

EGU 2020, Session ESSI3.6

The mobile Drilling Information System (mDIS) for core repositories

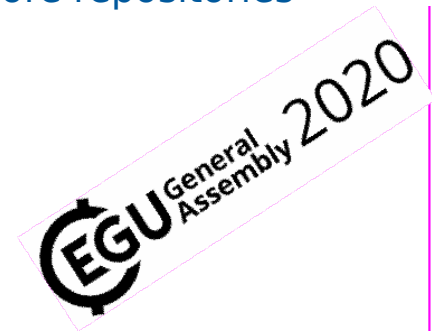
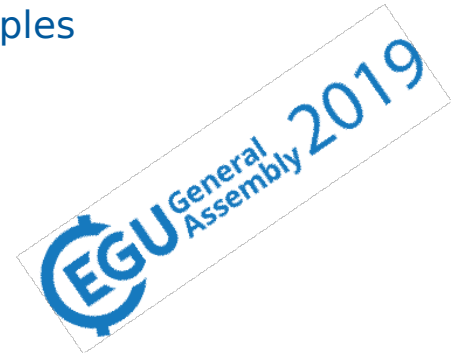
Knut Behrends, Katja Heeschen, Cindy Kunkel, and Ronald Conze

Deutsches GeoForschungsZentrum GFZ
Geomechanics and Scientific Drilling
Potsdam, Germany



MDIS - the mobile Drilling Information System

- Expedition mDIS:
 - Software for geoscientists and engineers acquiring physical samples
 - Assists with data entry during field work
 - In use: weeks-months - or years, with intermissions
 - Assigns **IGSN Persistent Identifiers** to:
 - Drill Holes, Drill Cores, Sections, Samples
- Curation mDIS:
 - Extended version of expedition mDIS
 - Software for scientists/curators in charge of managing sample or core repositories
 - Evolves from earlier DIS or data imported from Expedition mDIS
 - In use: years-decades
 - Assigns **IGSN Persistent Identifiers** to:
 - Drill Holes, Drill Cores, Sections, Split Sections, Samples



mDIS Dashboard - black color scheme, suitable for dimmed data-entry environments

Dashboard

QR CODE SCANNER

edit mode

mDIS - The mobile Drilling Information System

Basic version



mDIS - Template

This is an empty mDIS version containing only a few essential data-entry forms. It serves as the foundation for any new project and can be customized according to the special needs of project participants.

The email address of the data management group:
dm_icdp@gfz-potsdam.de

Cindy Kunkel
Katja Heeschen
Knut Behrends

Instructions

More Information

- User Help
- Data Description

1.3.4-76-g58ad9d5 (2020-04-30)

Completely customizable layout and content

MessageOfTheDay

To add a new message of the day, choose "File Form/Upload" in the sidebar, upload a photo, assign it a Date and a File Type, e.g. "UN - undefined" for a fun picture. Then, in "New Message", use the text fields below to select that picture.

LAST MESSAGE NEW MESSAGE

No messages were written yet. Use the form to create a new one

QuickPost Box

Post short notes here

Post Text

administrator 01-May-2020 20:16

mDIS Data Entry Page – white color scheme, suitable for bright environments

34.76.214.94/#/forms/core-form/317?filter=expedition~2,site~59,hole~232

icdp mdis mdis-GRIND

Dashboard / Forms / core

QR CODE SCANNER

expedition GRIND site 1 hole A

Filter by values EDIT FILTER scanner

Current record

Core Details

Core	Combined Id	*Curator	*Core on Deck (CoD)	*Top Depth (m)	*Drilled Core Length (m)
62	5064_1_A_62		2019-09-26 18:57	137.65	3.1
*Bottom Depth (m)	*CC	*Section Count	Core Recovery (m)	Core Recovery (%)	Core Loss Reason
140.75	no	4	3	96.77419354838727	
Continuity					

Additional Core Information

*Core Type	Core Diameter (mm)	Core Oriented?	MCD Offset	mcd Length	RQD Abundance
Z	62	no	0		
RQD Intensity	Temperature (degrees C)	Additional Information			

International Geo Sample Number

IGSN

ICDP5064ECN1101

Additional Driller's Information

Driller's Top Depth (m)	Barrel Length (m)	Bit Type	Drilling Fluid Type	Additional Information

EDIT + NEW SMART COPY DELETE

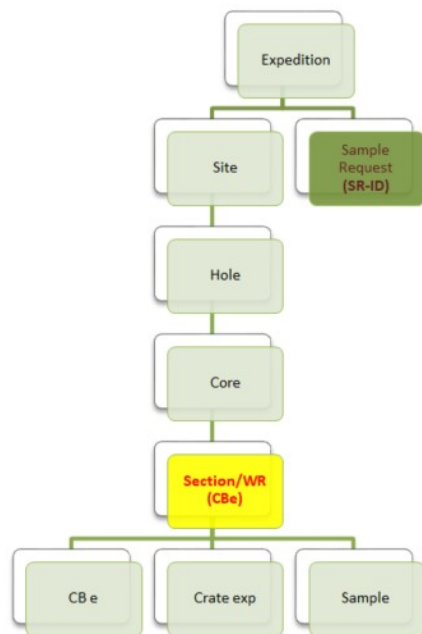
SECTION DOWN HOLE UP SHOW FILES (0) UPLOAD FILES

POTSDAM

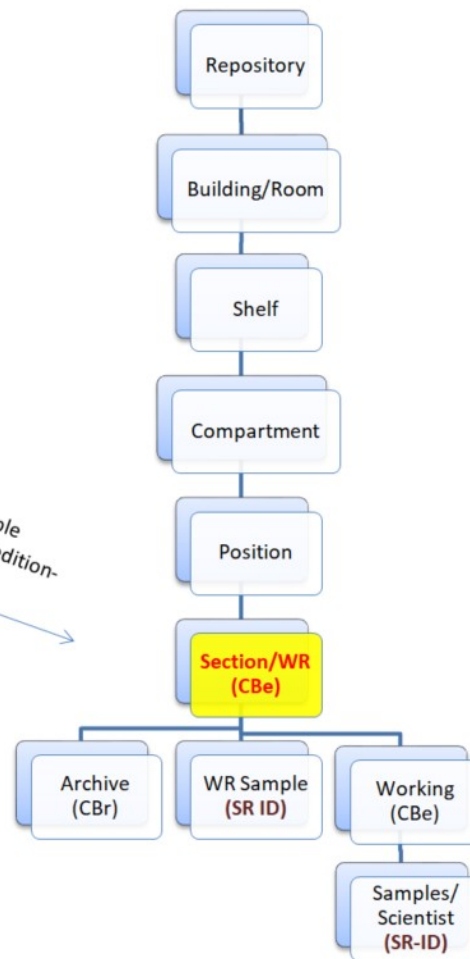
IGSN text field – value assigned when data entry is saved

Curation mDIS instances 1: Adaptable to different requirements

Expedition mDIS incl. sample request



Warehouse management



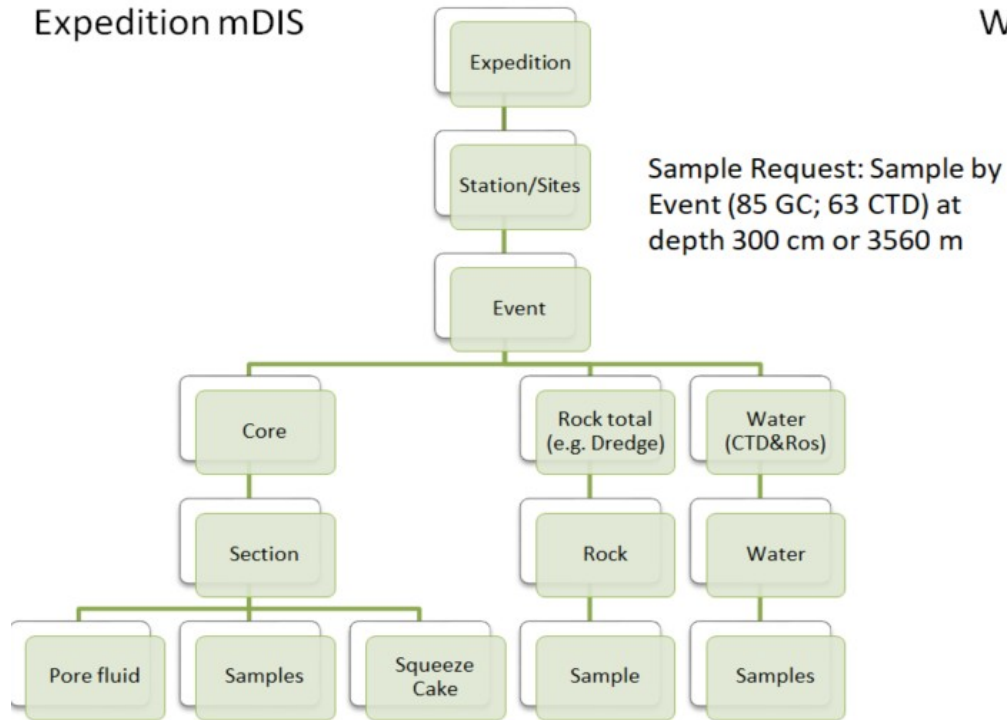
Search function for sample request: list all using expedition-site-hole

Simplified database scheme (draft)

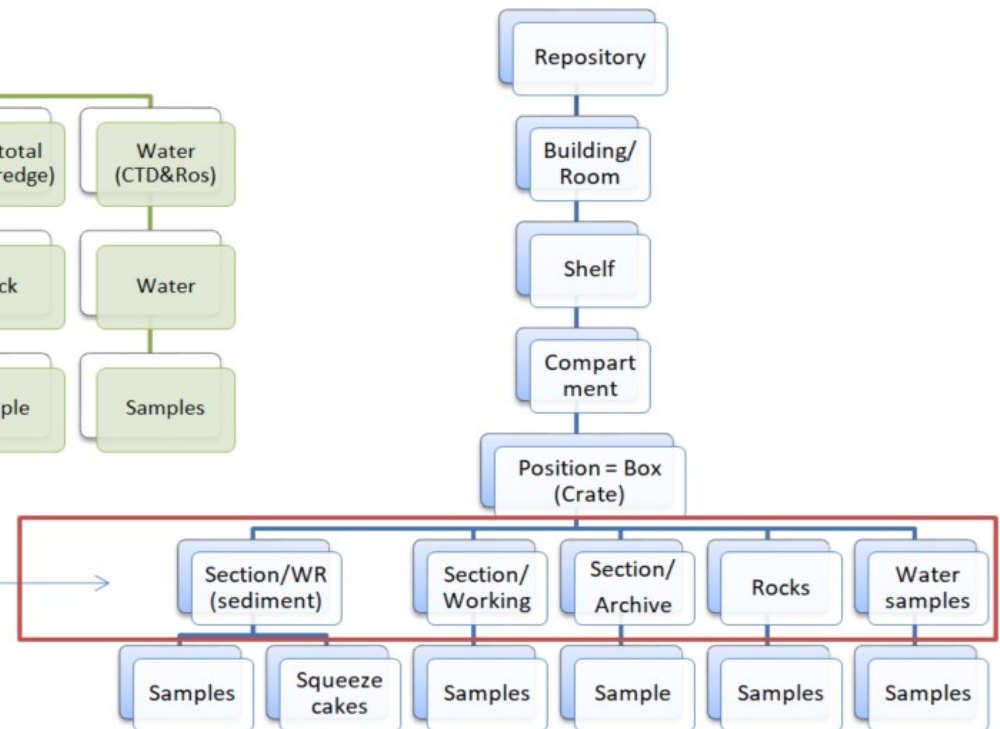
CB = Core Box;
Section/WR in CB e(expedition);
Archive in CB r(epository)

Curation mDIS instances 2: Adaptable to different requirements

Expedition mDIS



Warehouse management



Show all and filter looking for Expedition-Station-Event
(Station ID: SO274-85 MUC)

Simplified database scheme (draft)

Corona-Crisis Constraints

- Presentation: Under usual circumstances we would present mDIS in the EGU vendor exhibition area. At the ICDP/IODP booth we normally run live-demos and make mDIS available for interactive use (see you at EGU2021)
- Iterative Release, deployment to Beta-customer (repository curator) planned for Q3 / 2020
- If you would like us to walk you through a test version or want to test mDIS yourself (work in progress) please contact :

dm_icdp@gfz-potsdam.de

mDIS Websites

Web-based versions of mDIS can be accessed at the locations shown in the table below.

Sign-in is required.

Purpose	Instance Name	Content	Address
ICDP internal — Curation DIS	mdis-internal	testing data	34.77.212.47
ICDP GRIND Project Exped. DIS	mdis-grind	Real World Data, expedition	34.76.214.94
ICDP JET Project Exped. DIS	mdis-jet	testing data	34.76.124.51

More
Information

Software Sponsor



INTERNATIONAL
CONTINENTAL SCIENTIFIC
DRILLING PROGRAM

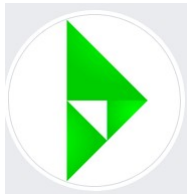
ICDP – International Continental Scientific Drilling Program

Helmholtz Centre Potsdam - GFZ German Research Centre for Geosciences

Scientific Drilling (Operational Support Group ICDP)

<https://www.icdp-online.org>

Contractor



die InformationsGesellschaft mbH - Agentur für Design und Software

Digitale Informationssysteme und Kommunikationsdesign

Bornstraße 12-13, D-28195 Bremen / Germany

<https://www.informationsgesellschaft.com>

EGU Session, Presentation Authors

Session EGU2020-13663

- Best Practices and Realities of Research Data Repositories
- Conveners: Kirsten Elger | Co-conveners: Helen Graves, Florian Haslinger
- EGU General Assembly 2020

Authors

- Knut Behrends, Katja Heeschen, Cindy Kunkel, and Ronald Conze
- dm_icdp@gfz-potsdam.de

Affiliation

- Deutsches GeoForschungsZentrum GFZ, Telegrafenberg, 14473 Potsdam, Germany
- Section 4.2, Geomechanics and Scientific Drilling, Potsdam, Germany

<https://doi.org/10.5194/egusphere-egu2020-13663>

© Authors 2020. This work is distributed under the Creative Commons Attribution 4.0 License.

The Abstract

The mobile Drilling Information System (mDIS) for core repositories

Knut Behrends, Katja Heeschen, Cindy Kunkel, and Ronald Conze

<https://doi.org/10.5194/egusphere-egu2020-13663>

Deutsches GeoForschungsZentrum GFZ, Geomechanics and Scientific Drilling, Potsdam, Germany (knb@gfz-potsdam.de)

The Drilling Information System (DIS) is a data entry system for field data, laboratory data and sampling data. The International Continental Scientific Drilling Program (ICDP) provides the system to facilitate data management of drilling projects during field work and afterwards. Previously, a legacy DIS client-server application was developed in 1998, and has been refined over the years. The most recent version was released in 2010. However, legacy DIS was locked-in to very specific versions of the Windows- and Office platforms that are non-free, and, more importantly, are no longer supported by Microsoft.

Therefore we have developed a new version of the DIS called the mobile DIS, or mDIS. It is entirely based on open-source components and is platform-independent. We have introduced a basic (beta) version of mDIS at EGU 2019. That version was designed for fieldwork. At EGU 2020 we present an extended version designed for core repositories.

The basic or expedition mDIS manages basic datasets gained during the field work of a drilling project. These datasets comprise initial measurements of the recovered rock samples, such as core logs, special on-site sample requests, and drilling engineering data. It supports label-printing including QR codes, and the automatic assignment of unique International Geo Sample Numbers (IGSN). The data are available online for all project scientists on site as well as offsite.

The curation mDIS, however, satisfies additional requirements of core repositories, which store drill cores for the long term. Additional challenges for the mDIS that occur during long-term sample curation include: (a) the import of large datasets from the expedition mDIS, (b) complex inventory management requirements for physical storage locations, such as shelves, racks, or even buildings, used by the repositories, (c) mass printing of custom labels and custom reports, (d) managing researchers' sample requests, sample curation and sample distribution, (e) providing access to science data according to FAIR principles.