The mobile Drilling Information System (mDIS) for core repositories

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

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**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_iotp@gtb-potsdam.de

Cindy Kunkel
Ketja Heeschen
Kurt Behrends

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**Message Of The Day**

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.

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**QuickPost Box**

Post short notes here

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**Last Message**

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

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**Instructions**

More Information

- User Help
- Data Description

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Completely customizable layout and content
### Core Details

- **Core**: 62
- **Combined Id**: 5064_1_A_62
- **Curator**: 2019-09-26 18:57
- **Top Depth (m)**: 137.65
- **Drilled Core Length (m)**: 3.1

### Additional Core Information

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

### International Geo Sample Number

- **IGSN**: ICDP5064ECN1101

*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

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

- Expedition
  - Station/Sites
    - Event
      - Core
        - Section
          - Pore fluid
          - Samples
          - Squeeze Cake
      - Rock total (e.g. Dredge)
      - Water (CTD&Ros)
        - Sample
          - Samples
  - Water
    - Repository
      - Building/Room
      - Shelf
      - Compartment
        - Position = Box (Crate)

Sample Request: Sample by Event (85 GC; 63 CTD) at depth 300 cm or 3560 m

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.

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Instance Name</th>
<th>Content</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICDP internal</td>
<td>mdis-internal</td>
<td>testing data</td>
<td>34.77.212.47</td>
</tr>
<tr>
<td>Curation DIS</td>
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<td>Exped. DIS</td>
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</tr>
</tbody>
</table>
Software Sponsor

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
Session EGU2020-13663
- Best Practices and Realities of Research Data Repositories
- Conveners: Kirsten Elger | Co-conveners: Helen Glaves, Florian Haslinger
- EGU General Assembly 2020

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The Abstract

The mobile Drilling Information System (mDIS) for core repositories

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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.