



Research data management with BEXIS 2

An overview and introduction to the special session

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Intro

BEXIS 2 is:

- Data Management Platform (i.e. software)
- designed for **collaborative projects**
- focus on **active data** (i.e. project life-time)
- focus on **tabular data**, but not limited to
- focus on **data integration** and **re-use**
- generic, scalable, modular, **free** and open source

End-User Features

Search Data

Find datasets by keyword (incl. autocomplete) or use facets, filtering, sorting to quickly retrieve the dataset you need.

Upload Data

Upload your tabular data or any other type of data to BEXIS 2 and describe it with metadata.

Dataset Permissions

Specify fine grained data permissions on who can view, access, or update your dataset

Dataset Versioning

Keep track of the evolution of your dataset (i.e. who did what and when) and return to any previous version if needed.

Re-use Data Structures

Design your dataset by specifying its data structures, variables, or units only once in BEXIS 2 and re-use them for any dataset.

Single Sign-on

Use your existing credentials of your organisation to log on to BEXIS. No need to remember another username and password.

Web API Access

Beside downloading a dataset from the portal, you may also retrieve data stored in BEXIS directly with a script or from your application (e.g. R) using API calls.

Data Publication

Publish your dataset with a renown data repository or data journal (e.g. GFBio, Biodiversity Data Journal) and make it a citeable data publication identified by a DOI.

Data Structure Design & Re-use

The screenshot displays the BEXIS Data Structure Edit web application. The interface is divided into two main sections: Variable Templates on the left and Field Survey configuration on the right.

Variable Templates: A list of pre-defined templates is shown, each with an ID, Name, Unit, and Data Type. A search bar and a 'Sort by' dropdown (set to 'no Sorting') are at the top. A 'Create Variable Template' button is at the bottom.

| Id | Name | Unit | Data Type |
|-----|-----------------------------|----------------------------|-----------|
| 157 | amount of substance per mas | mole per kilogram | double |
| 158 | substance per area and time | mole per square meter ... | double |
| 156 | length per mass | meter per kilogram | double |
| 159 | substance per mass and time | mole per kilogram and s... | double |
| 160 | date Time | none | datetime |
| 161 | date Time as string | none | string |
| 126 | luminous intensity | candela | double |
| 127 | power | watt | double |
| 128 | energy | joule | double |

Field Survey, Jena Forest (June 2017) (10): This section allows for the configuration of a specific survey. It includes a 'Name' field (filled with 'Field Survey, Jena Forest (June 2017)'), a 'Description' field (filled with 'Data Structure Description'), and a list of fields to be collected. Each field has an ID, Name, Unit, Data Type, and an 'Optional' checkbox.

| Id | Name | Unit | Data Type | Optional |
|----|------------------|------|-----------|-------------------------------------|
| 59 | dateTime | none | datetime | <input checked="" type="checkbox"/> |
| 60 | no. of species A | none | double | <input checked="" type="checkbox"/> |
| 61 | no. of species B | none | double | <input checked="" type="checkbox"/> |
| 62 | no. of species C | none | double | <input checked="" type="checkbox"/> |
| 63 | remark | none | string | <input checked="" type="checkbox"/> |

Buttons at the bottom of the survey configuration include 'Download Excel Template', 'Delete', 'Save', 'Save as', and 'Cancel'.

Powered by



Web API Data Access

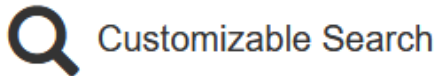
Sample REST API calls: Data

- <http://www.name.com/api/data/6>
 - /api/data/6?header=id,name
 - /api/data/6?filter=(Grade>50 AND Grade <90)
 - /api/data/6?header=id,name&filter=(Grade>50)

Sample REST API calls: Metadata

- <http://www.name.com/api/metadata/6>

Admin Features



Customizable Search

Interface

Customize the Search Interface, e.g. select the metadata elements to be indexed and shown, specify the facets, and determine the representation of search results.



Use Multiple Metadata

Schemas

Import multiple metadata schemas (XSD) relevant to your user community and map them to system types. For each schema a custom form will be generated by BEXIS 2.



Support for Multiple DBMS

Run BEXIS 2 on top of your preferred Data Base Management System. BEXIS 2 runs on PostgreSQL, IBM DB2, Microsoft SQL Server. Others can be implemented easily.



Notification Framework

BEXIS 2 comes with a notification framework to send out custom messages (e.g. via email) to users on specific actions.



System Feature Permission

Specify fine grained permissions on system features and tools for individual users or groups.



Extensible Architecture

BEXIS 2 follows a modular design and can be integrated with external applications and services or extended with custom modules



Party Package

Manage information about organizations, institutes, projects, people, (or any custom type) and their relationships in one place and re-use this information throughout the system.



Multi Tenant

Easily customize the look and feel of the BEXIS 2 user interface and have your individual branding.

Whats new in BEXIS 2.12.0?

- Custom data download (filtering, sorting, selecting rows/columns)
- dataset owner concept implemented
- request access to a dataset
- appending rows to an existing dataset (instead of update)
- dataset attachments
- separate public Search (no login required)
- Support additional file types in Upload (.xlsx, .csv, .tsv)
- extended Zip download
- manage documents
- Import Data provides more user guidance
- first version of a visualization

Community

Development Partner

FRIEDRICH-SCHILLER-
UNIVERSITÄT
JENA

Max Planck Institute
for Biogeochemistry



TUM
TECHNISCHE
UNIVERSITÄT
MÜNCHEN

GEORG-AUGUST-UNIVERSITÄT
GÖTTINGEN



PENSOFT®

GWDOG
Gesellschaft für wissenschaftliche
Datenverarbeitung mbH Göttingen

Project Instances



- Open Source Software Licence: GNU LGPL 3.0
- Code: <https://github.com/BEXIS2>
- Annual User and Developer Conference (since 2015)

Thank you

Live Demo Session:

Today 17:15-18:15, Foyer

Contact:

@BexisData

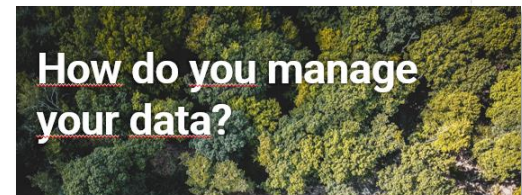
roman.gerlach@uni-jena.de

<http://bexis2.uni-jena.de>



BEXIS 2 data manager features

- Customizable Search Interface
Customize the Search Interface, e.g. select the metadata elements to be indexed and shown, specify the facets, and determine the representation of search results.
- Use Multiple Metadata Schemas
Import multiple metadata schemas (DSD) relevant to your user community. For each schema a custom form will be generated to BEXIS.
- Your Feature
What is your feature? [Learn more](#)



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What is your feature? [Learn more](#)
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<http://bexis2.uni-jena.de>