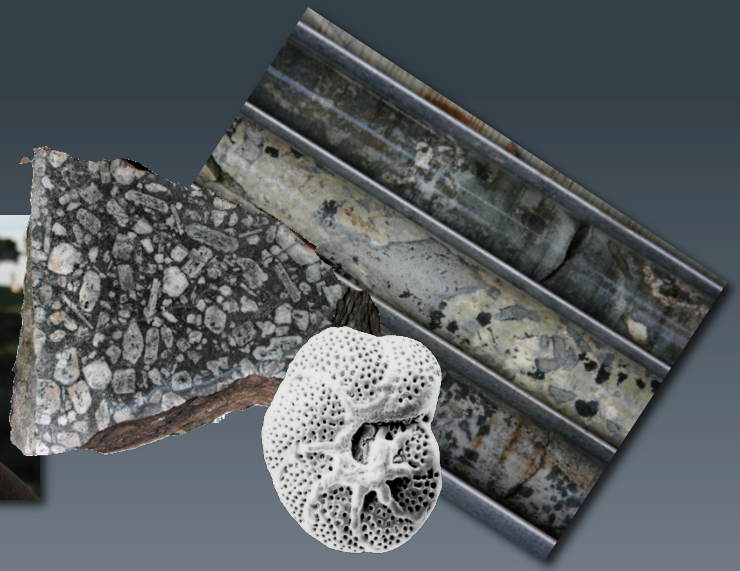
The IGSN & Geosamples

Physical Samples as Part of an Earth Science Cyberinfrastructure

Kerstin Lehnert, Director IEDA





Samples: 'Raw Data' for ex-situ Earth Observations

Soil sampling at the Shale Hill Critical Zone Observatory, Pennsylvania

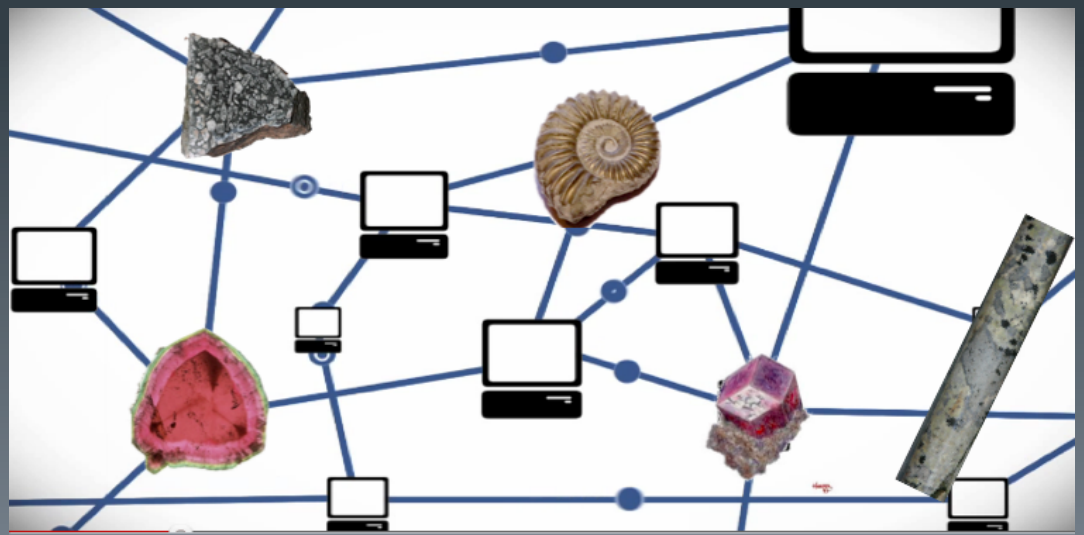
Water sampling at Christina CZO to measure suspended sediment composition

Connection to Digital Data

- Analysis and re-use of sample-based data requires access to sample metadata.
- Verification & reproducibility of sample-based observations requires access to the physical samples.
- Sharing of samples for use & re-use requires access to both.

Building an "Internet of Samples"

- Requirement #1: Samples need to be uniquely identifiable.
- Requirement #2: Samples need to have virtual representations.
- Requirement #3: Samples need to be 'cited' by their unique identifiers to link to the virtual representations and allow interoperability between data systems.



Opportunities for Physical Samples in the Digital Era

- Online sample catalogs (federated or central)
  - Discover and access samples for sharing and re-use;
  - Locate physical samples for verification of sample-based observations;
  - Access sample metadata for proper interpretation and re-use of sample-based data.
- Interoperability
  - Link data, samples, and publications;
  - Link all data acquired on a single sample & subsamples;
  - Integrate sample-based data with other data types.
- Shared cyberinfrastructure for sample and collection management that advances best practices and standards.

Imagine the Possibilities …

- Find all publications that mention a specific sample
- Find all data for that sample in easily usable, electronic format
- Find the sample and contact its owner
- Find samples based on their properties

IGSN & Geosamples

- International Geosample Number IGSN (www.igsn.org)
  - globally unique and persistent identifier for physical objects in the Earth Sciences
  - distributed by an international federation of Allocating Agents (IGSN e.V.)
- Geosamples (www.geosamples.org)
  - provides tools and services for users to catalog sample metadata (System for Earth Sample Registration SESAR)
  - ensures preservation & persistent access of sample metadata
  - operates IGSN registration services

IGSN International GeoSample Number

- A globally unique and persistent identifier for physical objects in the Earth Sciences
  - guaranteed to be unique via a centralized control mechanism.
  - resolves to virtual sample representations (sample metadata profiles) managed at federated IGSN Allocating Agents.

IGSN: GMY00007W

IGSN:	GMY00007W
Sample Name:	TN182_47_002
Other Name(s):	
Sample Type:	Individual Sample
Parent IGSN:	GMY00001B

Description

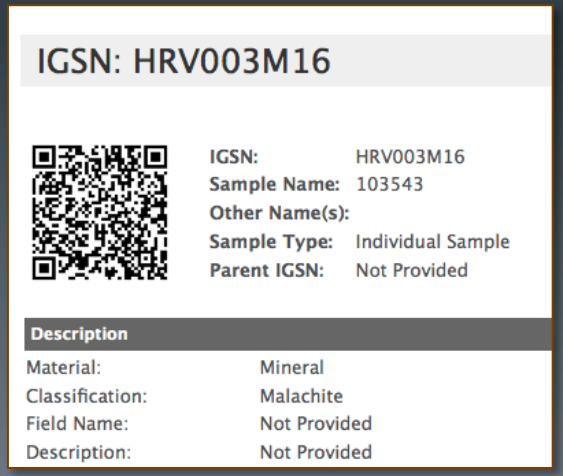
Material:	Rock
Classification:	Igneous>Plutonic>Mafic
Field Name:	gabbro, hornblende gabbro
Description:	mafic plutonic rock

IGSN: SSH00001H

IGSN:	SSH00001H
Sample Name:	SPMS01 40-50 cm
Other Name(s):	
Sample Type:	Terrestrial Section
Parent IGSN:	SSH000002

Description

Material:	Soil
Classification:	Sedimentary
Field Name:	Not Provided
Description:	Bulk

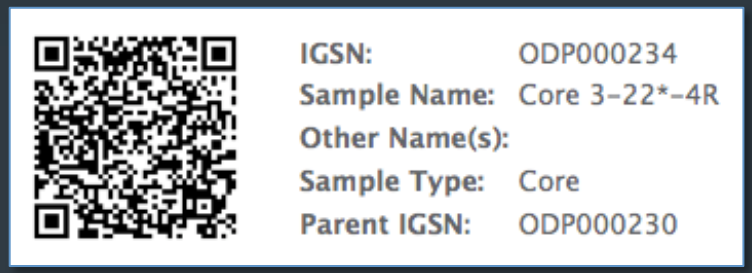


IGSN: HRV003M16

IGSN:	HRV003M16
Sample Name:	103543
Other Name(s):	
Sample Type:	Individual Sample
Parent IGSN:	Not Provided

Description

Material:	Mineral
Classification:	Malachite
Field Name:	Not Provided
Description:	Not Provided



IGSN: Syntax

- URI-type identifier (alphanumeric)
  - consists of
    - NAME SPACE
    - NAME SPECIFIC STRING
    - Uniqueness ensured via central registry of name spaces, operated by the IGSN e.V.

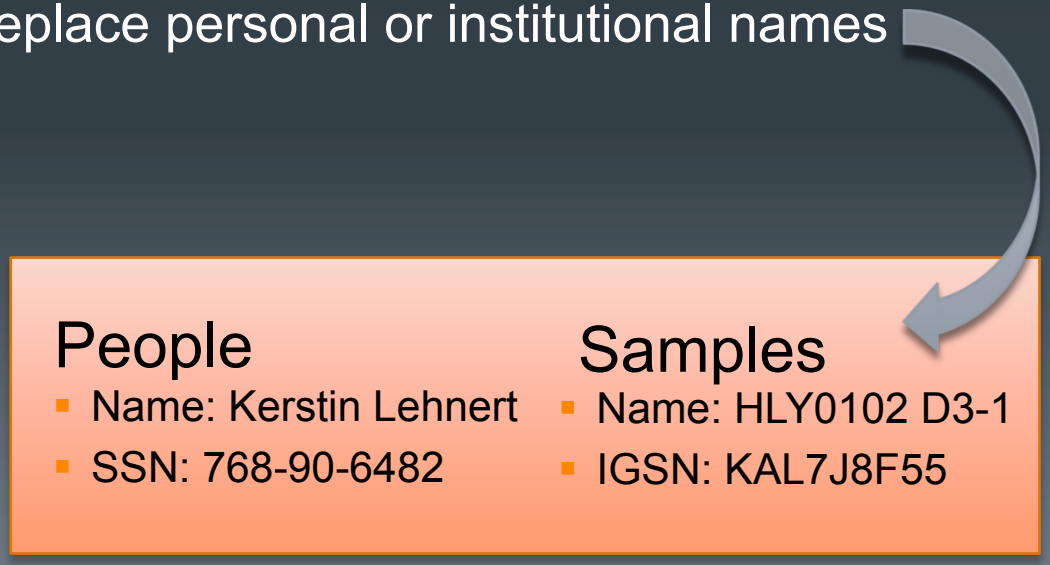
IGSN:ODP0HY78F

Unique user code [name space]

String of random characters [name specific string]

IGSN Characteristics

- mostly non-mnemonic
- broad application (rocks, sediments, soils, water, etc.)
- does not replace personal or institutional names



What objects get an IGSN?

- Locations such as drill-holes, wells, soil pits, sections
- 'Parent objects' such as cores, dredges, CTDs
- Individual specimens
  - Categorized by material (rock, mineral, soil, fluid, etc.)
  - Sub-divided by physical appearance: hand specimen, rock powder, thin section
  - subsamples (linked to 'parent sample')

IGSN Registration Workflow

1 User submits metadata

- Sample Name
- Location
- Sample type
- ….

2 Allocating Agent creates IGSN, stores metadata

Allocating Agent

3 AA registers IGSN

IGSN eV Registry

4 Confirm uniqueness

5 Send to user

IGSN:XYZ08H7JG

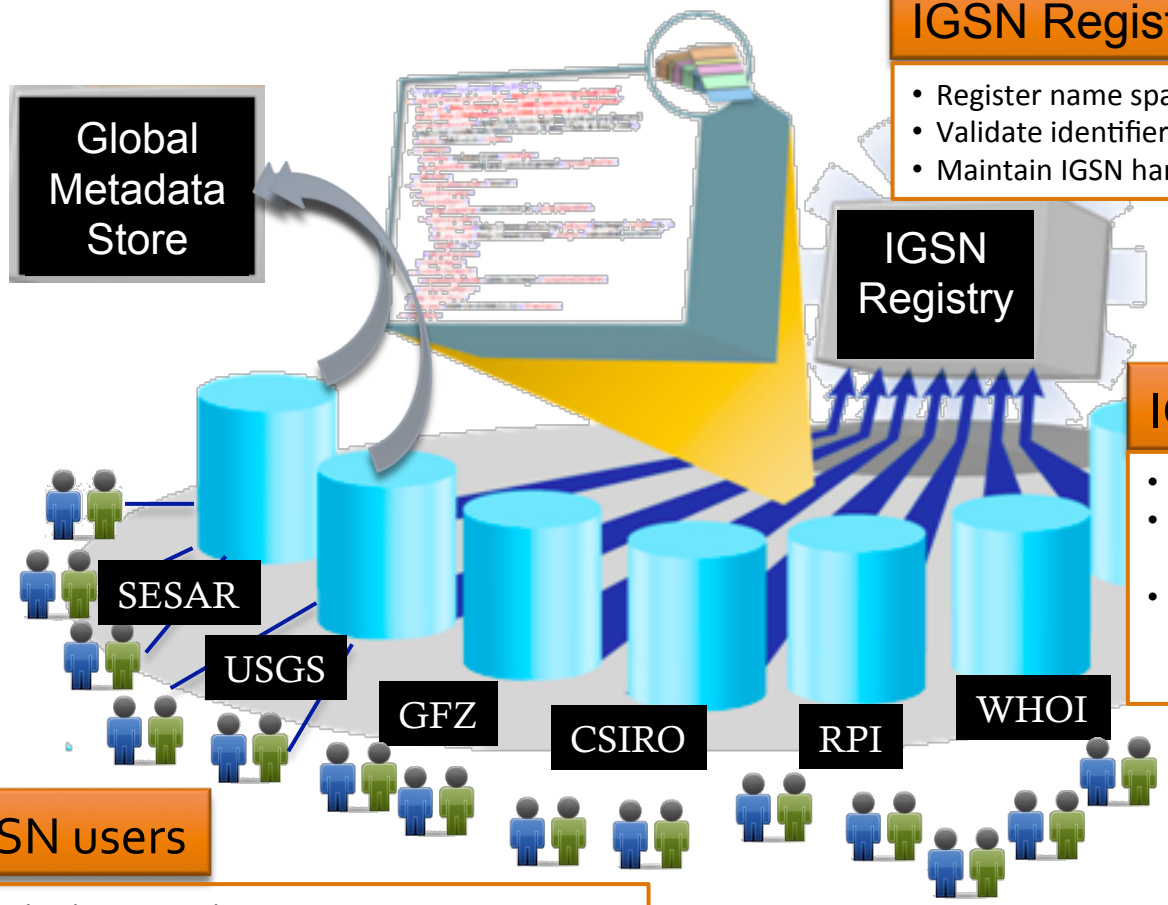
6 Use IGSN

Sample Label

publications

datasets

IGSN Architecture



IGSN Registry

- Register name spaces
- Validate identifier registration
- Maintain IGSN handle system

IGSN Allocating Agents

- Establish specimen description schema
- Validate metadata content for specimens
- Handle interaction with specimen collectors and curators to register specimens

IGSN users

- Make decisions what specimens to register
- Registers samples through one of the higher level namespaces
- Maintain physical collections

Diagram modified after http://www.adlnet.gov/adl-registry/

Governance: IGSN e.V.

- Non-profit organization registered in Germany ("eingetragener Verein") to operate an IGSN registration service with a distributed infrastructure for use by and benefit of its members
- By-laws modeled after the DataCite Consortium
- Membership required for organizations wanting to set up an Allocating Agent.
- Membership is NOT required to use IGSNs.

IGSN Metadata Levels

IGSN Registry

- IGSN
- ResourceURI
- Registrant ID
- timeStamp
- status

Global Metadata Store

- IGSN
- Registrant
- MetadataTimeStamp
- Title
- Description
- SamplingLocation
- SamplingTime
- Distributor
- Originator
- SpecimenType
- MaterialClass
- SamplingMethod

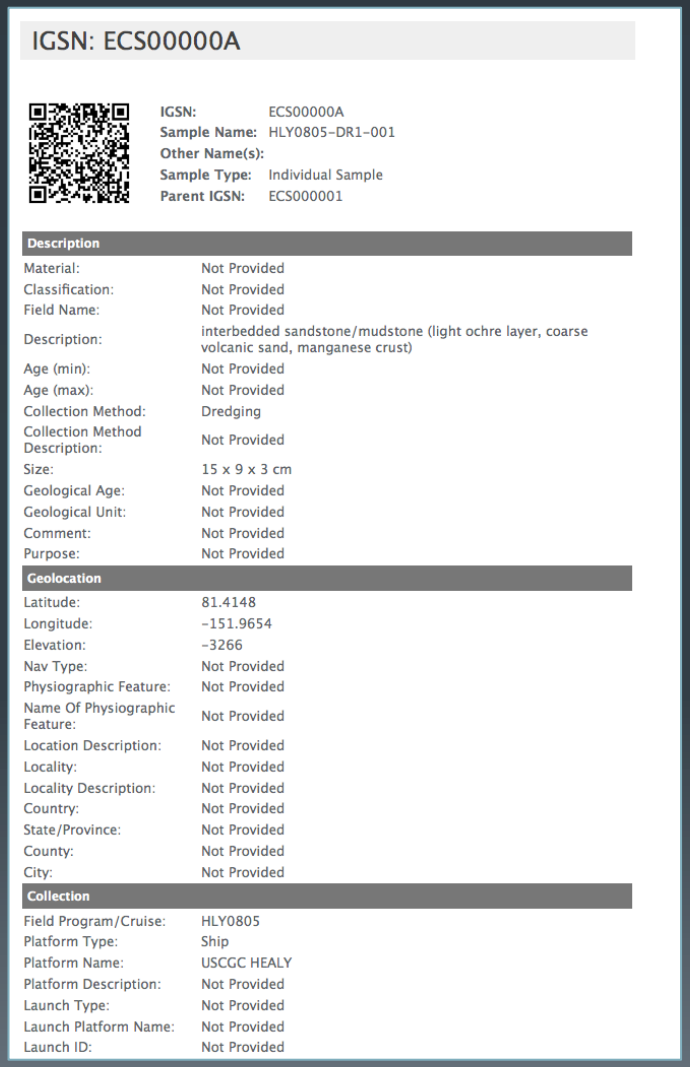
ISO & OGC O&M compliant

Allocating Agent Catalog

- IGSN
- SampleEvent
- SamplePhysicalSize
- RelatedResource
- SamplingMethodDetails
- ProcessingHistory
- CurationHistory
- More local detail…

Object Metadata

- Identification
  - Sample name(s), registrant
- Description
  - Material, classification, age, size, comments
- Geospatial information (if applicable)
  - Geographical names, coordinates
- Collection
  - Expedition/cruise, platform, date, collector, technique
- Archiving/access
  - Physical location of sample (repository), contact
- Relationship to other (sub-)samples



IGSN: ECS00000A

IGSN:	ECS00000A
Sample Name:	HLY0805-DR1-001
Other Name(s):	
Sample Type:	Individual Sample
Parent IGSN:	ECS000001

Description	
Material:	Not Provided
Classification:	Not Provided
Field Name:	Not Provided
Description:	interbedded sandstone/mudstone (light ochre layer, coarse volcanic sand, manganese crust)
Age (min):	Not Provided
Age (max):	Not Provided
Collection Method:	Dredging
Collection Method Description:	Not Provided
Size:	15 x 9 x 3 cm
Geological Age:	Not Provided
Geological Unit:	Not Provided
Comment:	Not Provided
Purpose:	Not Provided

Geolocation	
Latitude:	81.4148
Longitude:	-151.9654
Elevation:	-3266
Nav Type:	Not Provided
Physiographic Feature:	Not Provided
Name Of Physiographic Feature:	Not Provided
Location Description:	Not Provided
Locality:	Not Provided
Locality Description:	Not Provided
Country:	Not Provided
State/Province:	Not Provided
County:	Not Provided
City:	Not Provided

Collection	
Field Program/Cruise:	HLY0805
Platform Type:	Ship
Platform Name:	USCGC HEALY
Platform Description:	Not Provided
Launch Type:	Not Provided
Launch Platform Name:	Not Provided
Launch ID:	Not Provided

Sample Geneology

Related Samples

Parents: ODP000230 Hole 3-22*

Siblings:
- ODP000231 Core 3-22*-1R
- ODP000232 Core 3-22*-2R
- ODP000233 Core 3-22*-3R
- ODP000235 Core 3-22*-5R

Children:
- ODP0115YA Section 3-22*-4R-1
- ODP0115YE Section 3-22*-4R-2
- ODP0115YI Section 3-22*-4R-3
- ODP0115YM Section 3-22*-4R-4
- ODP0115YQ Section 3-22*-4R-5
- ODP0115YU Section 3-22*-4R-6
- ODP0115YY Section 3-22*-4R-7

IGSN: ODP000234

IGSN:	ODP000234
Sample Name:	Core 3-22*-4R
Other Name(s):	
Sample Type:	Core
Parent IGSN:	ODP000230

IGSN Applications

- Sample management
  - Preservation and access of sample metadata
  - Tracking samples (QR code labels)
  - Tracking subsamples
  - Transfer of metadata to new owners
- Data Management
  - Unambiguously cite samples.
  - Find & access data in distributed systems (interoperability)
  - Link data, samples, and publications

Linking Samples, Data, & Publications

Geochimica et Cosmochimica Acta
Volume 122, 1 December 2013, Pages 101–126

Climate dependence of feldspar weathering in shale soils along a latitudinal gradient

Ashlee L. Dere[a], Timothy S. White[a, b], Richard H. April[c], Brian Reynolds[d], Thomas E. Miller[e], Elizabeth P. Knapp[f], Larry D. McKay[g], Susan L. Brantley[a, b]

Show more

http://dx.doi.org/10.1016/j.gca.2013.08.001

IGSN: SSH000STR

IGSN:	SSH000STR
Sample Name:	ald-10-01
Other Name(s):	
Sample Type:	Individual Sample
Parent IGSN:	Not Provided

Description	
Material:	Rock
Classification:	Not Provided
Field Name:	shale
Description:	rock outcrop sample
Age (min):	Not Provided
Age (max):	Not Provided
Collection Method:	rock hammer
Collection Method Description:	Not Provided
Size:	Not Provided
Geological Age:	Not Provided
Geological Unit:	Not Provided
Comment:	Not Provided
Purpose:	CZO Shale Transect
Geolocation	
Latitude:	52.470683
Longitude:	-3.69255
Elevation:	323.088
Nav Type:	Not Provided
Physiographic Feature:	stream bed
Name Of Physiographic Feature:	Not Provided
Location Description:	Plynlimon forest, Wales, shale Severn stream bed
Locality:	Not Provided
Locality Description:	Not Provided
Country:	United Kingdom
State/Province:	Wales
County:	Not Provided
City:	Not Provided
Collection	

Table 2.

Major elemental chemistry of shale collected across the transect and corresponding depth of sample (d) where applicable. All rock samples were collected at local outcrops with the exception of PlynQ-RF and ALD-10-158, which were recovered from the bottom of soil pits [illegible] is a weathered shale chip recovered from the bottom of the augered core.

Site	Sample name	IGSN[a]	d (m)	Al (%)	Ca (%)	Fe (%)	K (%)	Mg (%)	Mn (%)	Na (%)	P (%)	Si (%)	Ti (%)	Zr (ppm)
Wales	PlynQ-RF	SSH[illegible]GG	0.35	12.0	0.04	6.77	3.15	1.41	0.43	0.57	0.04	25.1	0.82	164
	ALD-10-01	SSH000STR	-	11.8	0.03	6.40	2.96	1.36	0.33	0.68	0.04	26.3	0.82	154
	ALD-10-02	SSH000STS	-	11.0	0.01	5.77	2.88	1.23	0.21	0.61	0.04	27.1	0.71	137
	ALD-10-03	SSH000STT	-	11.8	0.01	6.73	2.87	1.47	0.23	0.62	0.05	24.4	0.90	175
	ALD-10-04	SSH000STU	-	11.6	0.05	6.45	2.66	1.63	0.13	0.77	0.06	25.9	0.83	215
	ALD-10-06	SSH000STW	-	11.9	0.05	6.17	2.91	1.53	0.21	0.76	0.06	24.8	0.85	186
	ALD-10-07	SSH000STX	-	11.7	0.01	6.45	2.93	1.33	0.29	0.62	0.05	24.3	0.90	210
	ALD-10-08	SSH000STY	-	11.9	0.02	6.82	2.94	1.50	0.62	0.62	0.06	24.9	0.89	185
	ALD-10-09	SSH000STZ	-	11.2	0.07	6.51	2.77	1.41	0.27	0.64	0.06	24.1	0.84	167
	ALD-10-33	SSH000SU0	-	11.7	0.04	6.32	2.97	1.41	0.21	0.64	0.06	24.1	0.85	165

A Vision for the Future

Earth and Planetary Science Letters
Volume 233, Issues 3–4, 15 May 2005, Pages 391–409

Grand Comore Island: A well-constrained "low $^3He/^4He$" mantle plume

Cornelia Class[a], Steven L. Goldstein[a, c], Martin Stute[a, d], Mark D. Kurz[b], Peter Schlosser[a, c]

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[b] Woods Hole Oceanographic Institution, 360 Woods Hole Road, MS25, Woods Hole, MA 02543, USA
[c] Department of Earth and Environmental Sciences, Columbia University, Palisades, N.Y. 10964, USA
[d] Department of Environmental Sciences, Barnard College, New York, NY 10027, USA

Received 9 September 2004. Revised 28 January 2005. Accepted 16 February 2005. Available online 8 April 2005. Editor: K. Farley.

http://dx.doi.org/10.1016/j.epsl.2005.02.029, How to Cite or Link Using DOI
Cited by in Scopus (5)
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Abstract

We report He isotope ($^3He/^4He$) variations in samples from alkali basaltic and basanitic lava flows from Grande Comore Island complemented by existing [1] and [2] [C. Class, S.L. Goldstein, Plume–lithosphere interactions in the ocean basins: constraints from the source mineralogy. Earth Planet. Sci. Lett., 150 (1997) 245–260, C. Class, S.L. Goldstein, R. Altherr, P. Bachèchlery, The process of plume–lithosphere interaction in the ocean basins—the case of Grande Comore. J. Petrol., 39 (5) (1998) 881–903] and new

Earth and Planetary Science Letters
- Plume-lithosphere interactions in the ocean ... *Earth and Planetary Science Letters*
- Noble gas systematics in basalts and a dunit... *Chemical Geology: Isotope Geoscience section*
- Ra–Th–Sr isotope systematics in Grande C... *Earth and Planetary Science Letters*
- U–Th–Pa–Ra systematics for the Grande ... *Earth and Planetary Science Letters*

View more related articles

System for Earth Sample Registration
10 samples found

HRV0035F6	this article	other articles
GMA089HB	this article	other articles
ECS000675	this article	other articles

Find all data for this sample in the entire literature

...cles
...edias
...vection and Plumes
Encyclopedia of Physical Science and Technol...
More related reference work articles

earthchem
15 extracted samples

IGSN

geosamples.org: Tools for Users

MySESAR

Back to SESAR Home | My Home | My Samples | My Groups | Sample Registration | Transfer Ownership | Search | My Profile | Logout

My Home

Welcome, Kerstin Annette Lehnert

REGISTRATION

> Register an individual sample
> Download batch registration template
> Upload my batch samples

SAMPLES

> Search sample catalog
> View/Edit my samples
> View/Edit my groups

MY ACCOUNT

> Edit my Profile
> Transfer my samples to another user
> Pending transfer requests

Pending Batch Registrations

There is a total of 0 batch registration(s) awaiting processing

Registered Samples Summary

You have a total of 2 registered samples in SESAR.

1 Grab

1 IndividualSample

SESAR
Metadata Template Creator

IGSN

MySESAR

Back to SESAR Home | My Home | My Samples | My Groups | **Sample Registration** | Transfer Ownership | Search | My Profile | Lo

Batch Sample Registration Template Creator

Basic Information (required to proceed)

Select Type of Object
Individual Sample

Are these samples for public or private viewing?
- (•) Public
- ( ) Private

Date these samples should be available in searches
February 18, 2014

Submit to create template

This tool will provide you with a customized Excel template that contains the metadata fields you want to submit about your samples.

*** All samples per batch must be of the same object type ***

Start by filling out the basic information about the samples you will be registering. Metadata fields appropriate for the selected object type will appear. Check all the metadata fields you will be providing. Mouseover the metadata field for an explanation and/or example.

Description

- [x] Material
- [x] Field name (informal classification)
- [x] Classification
- [ ] Sample description

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Object Type:	Dredge	All Public:	yes	Searchable date:	January 16, 2014							
2	Sample Name	IGSN	Parent IGSN	Material	Field name (informal classification)	Classification	Collection method	Purpose	Latitude	Latitude (end)	Longitude	Longitude (end)	Elevation start (in meters)
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													

SESAR Batch Registration Quick Guide

Last modified 21 March 2013. Please use this guide to help you fill out the SESAR Batch Registration Template. For more assistance contact info@geosamples.org.

Note: Controlled and suggested vocabulary lists are available at http://www.geosamples.org/help/vocabularies

Column name	Example	Definition	Additional instructions
Description			
Sample Name	TR-POW	Collector's sample name. Mandatory.	
IGSN	RIV00000F	Leave blank if you want SESAR to assign the IGSN.	
Parent IGSN	RIV00000F	Leave blank if a parent IGSN does not exist.	
Material	Rock; Liquid>Aqueous	material that the sample consists of	Please use controlled list
Classification	Igneous>Plutonic>Felsic; Plagioclase	Taxonomy (formal classification) Formal categorization of sample	Please use controlled list (for Rocks) Please use controlled list (for Minerals)
Field Name	basalt; amphibole; sea water	Taxonomy (field name) Informal classification of sample	
Sample Description	dredge with 50 pieces of basalt and mud	Free text to describe features of a sample such as its components, texture, color, shape, etc	
Age (min)	4.2	Numerical value for the minimum age of a sample	Must be a number
Age (max)	4.6	Numerical value for the maximum age of a sample	Must be a number
Age unit	Ma	Unit for the age provided	
Geological age	Cretaceous	Age of a sample as described by the stratigraphic era, period, state, etc.	
Geological unit	Coconino Sandstone; Fig Tree Formation	A body of rock established as a distinct entity in the classification of the Earth's rocks, e.g. Supergroup, Group, Formation, or Flow	
Collection method	Dredging; Manual	Method by which a sample was collected	Suggested list
Collection method description	Hand sample collected from the top part of a large boulder	Additional information about the collection method	
Size	2x4; 45	Size of the registered object, such as the dimension of a specimen, the length of a core, or the weight of a dredge	
Size unit	cm; kg	Unit for the numerical value provided for 'size'.	
Geolocation			
Latitude	5.89634	Latitude of the location where the sample was collected. ('Start latitude' for linear sampling features such as dredges.) Needs to be entered in decimal degrees. Negative values for South latitudes.	Please supply no more than 6 decimal places (meter scale resolution) in the actual number (not just display format.) No letters are allowed.

Mobile App for Sample Registration

GeoSamples Entry

Add a record

Geopass User name*:

Your username for the geopass system

Geopass Password*:

Your geopass password

Remember me

Geopass User Code*:

Three letter namespace for your IGSNs

Remember Geopass User Code

Sample type*:

Individual Sample

Sample Name*:

(name given by investigator e.g. "CoreA")

New IGSN:

(If left blank, SESAR will assign an IGSN)

Parent IGSN:

(IGSN for the parent to this sample)

Grouping Samples

Group Types:

- Award
- Project/lab group
- Loan
- Field program

MySESAR

Back to SESAR Home | My Home | My Samples | My Groups | Sample Registration | Transfer Owne | ut

My Groups

This is beta version. Please give us your feedback to improve its functionality.

View/Edit Group | Create Group | Add Sample(s) To Group | Delete Sample(s) From Group

Enter New Group Information Below

Group Name: Maximum 100 Characters — Examples: 2013 April Death Valley Trip; Smith 2012 EPSL Paper; Brown Lab Sample analysis from KNORR 210-05

Group Description: Maximum 1000 Characters.

Group Type: Award

Group sharable: (•) Private ( ) Public

Create a New Group

Transfer Ownership of Metadata

MySESAR

Back to SESAR Home | My Home | My Samples | My Groups | Sample Registration | **Transfer Ownership** | Search | My Profile | Logout

Transfer Sample Ownership

You can transfer any samples registered to you to another SESAR user.
Simply indicate the sample(s) you want to transfer and the requested owner.

Note: All requested transfers must be approved by the recipient before the sample(s) are transferred. The SESAR administrator will be the temporary owner until the recipient has accepted or declined the request.

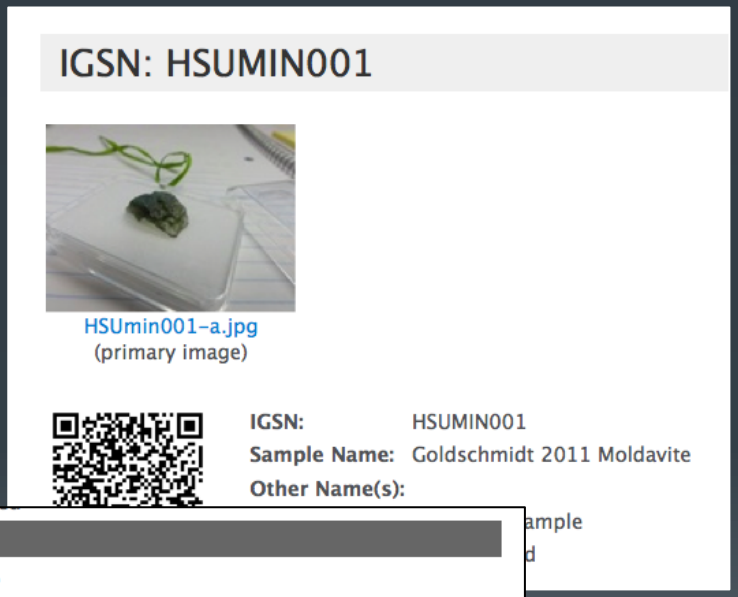
- ○ Transfer all samples owned by me
- ○ Transfer all samples with IGSN starting with: -- select --
- ○ Transfer samples with the following IGSNs (comma delimited list of IGSNs):

Transfer samples to (email address of requested owner):

submit

Extended IGSN Metadata

- Images
- Documents (.pdf, .xls, .doc)
- References
- URLs for related data resources
- User defined metadata



Label Printing

Customize label fields

Please select three fields which will be printed in the label (Ctrl-Click on PC; Cmd-Click on Mac).

- Sample Name
- Sample Type
- Other Name
- Sample Size
- Depth in Hole/Core (min)

IGSN: XXXXXXXXX
Name: My Sample Name
Type: My Sample Type
AKA: My Sample Other Names

Update Fields | Save to PDF File | **Note:** See label printing document at this link.

Your Sample Labels

IGSN: HSU000006
Name: VM1
Type: Individual Sample
AKA: Not Provided

IGSN: HSU000007
Name: VM2
Type: Individual Sample
AKA: Not Provided

IGSN: HSU000008
Name: testv4.2
Type: Individual Sample
AKA: Not Provided

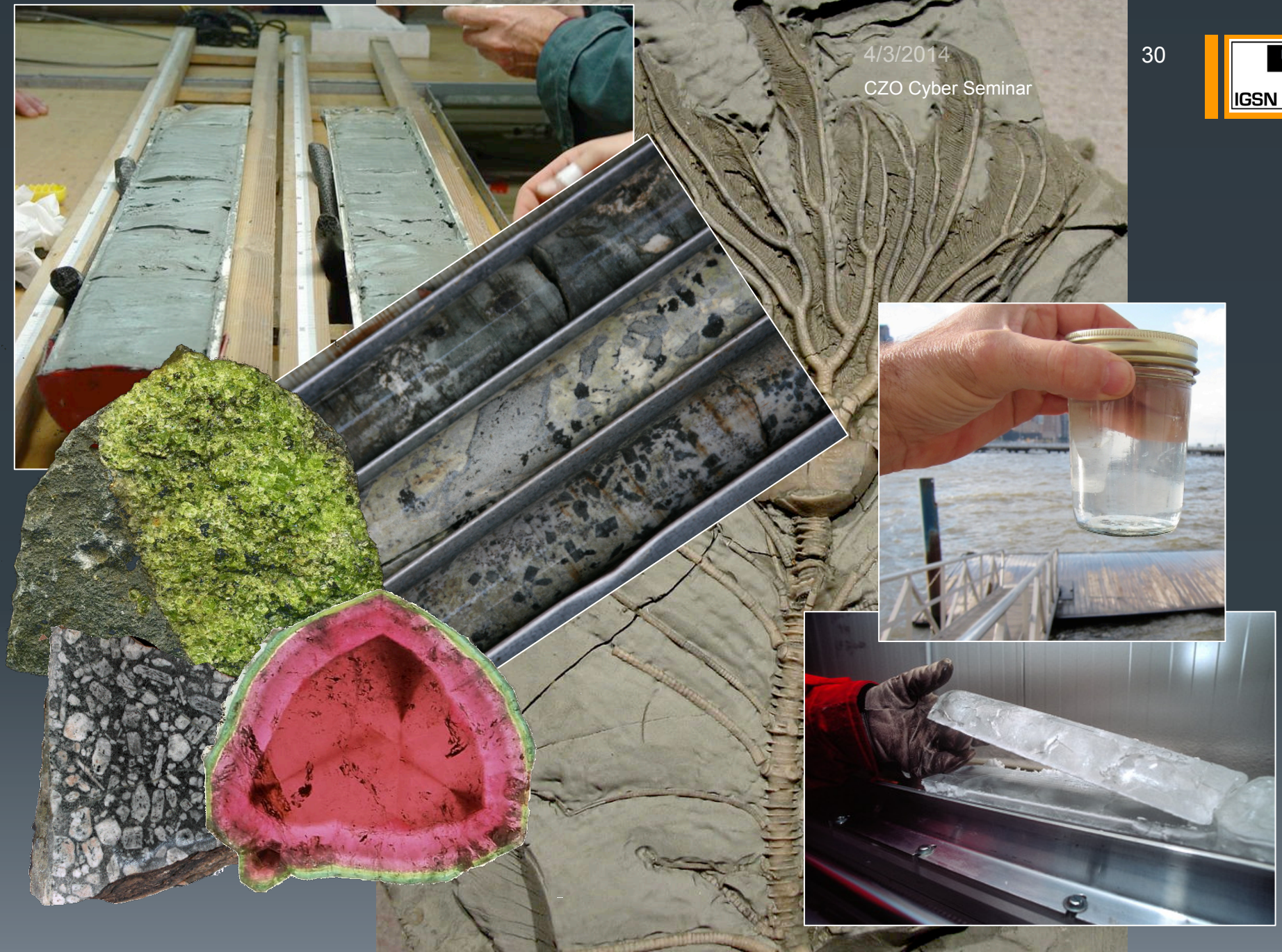
IGSN: HSU000009
Name: testv4.2b
Type: Individual Sample
AKA: Not Provided

IGSN: HSU00000A
Name: A
Type: Individual Sample
AKA: Not Provided

IGSN: HSU00000B
Name: B
Type: Individual Sample
AKA: Not Provided

Participate!

- As an IGSN user
  - Get a user account at www.geosamples.org
  - Register your samples
  - Use the IGSN in the lab (sample labels) and in your publications
- As an IGSN Allocating Agent
  - Become a member of the IGSN e.V.
  - Establish
- As a member of the GEOSAMPLES community
  - Join the EarthCube Special Interest Group on Physical Samples
  - Stay tuned for the EarthCube RCN proposal GEOSAMPLES



IGSN

Building a Geosamples Community

SESAR Help

SESAR Help

Help Pages

- FAQ - some frequently asked questions
- User-submitted questions and answers - from the IGSN Webinar 3/27/2013
- Sample Registration - step by step instructions for individual or batch registration
- Vocabularies - list of vocabularies, controlled and suggested, used in SESAR
- Label printing in SESAR
- More documents and presentations about SESAR and IGSN

Quick Guide

- SESAR Quick Guide: definitions and examples for filling out metadata (.xls)

Tutorial

- How to download and complete a batch registration template [pdf]
- How to upload a completed batch registration template [pdf]

To suggest more topics for the Help page, please contact info@geosamples.org.

IGSN

Linking DOI & IGSN

12	RelatedIdentifier	Identifiers of related resources.		0-n	The format is open. *** Use this property to indicate subsets of properties, as appropriate.
12.1	relatedIdentifierType	The type of the RelatedIdentifier.	A	Req	*Controlled List* Allowed values: ARK DOI EAN13 EISSN Handle ISBN ISSN ISTC LISSN LSID PURL UPC URL URN

+ IGSN

DataCite Metadata Schema
for the Publication and Citation of
Research Data

Version 2.2

July 2011

doi:10.5438/0005

geosamples.org

- A broad community initiative to advance access and re-use of physical samples
  - advance best practices, standards, & policies for sample curation, distribution, attribution, and citation
  - build a “Digital Environment for Sample Curation” (DESC)
    - to support and simplify the work of curators
    - to create the Internet of Samples
- Cross-disciplinary coordination (BIO, archeology, etc.)
- International coordination

IGSN

Motivation for a Shared Sample CI

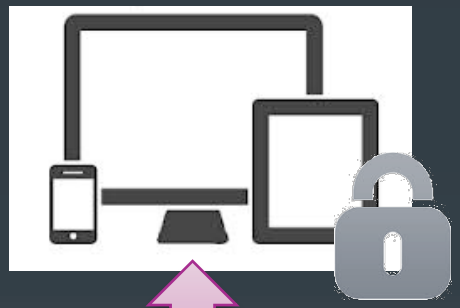
- Urgent need of repositories to efficiently manage and improve access to their collections.
  - Many collections still operate with non-digital procedures (spreadsheets, analog records) of samples and loans.
  - Smaller repositories and collections often lack the resources (staff, funding) and infrastructure (hardware, software, IT support) for digital collection management and web presence
  - A shared, jointly governed system is efficient and will help to standardize practices

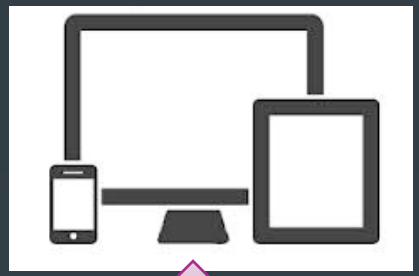
DESC User Interfaces

Curators (Admin GUI)

Samplers (User GUI)

Public (Admin GUI)

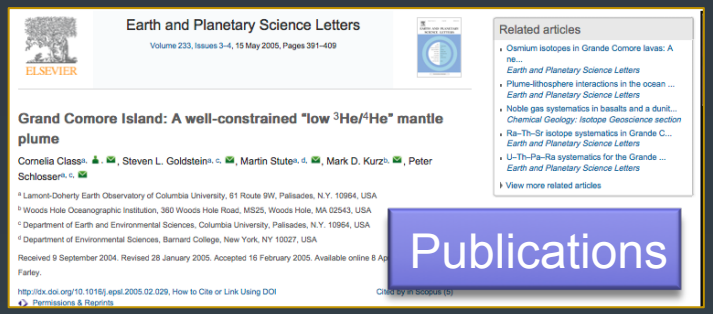


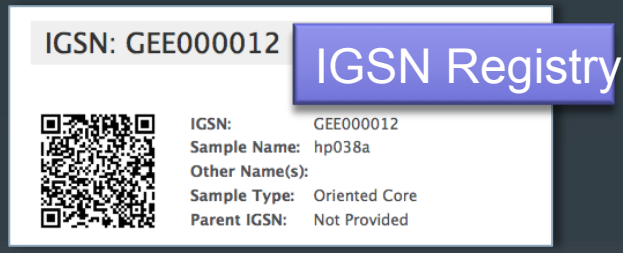


DESC data & tools

DESC: Interoperability

Visualization





Data Systems

NOAA NATIONAL GEOPHYSICAL DATA CENTER
Index to Marine & Lacustrine Geological Samples
Access to rock and sediment cores, dredges, and grabs from the sea floor and lakebeds

EarthChem

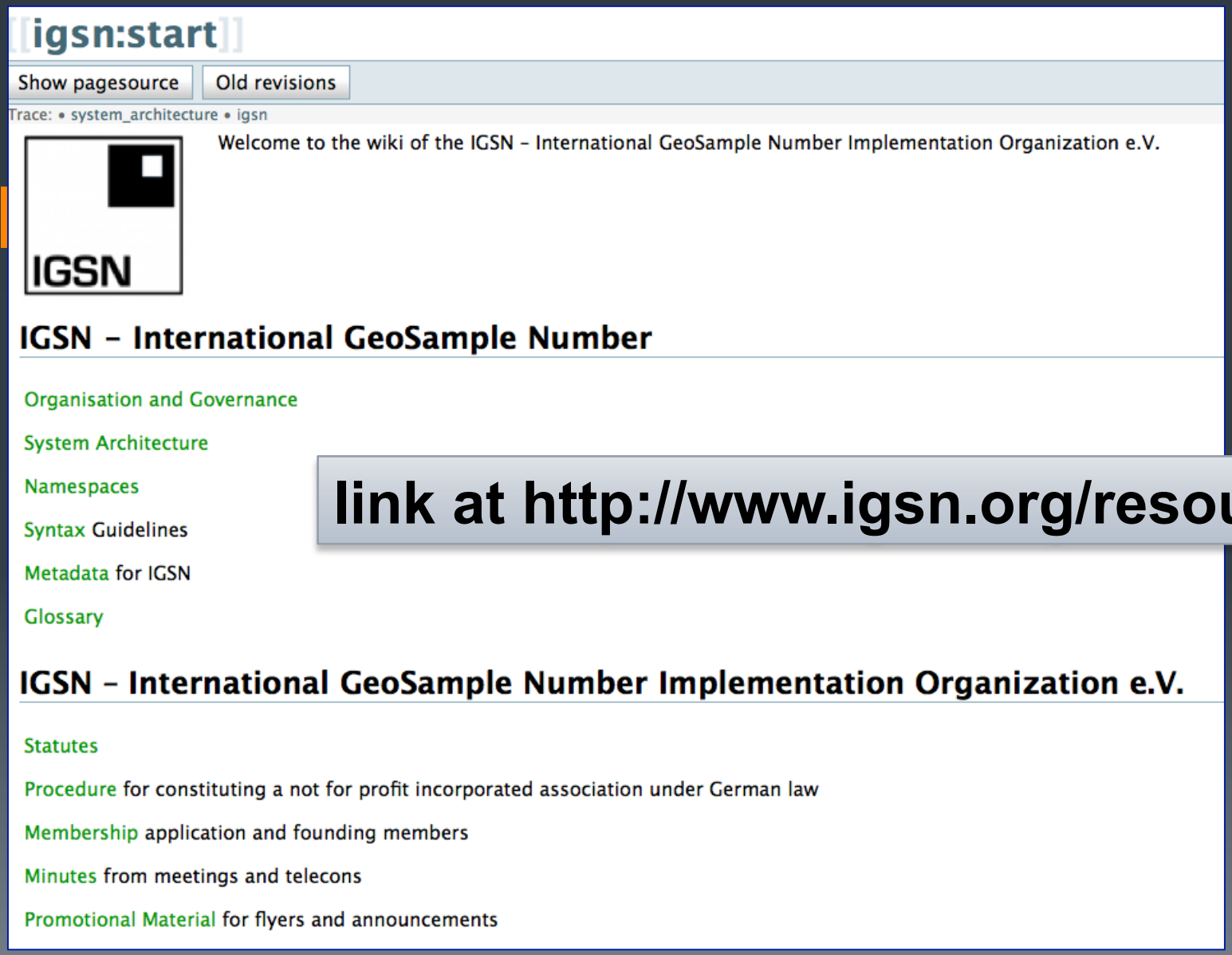
mindat.org

USGIN
United States Geoscience Information Network

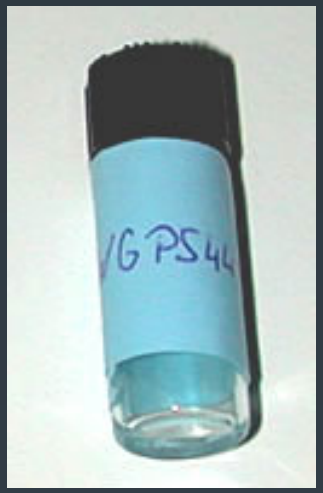
DESC data

The Benefits of the IGSNs

- Ensures unambiguous citation of samples.
- Facilitates interoperability and linking at the level of individual samples.
- Builds central and federated sample metadata catalog
- Helps to implement best practices for sample documentation and citation.
- Assists users with sample and collection management



link at http://www.igsn.org/resources



Have you ever found a sample in your drawer or lab that has a label, but you couldn't remember any other information about it or know where to find that information?

Obstacles

- Sample names are not unique.
- Sample names get changed.
- Sample metadata in publications are often incomplete.
- Physical samples get disconnected from the metadata (loss of field notes, etc.)
- Lack of sustained sample repositories
- Lack of central or federated sample catalogs

- Arizona State Geological Survey, USA
- Boise State University, USA
- City College of New York, USA
- Helmholtz Centre for Ocean Research Kiel (GEOMAR), Germany
- GeoForschungsZentrum Potsdam/ICDP, Germany
- Lamont-Doherty Earth Observatory, Columbia University, USA
- Oregon State University, USA
- Scripps Institution of Oceanography / UC San Diego, USA
- University of Minnesota, USA (LacCore)

New members 2013

- **MARUM (University of Bremen, Germany)**
- **CSIRO, Australia**
- **Rensselaer Polytechnic Institute, USA**
- **Woods Hole Oceanographic Institution, USA**

www.igsn.org

HOME MEMB

IGSN e.V.

The IGSN e.V. is the Implementing Organization of the International Geo Sample Number IGSN, a unique identifier for samples and specimens collected from our natural environment.

The objective of the IGSN e.V. is to implement and promote standard methods to locate, identify, and cite physical samples with confidence by operating an international IGSN registration service with a distributed infrastructure for use by and benefit to its members.

Members of the IGSN e.V. at the founding event in December 2011.

Get Involved

Join the mailing list, group@igsn.org, a working group for anyone interested discussing technical and implementation issues related to the IGSN.

Follow @igsn_info 25 followers

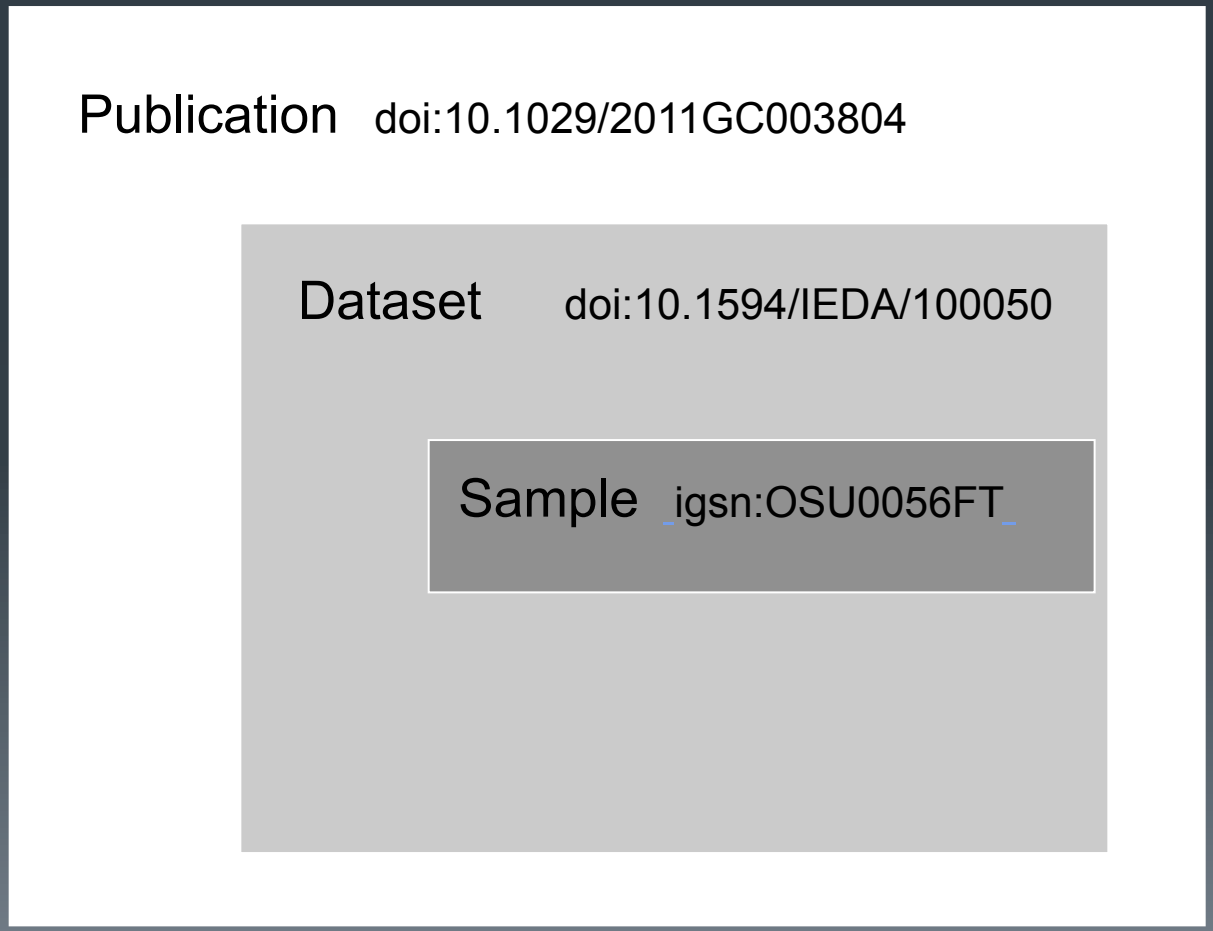
Recent News

Welcome to new IGSN e.V. members
Dec 2013. Welcome to the four new signing members to the IGSN e.V. during 2013:

Next IGSN eV General Assembly at AGU FM 2013
Nov 2013. The next General Assembly of the IGSN eV will take place on Monday, December 9, 23013, 7:00-8:00 AM, in the Westin...

Call for Membership Applications to the IGSN Implementation Organization

Linking Data, Samples, & Publications



Geosamples www.geosamples.org

- Software tools for users to submit and manage their sample metadata and obtain IGSNs
  - online user interfaces to enter or upload metadata (MySESAR)
  - mobile app for field-based capture of sample metadata
  - web services for client-based sample registration and catalog access
- Persistent access and preservation of sample metadata (SESAR)
- Extended metadata (images, documents)
- Links to data, publications, funding awards
- User training & support
- Operated as part of the IEDA Data Facility (www.iedadata.org)