

# BEXIS 2.2.0

## Data Planning Module

---

### *User Guide*

#### **Authors**

Martin Hohmuth, Roman Gerlach

#### **Contact**

Website: <http://fusion.cs.uni-jena.de/bexis>  
Email: [bexis-support@uni-jena.de](mailto:bexis-support@uni-jena.de)  
Phone: +49-(0)3641-948968

#### **Acknowledgement**

The development of the BEXIS 2.2.0 software would not be possible without the German Science Foundation (DFG) funding the BEXIS++ project. BEXIS++ is a collaboration of the Friedrich-Schiller-University Jena, Germany (Dept. of Computer Science, Dept. for Geography, Dept. of Ecology) and the Max-Planck-Institute for Biogeochemistry Jena, Germany.

**Content**

Overview .....3

Unit Manager.....4

Data Type Manager .....5

Data Attribute Manager .....6

Data Structure Manager .....7

## Overview

In BEXIS your data is stored and managed as part of a dataset. A dataset may be anything from a single record up to a collection of millions of records and multiple variables. Each dataset may have an individual structure given by the number of variables and their properties. It is up to the user or the data manager of a project to define such Data Structures. This is what the Data Planning Module is for.

The module is called “Data Planning” since it is good practice to specify the Data Structure before collecting your data in the field or the laboratory. Your data can only be uploaded to the system (using the Data Collection Module) if there is a corresponding Data Structure already existing.

A Data Structure contains one or more Data Attributes. Each Data Attribute is defined by its Data Type, a Unit, and a unique name. So defining Data Types and Units would be the first step, if they are not available yet. In a typical project scenario, the responsible data(base) manager would have created the most common Data Types and Units.

The system encourages reuse of Data Attributes, as well as Data Types and Units. For example, there should be only one Data Attribute for temperature values with a Data type of ‘float’ and measured in degree Celsius (i.e. unit). All datasets containing such temperature measurements should use this data attribute in there data structure. The advantage of such reuse is not only to avoid redundancy (e.g. different names for same thing), but is foremost to enable integration of identical variables across different datasets for large synthesis tasks later on.



## Unit Manager

With the Unit Manager you are able to create, modify and delete Units. Units may be required to define Data Attributes.



### Create a Unit

1. Open **Plan** → **Unit Manager**
2. Click on the **Add Unit** button

	Name	Id	Description	System Type
<input type="checkbox"/>	String	1	A Unicode String	String
<input type="checkbox"/>	Number	2	An Integer Number	Int32
<input type="checkbox"/>	Decimal	3	A Real Number	Double
<input type="checkbox"/>	Date	4	A Date +Time	DateTime
<input type="checkbox"/>	none	81	none	String
<input type="checkbox"/>	t e s t	106	test	UInt32
<input type="checkbox"/>	testing sven	107	dsfsdf	UInt16
<input type="checkbox"/>	eej	108	dsfsdf	Char
<input type="checkbox"/>	bexis2	109	sdffs	Int16

3. Fill the **Name**, **Abbreviation**, **Description**, **Dimension** fields
4. Choose **Measurement System** and **Associated Data Types** (optional)
5. Click **Save button**
6. The Unit is stored if all information are correct and it is not a duplicate

### Edit/Delete a Unit

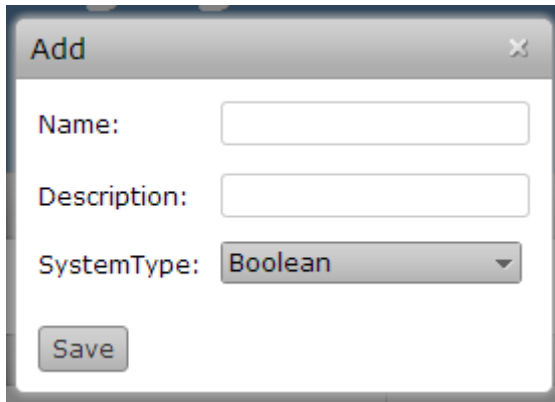
1. Open **Plan** → **Unit Manager**
2. To delete a Unit click the delete button  or the edit button  for editing
3. For editing a Unit follow steps 3 – 6 from **Create a Unit** part

## Data Type Manager

With the Data Type Manager you are able to create, modify and delete Data Types. They are required to specify Data Attributes.



### Create a Data Type

1. Open **Plan** → **Data Type Manager**
2. Click on the **Add Data Type** button



3. Fill the **Name** and the **Description** field
4. Choose **System Type** (is Data Type used form the System to Store values of the Data Attributes using this Data Type)
5. Click **Save button**
6. The Data Type is stored if all information are correct and it is not a duplicate

### Edit/Delete a Data Type

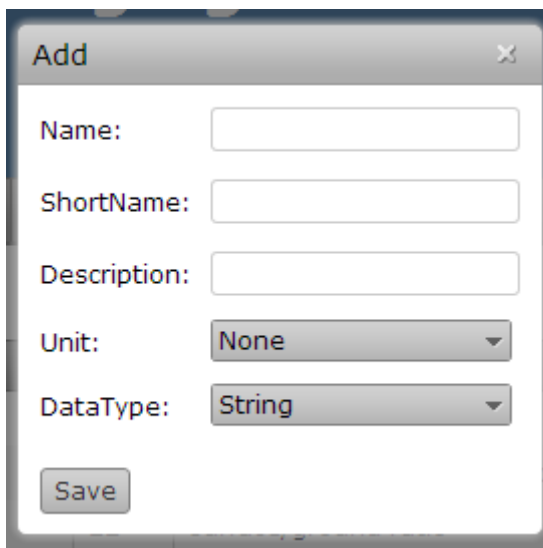
1. Open **Plan** → **Data Type Manager**
2. To delete a Data Type click the delete button  or the edit button  for editing
3. For editing a Unit follow steps 3 – 6 from **Create a Data Type** part

## Data Attribute Manager

With the Data Attribute Manager you are able to create, modify and delete Data Attributes. Data Attributes are required to create Data Structures.

### Create a Data Attribute



1. Open **Plan** → **Data Attribute**
2. Click on the **Add Data Attribute** button



The screenshot shows a dialog box titled "Add" with a close button (X) in the top right corner. It contains five input fields and two dropdown menus, followed by a "Save" button. The fields are: "Name:" (text input), "ShortName:" (text input), "Description:" (text input), "Unit:" (dropdown menu with "None" selected), and "DataType:" (dropdown menu with "String" selected). The "Save" button is located at the bottom left of the dialog.

3. Fill the **Name**, **Short Name** and the **Description** field
4. Choose a **Unit** and a **Data Type**
5. Click **Save button**
6. Data Type is stored if all information are correct and it is not an duplicate

### Edit/Delete a Data Type

1. Open **Plan** → **Data Attribute**
2. To delete a Data Attribute click the delete button  or the edit button  for editing
3. For editing a Unit follow steps 3 – 6 from **Create a Data Attribute** part

## Data Structure Manager

The Data Structure Manager is a tool to create, modify and delete Data Structures. Data Structures contain Variables, which are specific instances of Data Attributes. For example, only one Data Attribute 'Count' is needed to build a Data Structure of multiple similar variables where only the name (e.g. species name) is different. Each Variable uses the same Data Attribute (e.g. instances of Count).

### Create a Data Structure

1. Open **Plan** → **Data Structure Manager**

#### New Data Structure

Info:

Name

Number of Variables: 0

Data Structure ID: 0

Description:

2. Type the Name of your Data Structure in in the **Name** field and a Description in the **Description** field
3. Click the **Save** button

### Add a Variable to a Data Structure

1. Open **Plan** → **Data Structure Manager**
2. Select a Data Structure from the **tree** on the Left side

**Demo Data Structure**

Info:

Name

Number of Variables: 0

Data Structure ID: 181

Description:

Functions
Name
VariableID
ShortName
Description
Classification
Unit
Data Type

3. Click the **Add Variable** button

	Name	Id	Short Name	Description	Classification	Unit	Data Type
<input type="checkbox"/>	PlotID	20	PlotID	Long named Plot IDs		Gram	String
<input type="checkbox"/>	Ecke	21	Ecke	corner of the EP which is in center, if -1, then around original plot center			String
<input type="checkbox"/>	roughness average	22	rough_avg	surface/ground ratio			Decimal
<input type="checkbox"/>	roughness standard derivation	23	rough_sd	surface/ground ratio standard derivation			Decimal
<input type="checkbox"/>	ground hits	24	groundHits	fraction of echos hitting ground			Decimal
<input type="checkbox"/>	Identifier	25	ID	internal numbering of the data sets			Number
<input type="checkbox"/>	Family	26	Family	taxonomic rank family			String
<input type="checkbox"/>	Species	27	Species	taxonomic rank species			String
<input type="checkbox"/>	individuals total	28	ind_total	total number of sampled specimens			Number
<input type="checkbox"/>	test_001	81	ghfgfhf	fgfh		None	eej
<input type="checkbox"/>	EP PlotID	29	EP_PlotID	Name for experimental plots		None	String
<input type="checkbox"/>	Plec_sp	30	Plec_sp	Activity of Plecotus sp. Including both species Plecotus auritus and Plecotus austriacus			Number

4. Mark all **Attributes** you want to add and click the **Save** Button (to add one Attribute multiple times just repeat step 3 and 4)

### Edit/Remove a Variable

1. Open **Plan** → **Data Structure Manager**
2. Select a Data Structure from the **tree** on the Left side
3. To delete a Variable click the delete button or the edit button for editing (the Variable is deletable/editable if the Data Structure is not used by an Dataset)

**Edit\_Variable**

Name:

ID: 441

Description: Long named Plot IDs

Unit: Gram

Data Type: String

4. If you use one Attribute multiple times you should change the name of the Variable and click Save



## Delete a Data Structure

1. Open **Plan** → **Data Structure Manager**
2. Select a Data Structure from the **tree** on the Left side
3. Click the **Delete** button (the Data Structure is deletable if the Data Structure is not used by an Dataset)