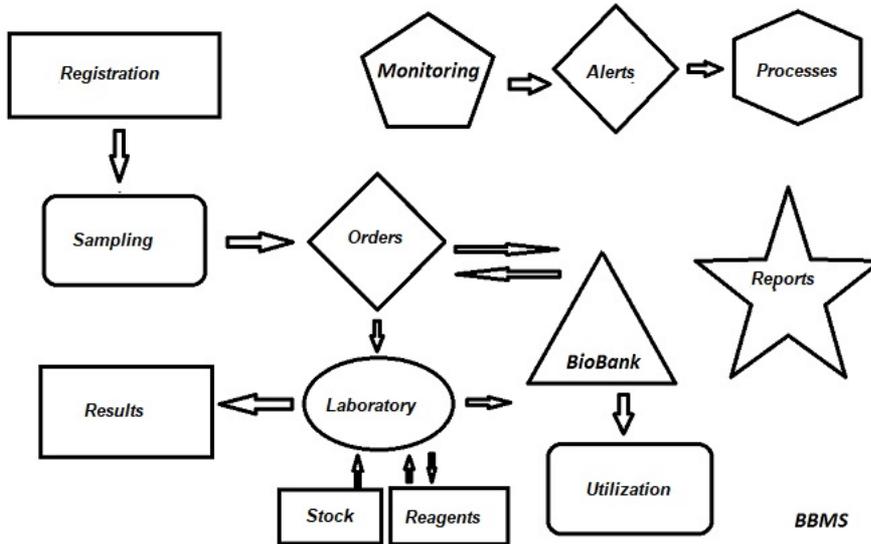


BBMS dbf 3.77 - BBMS sql 2.53

BioBank Management System

Biobank and laboratory infrastructure management and equipment control system.



Overview:

- no web browser needed
- has no restrictions and limitations
- no Internet connection required (isolated system)
- may operate in a network on any number of workstations (server recommended)
- documented and open database structure
- facilitates creation of user subbases
- compatible with Microsoft Office and OpenOffice
- data import from Excel/Calc/Access and any SQL databases via ODBC
- compatible with barcode printers via their scripts: Zebra (ZPL), Sato (E+), and Brady (LFC)
- compatible with 1D (any) and 2D scanners (LabMind, FluidX, Micronic)
- user-defined report module that can print/export any data
- in-depth permission system (to windows and database elements)
- compatible with LanKontroler modules for monitoring environmental conditions
- acquires data directly from Q-MSystem database module
- on-line or local network update
- definable XML export/import module
- interface languages:
Polish, English, German, French, Spanish, Italian, Swedish, Dutch, Esperanto, Norwegian, Danish, Finnish, and Estonian
- context help (F1 key) in each interface language
- conforms to PN-EN ISO 17025 and ISO 15189 standards
- no dongle, no USB port required
- manages laboratory documentation using an attachment system
- resource registry for monitoring equipment
- automatic generation of a series of reports for multiple e-mail accounts
- quick data search and filter in window
- data in window can be copied to a container (clipboard)
- text alerts on any user defined event sent to user defined phone number

LabMind, provider of this software, is a specialist in biobank and laboratory automation. We have developed more applications that are inter-compatible.

BBMS version for biobank and laboratory includes the following additional software: Yeti (freezer robot), Agata (lab-scale gantry crane), Adjunct (micro-crane for sorter), Sorter (vial sorter controller), 2D (2D scanner controller), Agent (communication with other terminals), Robot (software for implementing programmed processes using Agents), and many others.

Valid version of the document in PDF can be found at http://bbms.pl/BBMS_EN.pdf.

The software can be updated on-line at <http://bbms.pl/> or by activating a relevant action in the Help menu.

Operation

Each table has a context menu activated by right mouse button.

Edit
Add
Copy
Delete
Status
To container
Container
Up
Down
Move
Print
Sheet
Form
Template
Changes
Events
Bindings
Sum
Audit
Note
Permissions
Column

The new position can be added using the "Add" menu command or by pressing the [Ins] key, and deleted using the "Delete" command or the [Del] key.

"Status" - changes the status of one or more selected items.

"Container" copies the selected table row to the container.

The "Up" and "Down" commands move the selected line in the right direction.

Many windows have the Drag-and-drop functionality enabled, allowing you to move elements in the tree to another branch using the left mouse button - equivalent to the "Move" command from the popup menu.

"Print" - allows printing data from the window, not only to the printer, but also to a file in one of many formats

"Sheet" - sending data to a spreadsheet. Any office suite should be installed on the computer, and if there are two, you can choose the default resource.

"Changes" - preview of changes made in the indicated table position.

"Sum" - works in selected modules - starts the procedure of adding data, e.g. states.

"Note" - allows you to enter a note to a selected position, the same command appears in the edit window.

"Permissions" - granting or removing permissions for the current window or tables rewritten to the window. Admin has rights to these activities, and others can check current permissions.

Editing pane:

In each editing window, after placing the mouse pointer over the field, a description of this field will be displayed, and a description of the field with the cursor will appear on the status bars.

Editing windows in addition to entering data allow you to connect and manage documents in electronic form using a set of buttons [+], [>], [-].

After attaching the document, a link to it will appear and the document will be copied.

Startup parameters:

The software can be run with parameters entering data or settings.

/Fbase

e.g. C: \ BBMS \ EXE \ BBMS.exe / FC: \ TEST

C: \ TEST database will be automatically selected

/User

e.g. C: \ BBMS \ EXE \ BBMS.exe / Uadmin

The default user for logging in is "admin" and if there is no password defined, it will be automatically logged in

/Hpassword

e.g. C: \ BBMS \ EXE \ BBMS.exe / Uadmin / Hadmin

gives the admin password for the admin user and if it is the real password, login will take place

/Sdrv

e.g. C: \ BBMS \ EXE \ BBMS.exe / SCD
only scan C and D disks for BBMS databases

\\ path

e.g. C: \ BBMS \ EXE \ BBMS.exe \\ SRV \ DB
resource indication using UNC path

/ 1

e.g. C: \ BBMS \ EXE \ BBMS.exe / 1
run only one instance,
option used on the server with ROBOT login

/ Mnnn

e.g. C: \ BBMS \ EXE \ BBMS.exe / M128

reserve and use the indicated amount of memory in mega bytes,

This parameter should be used if memory problems occur while the software is running.

Minimum 16, maximum 256, optimal and default 64.

If the computer has up to 4GB, use the parameter <= 64, because you will lose performance due to virtual memory support.

Computer Network - automation and integration

The software may be used in a computer network and share all data. There are no limitations in this regard and some methods may optimise operation.

1. All shared data should be stored on a computer that shares a hard drive in such a way that the \BBMS\DBF\ folder is visible
2. Program files, i.e. content of \BBMS\EXE can and should be on a local hard drive, e.g. C:\BBMS\EXE

After start, the software scans local and mapped shared hard drives for \BBMS\DBF. If you want to limit the number of scanned drives, start the program with parameter /S.

Example:

A facility has seven computers in a network and has no server: BOSS, SECRET, REG, LAB1, LAB2, BB1.

The SECRET (secretary) computer has a large local hard drive divided into partitions. Hence data is installed in folder D:\BBMS\BAZY\BIOBANK. This drive is shared in the network and mapped on the other computers. The letter assigned to the mapped drive can be defined by the user but letters used for floppy or CD-ROM drives by default are not used. Assuming the drive is mapped as F.

The configuration is:

SECRET D:\BBMS\DBF\BIOBANK

BOSS and others F:\BBMS\DBF\BIOBANK

The next step is to optimise software networking. It is only natural that software works faster when the maximum amount of data is read from a local hard drive, e.g. C. This is not in the spirit of networking, so the applied solution is to transfer software and all possible data to a local hard drive. All is needed is to copy the whole folder \BBMS\EXE from SECRET drive to a local drive of a computer being prepared. The computers then have C:\BBMS\EXE and drive F: has data.

There is no need to copy the folder with data (BAZY). What is more it should not be done so as not to cause confusion in the future.

The above-mentioned configuration is sufficient for networking. All there is to resolve is the issue of software update and data backup copy.

Updates (and installations) are by default made to C:\BBMS\EXE, so it suffices to update the software on one computer and then "manually" copy all folder content to the shared drive, e.g. F:\BBMS\EXE.

"Manually" is in quotation marks as the operation can be performed with the xcopy command.

Creation of data backup is essential to ensure that after damage or destruction of databases, user's effort is not wasted.

There are two backup mechanisms: manual in the System menu and automatic, in Alerts, using the Backup() function.

Registration

Registration

Registration -> Visit -> Sampling -> Orders

Print [Ctrl+P]

animal plant fungus bacteria virus cell

No.DNA -> ~0003 foreign

Surname Kowalska ? [F5]

Forename Anna << [F6]

Family name

Names of parents 0003

identity card AA 123456 Country

PESEL 461876431874 TIN

date of birth 1946 12 06 Date of death.

Gender: female male unknown

* Project / stand / party. * data required

Kraków/2014.04 Szczecin statyw 20575765 2013

Center Kraków

Location - post 70-123 Szczecin Szczecin attention

Address Testowa 11 2 Note PS

Tel. SMS e-mail Status: OK

+ add lek tst ANK1 zak 1

Height 0 cm Waist 0 cm Waist-hip ratio 0.00

Body weight. 0 kg Hips 0 cm Body Mass Index. 0

Cigarettes Medicines Blood type.

+ > - ± Changes Save Clear Delete

Recording of identification data of the Proband/Donor and visits.

If the acceptance of the material begins with registration, this is the window in which you can enter the data and its subsequent visits.

The window has a quick search function, the effects of which can be seen next to the fields with the proband's data in the "Database" area.

If the software finds any data, you can click the [<<] button or the shortcut key [F6] - allowing you to copy the data from the database to the form or display a list of similar ones.

The registration of visits is done in the table on the right side of the window, where you enter the type of examination and the material submitted for examination. The software automatically transfers the appropriate data to the next module Collection.

The [Control] button is used to start the procedure checking the correctness of the data in the database.

After completing the registration, click the [Save] button.

We start editing the data of the new proband by clearing the [Clear] form.

Important!

- The proband/donor must be assigned to the "Project" (Start menu -> Projects)

In the window, you can activate the survey form, you only need to define the survey in the sub-databases.

Surveys are assigned to project branches, i.e. after selecting the project, the appropriate survey should appear in the registration window.

The [?] button with the F5 keyboard shortcut is used to quickly fill in the Donor identification data with the taxonomy, e.g. fungi, bacteria and viruses.

Beforehand, you need to enter or import the taxonomy into the table in the sub-databases and indicate the rules for rewriting the taxonomy for registration by right-clicking on the [?] button

Visit

When editing a visit, you can select tests and sampled specimen type.

Visit: Kowalski Janek

Visited: 2021.05.27 00:00 THR CITO ICD: A00.9

description: opis

doctor: **Kasia** Payer: **NFZ**

Project: Kraków/2014.04 Kielce1 2014.04.19

Note:

opis aab

lek | res

lek: vitamin C	stężenie	10,00
lek: vitamin B	stężenie	2,00
lek: vitamin D	stężenie	0,20

lic: 0

attention: Uwagi

+ > - U150215026 img12 img7

-Status- OK block error none

substance / material

- krew
- ślina
- Mocz
- Tkanka
- bloczek
- osocze

Receiving: 2021.01.11

Barcode: U150215026



Test and specimen controls are set dynamically based on definitions in Work flows.

In this window, electronic documents may be attached.

Pseudonymisation

Pseudonymisation ×

Date and time of pseudonymization: 2020.07.01 12:20:52

Surname	Kowalski	<input checked="" type="checkbox"/>
Forename	Jan	<input checked="" type="checkbox"/>
Family name	Nowakowski	<input checked="" type="checkbox"/>
Names of parents	Albin	<input checked="" type="checkbox"/>
PESEL	12345678903	<input checked="" type="checkbox"/>
identity card	ABC 12345678	<input type="checkbox"/>
TIN		<input type="checkbox"/>
Location - post office	70-123	<input type="checkbox"/>
locality	Szczecin	<input type="checkbox"/>
Address	uliczka 1 2	<input type="checkbox"/>
Telephone number		<input type="checkbox"/>
E-mail address		<input type="checkbox"/>

Please enter the same password to encrypt data for pseudonymization twice.
Secure the password in the armored cabinet!

Pseudonymisation is a process of inverting the removal of selected identification data of a sample.

Technically, the process is carried out by rewriting to another table in an encrypted form.

The source table is OS1 and the target table is OS2. The fields have the same name.

For encryption, a password is used, which should be stored in a different place than the database, e.g. in a different location or armored cabinet.

In addition, the software saves the date and time of pseudonymization to the database.

The reverse process is re-pseudonymisation.

In addition to pseudonymisation, other methods of data security can be carried out:

- anonymisation
- entitlement.

Anonymisation consists in irreversible deletion of identification data.

By using the authorization system in BBMS, you can hide selected fields of database tables for an indicated user.

Re-Pseudonymisation

Re-Pseudonymisation ×

Date and time of pseudonymization: 2020.07.01 08:17:29

Please enter the same password decrypting data from pseudonymization twice.

Re-pseudonymisation is the process of restoring the identification data of a probant after pseudonymisation.

A prerequisite is to have the password used for pseudonymization.

Clinical picture

Clinical picture ×

2021.05.23 ICD-10 A00.0

Date He/She described **Admin**

added OK1

test

Clinical description.

Clinical description in the interface language. ^
v

Clinical description in another language, typically English or Latin.

Clinical description in another language. ^
v

Classification Classification code

Diagnosis

The result of the medical diagnosis.

The result of the medical diagnosis. ^
v ?

The result of the medical diagnosis in another language, such as English or Latin.

The result of the medical diagnosis in another language. ^
v ?

+ > -

Status: OK block error none

Changes Form

Note Template

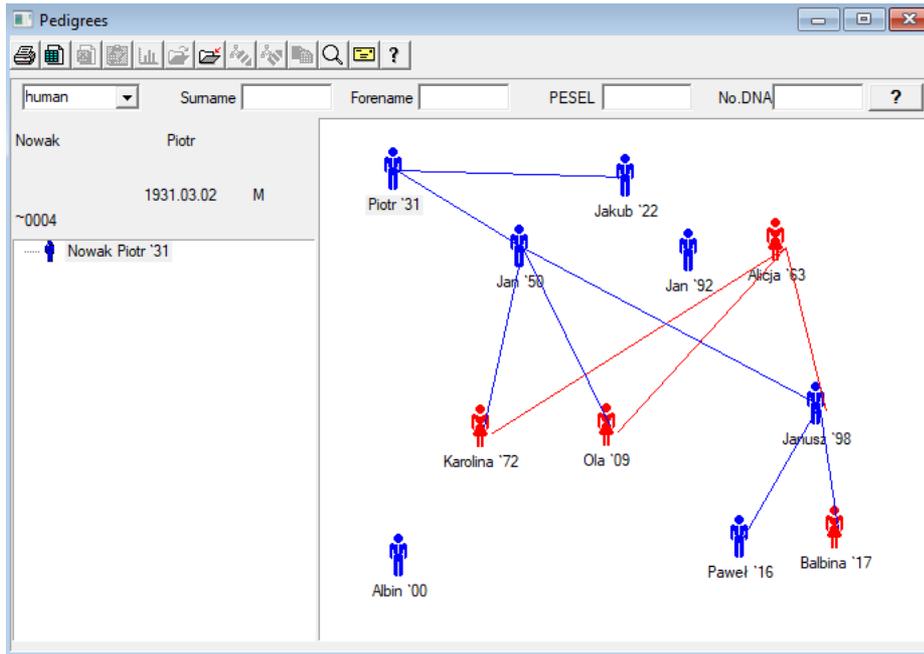
Save Abort

Date of the clinical picture.

The "Clinical Picture" window is available from the level: Registration, Visit, Order and Sample. Contains edit fields for entering information related to diagnosis and diagnosis. It is also possible to attach documents containing the necessary supplementary data.

The software supports many clinical images.

Pedigrees



By design, BBMS has to include a module Pedigrees, which is not a stand alone module on its own. On the contrary, works to fully synchronise lineage data with test results for biologically related family members are under way. This synchronisation should provide information as regards the need to perform genetic tests for persons who potentially have relevant mutations and have not been tested.

The next feature of the Pedigree module is automatic search for persons that may be related but are not included in a pedigree.

Pedigrees are used to build family trees based on probant records.

Each probant is assigned to one family tree and can have one mother and one father.

The icon window facilitates editing personal data and adding a new person to a family by selecting them in person database.

Pedigrees - Edit

Pedigree data is stored in the BBMS database.

The window is divided into personal data and details. The details part includes the following tabs: "Identification", "Traits", and "Tubes".

Pedigrees - edition

human Surname: Nowak Gender: female male unknown

Forename: Jan

date of birth: 1950 04 04 Biological father: Nowak Piotr 1931.03.02 Mother care:

Date of death:

Identification Features Tubes Dentition Diagnostics tst

Family name: Kowalski Names of parents:

PESEL: 123456789 TIN:

Location - post: locality: Address: Tel.: E-mail address: Blood type: Eye Colour: Height: 0

Bookmarks Save Abort

Identification data may come from person's ID card or a survey.

Traits on the screen shot below are used to verify lineage based on genetically inherited traits.

Pedigrees - edition

human Surname: Nowak Gender: female male unknown

Forename: Jan

date of birth: 1950 04 04 Biological father: Nowak Piotr 1931.03.02 Mother care:

Date of death:

Identification Features Tubes Dentition Diagnostics tst

Skin color: Face: N.A. round square oblong Chin: N.A. no groove the groove

Nose: N.A. straight upturned Roman Freckles: N.A. no freckles moles warts

Cheek: N.A. with the l without hol Tongue: N.A. no trumpet trumpet The shape of the eye: N.A. round almond

Eyelashes: N.A. short long Eyebrows: N.A. narrow wide Eyebrows: N.A. separated combined

Hair color: Hair: N.A. straight wavy curly lamb Hairline on the forehead: N.A. bow tooth

Flakes ear: N.A. free adnate Placing his hand - thumb: N.A. left to right right to left The little finger of the hand: N.A. simple curved

Bookmarks Save Abort

To facilitate searching for test specimens, the next tab shows a list of test tubes stored by the biobank.

The list may be printed out, exported to a spreadsheet, or sent to the Container from the context menu (Right Mouse Button).

Pedigrees - edition

human Surname: Nowak Gender: female male unknown

Forename: Jan

date of birth: 1950-04-04 Biological father: Nowak Piotr 1931.03.02 Mother care:

Date of death:

Identification | Features | Tubes | Dentition | Diagnostics | tst

No.	2D	Pos.	num	type	material	No.DNA3	proband	Commission	ICD	scan	weighting	Date	Mother
?	343221				bloczek		Nowak Jan	U150215029					
✓	00004	A1	1		DNA		Nowak Jan						

The next tab, Dentition facilitates input of dentition inheritance data.

Pedigrees - edition

human Surname: Nowak Gender: female male unknown

Forename: Jan

date of birth: 1950-04-04 Biological father: Nowak Piotr 1931.03.02 Mother care:

Date of death:

Identification | Features | Tubes | Dentition | Diagnostics | tst

18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28
48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38

legend:

- txt 1
- txt 2
- txt 3
- txt 4
- txt 5
- txt 6
- txt 7
- txt 8

Bookmarks Save Abort

Pedigrees - edition

human Surname: Nowak Gender: female male unknown

Forename: Jan

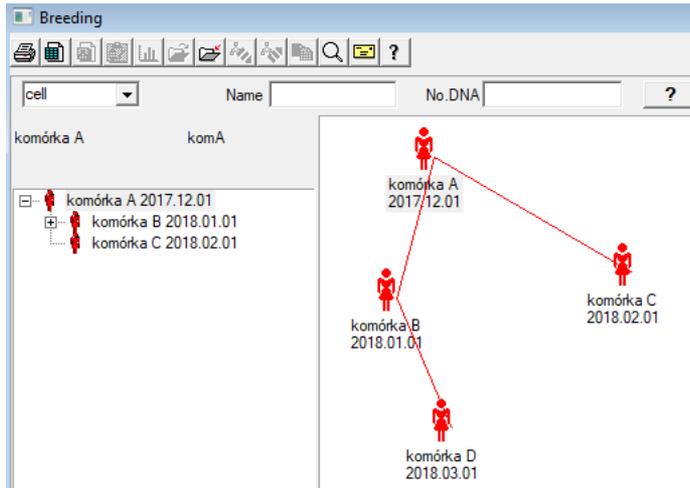
date of birth: 1950-04-04 Biological father: Nowak Piotr 1931.03.02 Mother care:

Date of death:

Identification | Features | Tubes | Dentition | Diagnostics | tst

No.	Code/Name	description

Breeding



Breeding is Pedigree without a male :)

Here you can lead cell lines, bacterin and viruses, any creature without male reproduction (parthenogenesis).

In the Biobanks module you can breed in a different approach, there the source sample is called Mother for order, and a child daughter. However, Daughters do not have to arise through reproduction, because dilution is enough.

Breeding - edition

Breeding - edition ×

<input type="text" value="cell"/>	Name <input type="text" value="komórka B"/>	Mother care <input type="text" value="komórka A 2017.12.01"/>
No.DNA <input type="text" value="komB"/>		
date of birth <input type="text" value="2018"/> <input type="text" value="01"/> <input type="text" value="01"/>	Date of death. <input type="text" value="2019"/> <input type="text" value=""/> <input type="text" value=""/>	
Identification Features Tubes Diagnostics tst		

The edit properties pane for the sample in the culture will be expanded as needed.

Sampling

Labelling a specimen with a 1D or 2D code.

The window is called Sampling and it should support the sampling process or registration of otherwise provided specimen but its core objective is to label specimens.

sample	Material	Study	1D or 2D code	commission
1	krew	BRCA1	H180425039	H180425039
2	ślina	P16	S180425039	S180425039
3	krew	BRCA1	K190223043	K190223043
4	krew	BRCA1	K190223045	K190223045
5				
6				
7				
8				
9				
10				

In other words, one visit is turned into multiple vials. Prior to sampling/labelling, select a proband from the list.

The list includes persons with a visit scheduled for this day and assigned to the selected project.

The assumption is to do as little additional actions as possible during sampling.

After sampling, you can print a barcode and stick it to the vial with the specimen.

Procedure:

Step 1: select person in the list

Step 2: select specimen type

Step 3: select test

Step 4: scan and enter the code to label the specimen

Step 5: optionally: print code to stick to the vial

Step 6: if done, click [Save], else repeat from step 2 in the next row

Notes

Step 1: the list includes persons scheduled for this day. Any missing items require only checking visit date in the Registration window. Steps 2, 3, and 4 are used to enter data.

After saving data and leaving the window, you can return to the same person to continue sampling or make corrections.

In this window, you can print a 1D/2D code using a code printer.

Automatic generation of a code involves replacement of code mask with information from the database. The following characters may be used to create a code mask:

“u” – symbol from user base, “prefix” column

“s” – specimen symbol from batch print, the same data can be found in Configuration -> Batch print

“r” – year, the last two digits of the sampling year

“m” – sampling date month

“d” – sampling date day

“n” – consecutive sampling number, multiple “n”s can be saved

“k” - site prefix

e.g. usrmnnnn

Sampling - edition

Proband - download biological material ×

Material	krew		Study	BRCA1			
osocze	1234	ml	txt1	erytrocyty	890	ul	uwaga
leukocyty	234	ul	txt2	trombocyty	654	ul	
objętość	567	ml		par6			
par7				par8			

Note Reagents Stock Resources

added OS4

moje ▼

+ > -

Status: OK block error none

score 2020.06.21 ▼

Changes Form
Note Template
Save Abort

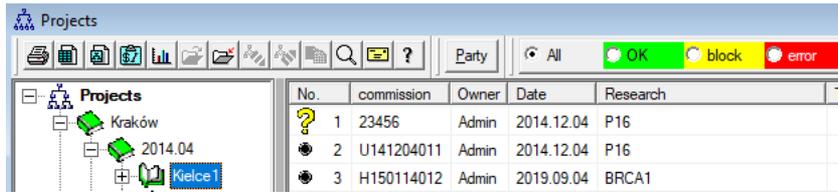
Controls with values of "blood" material parameters, visible in the window, are dynamically generated based on the definition of parameters of this material.

Check or complete the System-> Materials menu. Examples can be found in the TEST database.

In this window you can record the consumption of reagents, consumables and equipment.

Survey results are often presented using a form or template.

Projects



No.	commission	Owner	Date	Research	T
1	23456	Admin	2014.12.04	P16	
2	U141204011	Admin	2014.12.04	P16	
3	H150114012	Admin	2019.09.04	BRCA1	

Nearly all research and development facilities, laboratories, and biobank operate by using projects or grants. Even if there is a facility that does not carry out projects, it may divide its orders into stages, e.g. monthly or quarterly.

The Projects module organises orders by dividing them into groups. Here, you can check the current stage of orders.

On each tree level, you can select an active survey. A survey is a specific subbase that will be displayed in the Registration module when selected.

Projects - Edit

The Project edit window is context-dependant: relevant controls are active in appropriate places in the tree.
The branch with orders is the level corresponding to a stand or period or batch as selected by a specific facility.

Projects - parties, tripods

Name:

Owner: **Kasia** commis.: **Kasia**

Date: questionnaire: **ANK2**

description:

1D code Tripod:

Job mask: last: start:

Code mask: last: start:

Note:

Collection:

added PR3
P3:

attention: Hiking:

+ > -

Status: OK block error none

Note Form Template
Changes Save Abort

The party's name / tripod

In addition to input of project data, orders are edited on a certain tree level.
This window is used similarly to the one in the Orders module.

Projects - orders, vials

commission:

Owner: **Admin** commis.:

Date: sample:

description:

Code:

No.DNA2:

Payer: **NFZ** foreign:

proband: **Anonim Jan 00000** Visit:

Clinical picture:

ICD:

Note:

added PR4
P4: bttst:

attention: Hiking:

+ > -

Status: OK block error none

Note Form Template
Changes Save Abort

Name or number of the order

BRCA1
 P16
 NOD2
 BRCA2/B2P1
 onko

substance / material

krew
 ślina
 Mocz
 Tkanka
 bloczek
 osocze

Each order consists of two stages. Every stage can be controlled with a status.

Name

Performed

completed material

Variant stage.

Stężenie	<input type="text"/>	ug/ml	<input type="text"/>	Waga	<input type="text"/>	<1500	<input type="text"/>
Objętość	<input type="text"/>	ul	<input type="text"/>	par4	<input type="text"/>	ul	<input type="text"/>
par5	<input type="text"/>	ul	<input type="text"/>	par6	<input type="text"/>	ul	<input type="text"/>
par7	<input type="text"/>	ul	<input type="text"/>	par8	<input type="text"/>		<input type="text"/>
par9	<input type="text"/>		<input type="text"/>	par10	<input type="text"/>		<input type="text"/>

Note

attention

+ > -

Status: OK block error none

<input type="text" value="Note"/>	<input type="text" value="Form"/>	<input type="text" value="Template"/>
<input type="text" value="Changes"/>	<input type="text" value="Save"/>	<input type="text" value="Abort"/>

Name

Projects - Batch

Party ×

Kielce1

Stage

	No. status steps of:			
	OK	blk.	error	?
Badanie <input type="checkbox"/>	12	0	0	0
Bankowanie <input type="checkbox"/>	0	0	12	0
Izolacja <input type="checkbox"/>	11	1	0	0
Pobranie <input type="checkbox"/>	20	0	3	1
Przygotowanie <input type="checkbox"/>	0	0	12	0

Performed

Status

OK blk. error ?

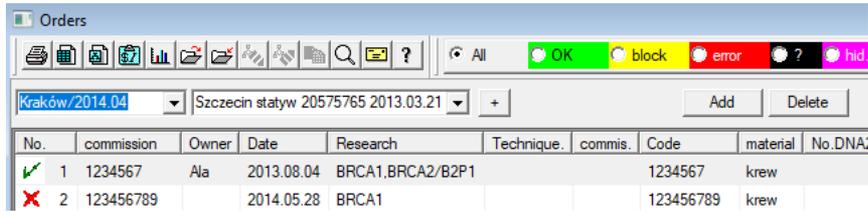
This window facilitates changing statuses of all stages of orders of a selected batch (on a stand).

First, select the Stage whose status you want changed; then select the Status and click Save.

You can complete, halt, or restart a stage with one click :)

Orders

List of specimens (orders) to be tested or stored.



The screenshot shows a software window titled 'Orders'. At the top, there is a toolbar with various icons and a status bar with colored buttons labeled 'All', 'OK', 'block', 'error', '?', and 'hid'. Below the toolbar, there are two dropdown menus: the first contains 'Kraków/2014.04' and the second contains 'Szczecin statyw 20575765 2013.03.21'. To the right of these menus are 'Add' and 'Delete' buttons. The main area of the window is a table with the following data:

No.	commission	Owner	Date	Research	Technique.	commis.	Code	material	No.DNAz
✓ 1	1234567	Ala	2013.08.04	BRCA1,BRCA2/B2P1			1234567	krewn	
✗ 2	123456789		2014.05.28	BRCA1			123456789	krewn	

Here, you can specify what is to be tested and by whom.

All orders are grouped within projects. Project is a conventional term and does not have to refer to a specific event that is usually called a project.

A project may involve routine laboratory work. Division into project facilitates chronological record of orders, e.g. by months or weeks.

It is a mechanism for streamlining orders so that tedious going through thousands of orders is not necessary.

Additionally, each order (as in other modules) has a status and can be filtered by it: Status toolbar.

Orders - Edit

Projects - orders, vials X

commission

Owner **Admin**

Date X

description

Code

Payer **NFZ** No.DNA2

foreign

proband X **Anonim Jan 00000**

THR CITO

Note

added PR4

P4

bttst

attention

Status: OK block error none

substance / material

krew

ślina

Mocz

Tkanka

bloczek

osocze

BRCA1

P16

NOD2

BRCA2/B2P1

onko

Name or number of the order

Controls for tests and specimens are defined in the Patterns module.

The [Proband] button is disabled if the order was created automatically during sampling.

Bulk orders

Listing of orders and studies in orders.

No.	Name	Owner	Date	description	commis.	Code	attention	questionnaire	doc.	el.
✓ 1	Kelce 1	Kasia	2014.04.19		Kasia			ANK2		24
✓ 2	Szczecin statyw 20575765	Admin	2013.03.21	W ramach projektu		KS001		ANK1		25
✓ 3	statyw 8273627		2018.04.19							
🌐 4			2019.10.31							

No.	commission	Owner	Date	Research	Technique.	commis.	Code	material	No. D
? 1	23456	Admin	2014.12.04	P16		Kasia	23456	krewn	
🌐 2	U141204011	Admin	2014.12.04	P16		Kasia	U141204011	krewn	12

Bulk orders are grouped orders. Depending on the specifics of the work, the laboratory can be used: "Orders", "Orders" and "Projects".

All orders are grouped within projects. A project is a contractual concept and does not have to involve a strictly defined project term. The project can be a routine laboratory work, and the project division itself allows for chronological record of orders, eg within months or weeks. This is a mechanism to improve order processing so that there is no need to browse thousands of orders in a window, which is very burdensome.

Bulk orders - edition

Projects - parties, tripods ×

Name

Owner **Kasia** **Kasia**

Date **ANK2**

description

1D code Tripod

Job mask

Code mask

Note

Collection

added PR3
P3

attention

Status: OK block error none

The party's name / tripod

Projects - orders, vials ×

commission

Owner **Admin**

Date **000F5D9C4**

description

Code

No.DNA2

Payer **NFZ** foreign

proband **Anonim Jan 00000**

THR CITO

Note

added PR4
P4
txtst

attention

Status: OK block error none

Name or number of the order

BRCA1
 P16
 NOD2
 BRCA2/B2P1
 onko

substance / material
 krew
 ślina
 Mocz
 Tkanka
 bloczek
 osocze

Invoices - edition

Invoice - period.

Period

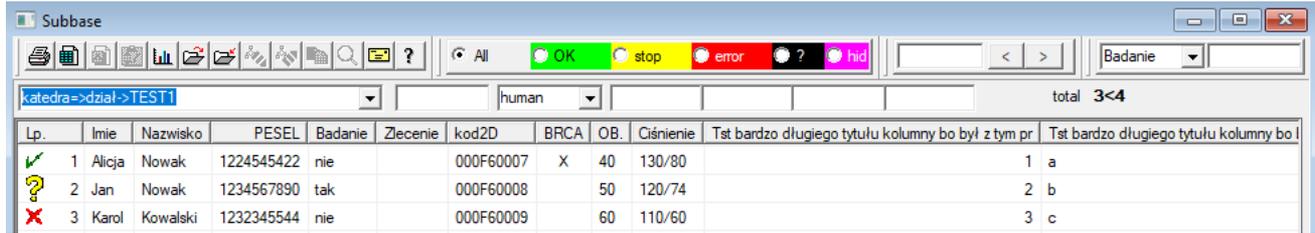
Note

attention

Net

Gross

Subbase



The screenshot shows a window titled "Subbase" with a toolbar and a data table. The toolbar includes icons for file operations, a status bar with "All", "OK", "stop", "error", "?", and "hid" buttons, and a dropdown menu for "Badanie". The data table has the following columns: Lp., Imie, Nazwisko, PESEL, Badanie, Zlecenie, kod2D, BRCA, OB., Ciśnienie, Tst bardzo długiego tytułu kolumny bo był z tym pr, and Tst bardzo długiego tytułu kolumny bo l. The table contains three rows of data.

Lp.	Imie	Nazwisko	PESEL	Badanie	Zlecenie	kod2D	BRCA	OB.	Ciśnienie	Tst bardzo długiego tytułu kolumny bo był z tym pr	Tst bardzo długiego tytułu kolumny bo l
✓ 1	Alicja	Nowak	1224545422	nie		000F60007	X	40	130/80	1	a
? 2	Jan	Nowak	1234567890	tak		000F60008		50	120/74	2	b
✗ 3	Karol	Kowalski	1232345544	nie		000F60009		60	110/60	3	c

BBMS uses system database and subbases.

While the structure of the system database should be defined and set publicly as it is vital for operation of the software (not just BBMS), structure of subbases may be changed virtually freely.

The idea behind subbases is not just user-defined tables but the option to keep records in other databases and software, e.g. MS Access, MS Excel, SQL and import it.

Subbases are very flexible, yet highly integrated with the system database. The software can assign subbase data to a specific probant (person, patient) or specimen.

Subbase tables can be included in reports, so that they show data from both system database and subbases.

Based on the definition in System -> Subbase structure, you can create any subbase with extended data on some aspects, e.g. probant, test results, or records.

You can import bases from Access, SQL, and Excel/Calc to this module any time. The data can be reported with user defined reports. Most common scenarios:

- A facility has various records in MS Excel, MS Access and they need to be kept.

It is recommended to place these records in such a way so that the person importing them to BBMS can access the relevant records.

- Questionnaires needs to be recorded.

Using a spreadsheet or any base, you can input/import questionnaires and then use as a subbase in BBMS.

Currently, survey templates are not standardised and each user creates them as to suit their needs.

Subbase - Edit

Subbase: katedra=>dział->TEST1 ×

commission Proband

sample

tab1

Lp. Imie Nazwisko PESEL

Badanie Zlecenie kod2D BRCA

OB. Tst bardzo długiego tytułu kolumny bo był z tym pr

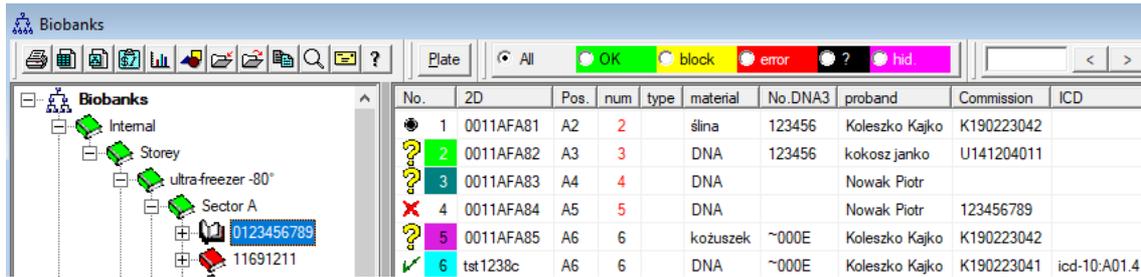
Tst bardzo długiego tytułu kolumny bo był z tym pr

+ > -

OK blk. error ? Changes Save Abort

Subbase structure and preferred fields are not known in advance.
Nevertheless, we strove to build an edit window with dynamic labels and fields.
An alternative solution is to introduce data to a subbase using other software and integrate it into BBMS.

Biobanks



No.	2D	Pos.	num	type	material	No.DNA3	proband	Commission	ICD
1	0011AFA81	A2	2		ślina	123456	Koleszko Kajko	K190223042	
2	0011AFA82	A3	3		DNA	123456	kokosz janko	U141204011	
3	0011AFA83	A4	4		DNA		Nowak Piotr		
4	0011AFA84	A5	5		DNA		Nowak Piotr	123456789	
5	0011AFA85	A6	6		kożuszek	~000E	Koleszko Kajko	K190223042	
6	tst1238c	A6	6		DNA	~000E	Koleszko Kajko	K190223041	icd-10:A01.4

Collecting biological material is much different to managing an ordinary warehouse. Each sample should have specific information that describes it such as code, address, storage parameters, history, and probant. Warehouse handling procedures may not be adopted because a specimen is not merchandise. Small samples of material may be taken from a specimen for testing, release and acceptance may have a significant impact on the quality of the material.

Biobank management should provide specific information on specimen address, history of releases, quality and environmental conditions. In BBMS, biobank records are organised as a geographical tree, making place of storage a vital piece of information. This window facilitates general overview of biobank structure. Specimen lookup is best done with the search tool (magnifying glass on the toolbar).

Plate handling is done in the window opened with the [Plate] button. You can scan the whole plate and/or just preview it.

This module facilitates complete record keeping for biological material in the form of biobanks or repositories.

It is absolutely necessary to:

1. code each tube/vial;
2. code each storage place;
3. scan tubes/vials prior to use;
4. provide manufacturer information in records if multiple biobanks cooperate.

Biobanks - Edit

Biobanks - vials, blocks

A sample of biological or chemical material should be identified by choosing an Order or Proband.

If a new sample is added or there is no date to scan it, the supplement formulas defined under the [?] Button start.

Examples of auto-complete definitions can be found in the test database. It is used, among others, to choose the producer, save dates etc.

The [|||||] button enables the code to be printed on a barcode printer.

If the label printer is equipped, the code can be printed using the form and the Pic () function

A sample can be assigned to many orders and many samples can be assigned to one order.

The [Mother] button allows you to select the source sample, and after clicking on the code, a window will open with the door of sample connections.

Electronic documents may be attached to a specimen using the [+], [>], and [-] buttons.

Biobanks - freezer, refrigerator



Name	<input type="text" value="ultrazamrazarka -80"/>	Code	<input type="text" value="L1"/>
Maximum number of packages.	<input type="text" value="0"/>	Max.tubes	<input type="text" value="192"/>
Storage temperature.	<input type="text" value="-80"/>	resource	UltraZam
Producer	<input type="text" value="LabMind"/>	type	<input type="text" value="C"/>
pack.mask	<input type="text"/>	last number	<input type="text" value="0"/>
sample mask	<input type="text"/>	last number	<input type="text" value="0"/>
		start	<input type="text" value="0"/>
		start	<input type="text" value="0"/>
attention <input type="text"/>			
added BB3			
<input type="button" value="+"/> <input type="button" value=">"/> <input type="button" value="-"/>			
Status: <input type="radio"/> OK <input type="radio"/> block <input type="radio"/> error <input type="radio"/> none			
<input type="button" value="Changes"/>		<input type="button" value="Form"/>	
<input type="button" value="Note"/>		<input type="button" value="Template"/>	
<input type="button" value="Conditions"/>		<input type="button" value="Hiking"/>	
<input type="button" value="Save"/>		<input type="button" value="Abort"/>	

Name freezers, refrigerators, cold.

When editing an item related to a specimen storage device, pay attention to relation to the resource.
Environmental conditions monitoring device is also related to resources.
The above-mentioned actions facilitate tube/vial storage history reporting.

Mothers and daughters

The screenshot shows a window titled "Mothers and daughters" with a close button (X) in the top right corner. Below the title bar, there are two tabs: "daughters" (selected) and "children". To the right of the tabs is a filter bar with "All" selected and several status filters: "OK" (green), "blockade" (yellow), "error" (red), "?", and "hid." (purple). On the left, a tree view shows a hierarchy of samples: "0011AFA82 (DNA)" is expanded to show "0011AFA81 (ślina)", "0011AFA84 (DNA)", "0011AFA85 (kozuszek)", and "0011AFA83 (DNA)". On the right, a table displays data for the selected sample "0011AFA83".

2D	Pos.	num	type	material	No.DNA3	proband	Commission
0011AFA81	A2	2		ślina	~000E	Koleszko Kajko	K190223042
0011AFA83	A4	4		DNA		Nowak Piotr	

The window presents the tree of connections between samples.
It opens after clicking on the mother sample code.

By design, all tree samples should be from the same probe.
The program allows the change of the proband, i.e. application in a different context.

Mothers and daughters can be exported in the reports module (field ID_BB6) and imported as part of the subbase system.

The "daughters-children" filter switches between the view of daughters of the selected sample and the view of all descendants of that sample.

The "status" filter normally limits the sample list to a specific stratus.

Biobanks - Plate

Plate

2000039192 96/78/18
2014.12.03 12:23:31 weighed: 2018.04.27

lack of order

Colour

A1 5DA12 456<1500	A2 5D9F6 DNA	A3 5D9E1 bloczek	A4 5DA07 bloczek	A5 5D9E7 bloczek	A6	A7	A8 5D9D3 bloczek	A9 5D9CC	A10 5D9D6	A11	A12
B1 5DA0D	B2 5DA19	B3 5DA17 DNA	B4	B5 5DA00	B6 5D9C2	B7	B8	B9 5D9F8 DNA	B10 5D9C8	B11 5D9CB	B12
C1	C2 5D9DE DNA	C3 5D9C4 DNA	C4 5D9FF	C5 5D9F1	C6 5D9EA	C7 5D9E2 surowica	C8 5D9FB bloczek	C9 5DA0C bloczek	C10 5D9D0 bloczek	C11	C12
D1	D2 5D9D1	D3 5D9F0	D4 5D9C0 EDTA	D5 5D9E4 EDTA	D6 5D9ED EDTA	D7 5D9EC EDTA	D8 5D9FE	D9 5D9EE	D10 5D9C1	D11 5DA02	D12
E1 5D9FC	E2 5D9FD	E3 5D9CD	E4 5D9DA	E5 5D9F3	E6 5D9EF	E7 5DA04	E8 5DA10	E9 5DA0E	E10 5DA1E	E11	E12 5DA16
F1 5D9E5	F2 5D9E6	F3	F4 5D9DC EDTA	F5 5DA1A EDTA	F6 5DA1F EDTA	F7 5DA06 EDTA	F8 5DA18	F9 5D9CF	F10 5D9F5	F11 5DA1C	F12 5D9D8
G1 5D9F4	G2 5D9C3	G3 5DA08	G4 5DA09	G5 5D9DD	G6 5D9E3	G7 5DA14	G8 5D9E0	G9 5D9C5	G10 5DA01	G11	G12
H1 5D9F9	H2 5DA0B	H3 5DA13	H4 5D9D9	H5 5DA0F	H6 5DA03	H7 5D9CA	H8 5D9E9	H9 5DA0A	H10 5D9C9	H11	H12 5DA15

Status

OK block error none

This window is intended to streamline handling of a whole plate.

Plate size or the number of vials in rows and columns is given as plate parameter in biobank. The default size may be entered in Configuration.

Here, the software operates 1D and 2D scanners. Whole plate 2D scanners are recommended, e.g. <http://labmind.pl/skaner/>

The software is compatible with 1D and 2D scanners by any manufacturer that emulate keyboard.

Whole plate 2D scanners by LabMind, Micronic, and Fluidx have been tested.

Waste-paper bin icon is used to remove tube/vial from a plate but not the database. After removal, the tube/vial and its data are kept in the database.

Note!

If LabMind 2D scanner is used, apart from 2D vial code, it reads its manufacturer, code type, and checksum.

The additional vial data is necessary because it is always possible for biobanks to exchange vials

or buy vials by another manufacturer. Double instances of "the same" vial may then occur.

Colours

Colors ×

	Formula
Text 1	empty(BB6->ID_OS1)
Text 2	left(BB6->MAT,2)=='kr'
Text 3	left(BB6->MAT,2)=='ko'
Text 4	left(BB6->MAT,2)=='mo'
Text 5	left(BB6->MAT,2)=='su'
Text 6	left(BB6->MAT,2)=='os'
Text 7	left(BB6->MAT,2)=='tk'
Text 8	left(BB6->MAT,2)=='DN'
Text 9	empty(BB6->ID_OS1)
10	
11	
12	
13	
14	
15	
16	

Window "Colours" is used to define the background color and text.

The left mouse button to color the control allows you to select the background color, and the right mouse button text color.

An example of the definition of a window przedstawij±ce plate in the biobank.

In the formula written expression that returns true or false.
If the result of the expression is "true", it assumes control defined colors, and as "false", the program proceeds to check the next string.

Given the above algorithm, the order is as defined, because if, for example, the first expression will always zwracało "truth" it never will be checked next.

Screenshot contains examples deficji colors with formulas.

Submission of expressions are identical to those used in reports, forms, etc.

A brief explanation of the sample formulas:

empty (BB6-> ID_OS1) - the vial is not assigned a patient?

left (BB6-> MAT, 2) == 'kr' - the name of the material in the vial starts with the letters "kr"?

!empty (BB6-> ID_OS1) - whether the vial assigned to the patient?

Scanner 2D

The screenshot shows the 'Scanner 2D' application window. At the top, there is a 'From file' field containing the path 'C:\BBMS\EXE\3000084374.csv' and a 'No first line' checkbox. Below this is a table with 7 columns labeled Col1 through Col7. The table contains five rows of data, each representing a different sample (A01 to E01). The data in the table is as follows:

Col1	Col2	Col3	Col4	Col5	Col6	Col7
A01	4020377738	OK	0	3000084374	20200616	Line End
B01	4020377750	OK	0	3000084374	20200616	Line End
C01	4020377762	OK	0	3000084374	20200616	Line End
D01	4020377774	OK	0	3000084374	20200616	Line End
E01	4020377786	OK	0	3000084374	20200616	Line End

Below the table is the 'Import file format' section. It contains six dropdown menus for Col1 through Col6. Col1 is set to 'Pos. (BB6.ADR)', Col2 to '2D (BB6.NZ)', and the others are empty. There are two checkboxes: 'Is the code in the file name?' (checked) and 'Do you enable redirection? A1->H12, A2->H11, A3->H10,.....H12->A1' (checked). At the bottom right are 'Save' and 'Abort' buttons.

The cooperation of BBMS with whole plate scanners mainly consists in importing data from a text file. There are various file formats and most often incompatible with the accepted *posycja / code* convention.

In this pane, you can define columns that contain the sample position and code for a specific file extension.

In addition to this basic data, you can specify other fields of the BB6 table and use a conversion formula.

Data Import formatting does not apply to LabMind scanners and during an RS232 connection.

Hand Over

Transmission ×

Destination

The person giving

The person receiving

2020.07.05

Destination transfer / shift.

Hand over to another person or organisational unit involves moving a tree element to another branch.

If organisational units belong to different facilities upon handover, persons and dates need to be entered.

Completion of data

Completion of data X

mask 0011AFA82

Tables	Fomula(val)	Fields
<input type="text"/>	dtoc(date())+" "+time()	<input type="text" value="DTS scan"/> <input type="checkbox"/> Overwrite data?
<input type="text"/>	if(left(val,2)='SA','Fluidx','Micronic')	<input type="text" value="ID_KN1 producer"/> <input type="checkbox"/> Overwrite data?
<input type="text"/>	date()	<input type="text" value="DAT Date"/> <input checked="" type="checkbox"/> Overwrite data?
<input type="text"/>	"EDTA"	<input type="text" value="MAT material"/> <input type="checkbox"/> Overwrite data?

The window contains definitions of automatic data completion in the window.
Formulas will be activated if there is no scan date.

Based on the code form, a specific mask abbreviation is generated, allowing the preparation of definitions for codes differing in length or sperators.

Laboratories

The screenshot shows a software interface titled 'Laboratories'. On the left is a tree view showing a hierarchy: 'Laboratories' -> 'Zaklad Genetyki' -> 'Molekulame' -> '2014.09' -> '1234567' -> '12345'. On the right is a table with the following data:

examination	Technique.	material	attention	doc.	el.	note	modification	added
BRCA1	t1	DNA				6	2019.12.08 22:42:24	2018.04.28 21:47:54
Horba		krew EDTA				27	2019.12.13 13:31:36	2019.12.13 13:31:20
P16							2020.06.25 17:47:50	2018.04.28 21:47:54
W								

Structure of laboratories that carry out ordered tests and test details.

Laboratories - Edit

Laboratory - research.



examination Horiba				material krew EDTA				
WBC	9.04	10 ³ /uL	RBC	4.69	10 ⁶ /uL	HGB	13.4	g/dL
HCT	40.1	%	MCV	85.4	um ³	MCH	28.6	pg
MCHC	33.5	g/dL	RDW-CV	13.4	%	RDW-SD	42.8	um ³
PLT	262	10 ³ /uL	PDI	19.0	um ³	PCT	0.28	%
MPV	10.8	um ³	P-LCC	103	10 ³ /uL	P-LCR	39.5	%
LYM%	0.7	%	MON%	0.0	%	NEU%	17.0	%
EOS%	82.3	%	LIC%	0.3	%	BAS%	0.0	%
LYM#	0.06	10 ³ /uL	NEU#	1.53	10 ³ /uL	MON#	0.00	10 ³ /uL
EOS#	7.42	10 ³ /uL	LIC#	0.03	10 ³ /uL	BAS#	0.00	10 ³ /uL

attention

added LAG

+ > -

Status: ● OK ● block ● error ● none

Note Fom Hiking

Changes Template Save Abort

examination

The parameter value fields of the tested material are dynamic and are defined in the materials.
 The field labels correspond to the parameter names and the order corresponds to the order in the materials.
 The window will fit 30 halves.

Labels can be colored depending on the thresholds defined in the material parameters.

Reagents

No.	Name	place	Code	product	series	Producer	Supplier
✓ 1	Insulation kits		11223344		44332214	nibynic	nibynic

Reagent warehouse has different characteristics to cargo store. Each reagent has a form that cannot be defined as a unit unless you accept one package as a unit.

Reagent warehouse features:

- reagents are usually stored in freezers, so environmental conditions monitoring is necessary,
- no quantity in store item, each item is a separate container,
- no monitoring of reagent quantity in container, technically impossible,
- consumption by deliveries, delivery FIFO, must be applied,
- option to release and accept the same container multiple times,
- each reagent has an expiry date that should be used to order delivery FIFO,
- each reagent has its serial or lot number

Upon reagent acceptance, two items are scanned, product code and serial code.

For thought is to code reagents with codes, allowing for unambiguous identification of each container.

Reagents - Edit

Reagents - Packaging

Name Colour

place Quantity

Mother

Code

Katalog code series

Producer supplier

Date validity

Automatic status change for quantity?

Intelligent change of unit of measure - as few digits of quantity as possible.

attention

added OD5

test

Please note the use of your own barcode and its scanning into the "Code" field.

For a reagent, one of the most important pieces of information is the expiration date.

A document can be attached to each item in electronic form.

The [Mother] button allows you to associate it with the parent - source reagent.

"Automatic change of status ..." - after selecting, if the zero quantitative status is reached, the program will change the status to "block"

"Intelligent change of the unit of measure ..." - when calculating the quantitative status of the reagent, the program will select the unit of measure containing the fewest digits before the decimal point and without the power of ^3.

Reagent

Reagent

Operation:

Release Acceptance Movement Takeover

Code

>> 11223344

series 44332214 Is the volume or quantity?

Catalog **Insulation kits 1**

Name Insulation kits 1

Producer Niby Date 2013.10.10

Supplier LabMind validity 2018.10.16

place jakieś computer **LABMIND**

User **Admin** Save Abort

Note

code series

An interactive window was introduced to speed up the operation.

All activities can also be performed in the tree by editing.

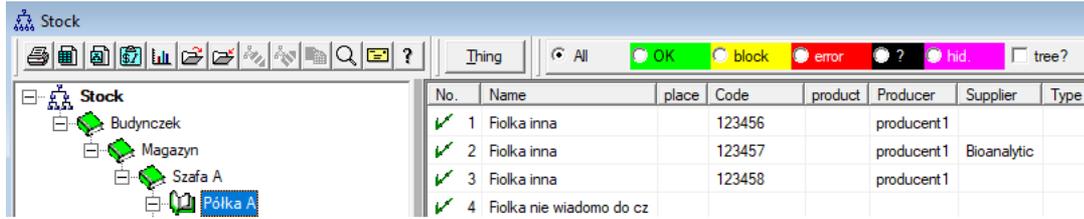
The "Summarize" shortcut menu command also works in the tree to control the states.

Window controls are turned on, off, or hidden depending on what you are doing.

Each package can be assigned a catalog item, then the quantity states will be saved there.

If things don't go your way, you can correct the data in the tree at the wrapper or history level.

Warehouse



No.	Name	place	Code	product	Producer	Supplier	Type
✓ 1	Fiolka inna		123456		producent1		
✓ 2	Fiolka inna		123457		producent1	Bioanalytic	
✓ 3	Fiolka inna		123458		producent1		
✓ 4	Fiolka nie wiadomo do cz						

In BBMS, warehouse is just a conventional concept. It is not a warehouse as understood in the business domain.

Its basic characteristics are:

- quantities are always expressed in pieces,
- descending collective packaging is used: collective packaging may include smaller collective packaging
- the concept of a "piece" in a warehouse needs to be defined. There is no point to treat the smallest element as a piece. It can be for example a bag with some small elements
- consumption by deliveries, delivery FIFO, must be applied at the warehouse
- option to release and accept the same article multiple times
- minimum, alert quantities must be defined for the warehouse
- almost every article has an expiry date that should be used to put delivery FIFO in order

The basic operation in the warehouse is scanning 1D codes. In exceptional cases, i.e. new article, non-standard quantity, or correction, you have to use a keyboard to type in information. If an article is not coded, warehouse operations are significantly hindered.

Each article should have at least one code it can be identified with.

Using reports, you can make summaries for the warehouse(s), e.g. alarm states, exceeded expiry date, etc.

The Warehouse module facilitates construction of warehouse(s) structure in the form of a tree as regards location.

It is not a typical business warehouse management.

BBMS is intended to be used by biobanks, so warehouse operations were made to suit the needs of biobanks and laboratories.

The software automatically sums up the amounts available in the warehouse.

Warehouse - Edit

Magazine - balení.



Name	Fiolka inna6		
place			
Mother	X	Fiolka inna5	Colour X
Code	87687585	[Barcode] [?] [!]	
Catalog	12345	type	
code series		supplier	LabMind
Date	2025.04.24	Producer	LabMind
validity	2025.04.24	min.	0 <input type="checkbox"/> Does it apply to packaging?
<input checked="" type="checkbox"/> Automatic status change for quantity?			
Catalog	X	Fiolka inna888	
attention			
package			
added MA5			
tst1			
+ > - ± ...			
Status:	Form Hiking		
<input checked="" type="radio"/> OK <input type="radio"/> block <input type="radio"/> error <input type="radio"/> none	Note Template Conditions		
	Changes Save Abort		
<i>Name</i>			

The most important parameters of the product: code, production dates and deadlines, and quantity. Useful reports on the status of warehouses and shortages in the warehouse can be built based on these parameters.

A document can be attached to each item in electronic form.

The [Mother] button allows you to associate a warehouse item with a parent item. After clicking on the associated item, a window with a tree and a list of connections will open. If the word [Mother] does not match, you can change it with the right mouse button.

Subject

Thing

Operation:

Release Acceptance Movement Takeover

Code

>> 123456

Number of accepted or released: Does it apply to packaging?

Catalog **Fiolka inna**

Name Fiolka inna

Producer producent1 Date 2013.12.14

Supplier LabMind validity 2018.12.14

place computer **LABMIND**

User **Admin** Save Abort

Note

Number of accepted or released.

An interactive window was introduced to speed up the operation.

All activities can also be performed in the tree by editing.

The "Summarize" shortcut menu command also works in the tree to control the states.

Window controls are turned on, off, or hidden depending on what you are doing.

Each package can be assigned a catalog item, then the quantity states will be saved there.

If things don't go your way, you can correct the data in the tree at the wrapper or history level.

Counterparties

Counterparties

All
 OK
 block
 error
 ?
 hid.

Name	payer	TIN	supplier	customer	producer	Lab	service	Biobank	Source	zip code	post
✓ LabMind		9552289931	X		X		X			71-001	Szczecin
✓ Lenovo					X						
✓ Liebherr					X						
✓ Micronic					X						
✓ msi					X						
✓ New Brunswick					X						
✓ NFZ	X										
✓ Perkin					X		X				
✓ Polgen		725-14-47-400	X							92-516	Łódź
✓ Poradnia									X		
✓ producent1					X						
✓ Sanyo					X						
✓ sdaf				X							

The above list is built by adding items in the window or edit windows with fields containing the contractor's name.

Within the BBMS network, it can be updated with data from other biobanks and laboratories.

Marking a contractor as, for example, "producer" causes it to appear on the list of manufacturers and similarly for other groups of contractors.

Transactor

Name *

*

BBMS

* data required

TIN

REG

KRS

Full name

description

EU TE code

Location - post office

locality

Address

Country

Tel.

prefix

e-mail *

Code

www

Bank

- Is a biobank?
- Is the lab ?
- Do payer?
- Is the supplier or seller?
- Is the customer?
- Is the producer?
- Is the service?
- Is the material supplier ?

Mother

added KN1

text date logic numeric

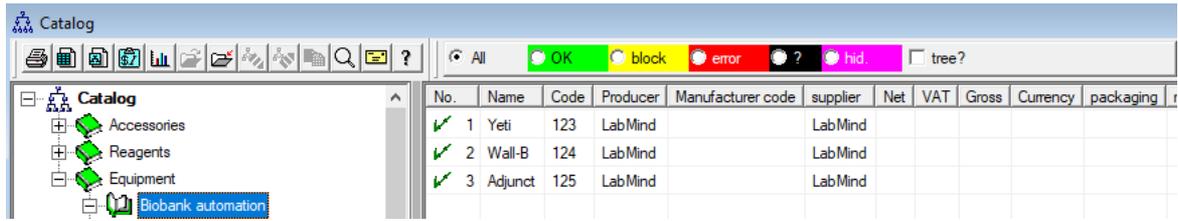
time list

Status:

OK block error none

Name partner: suppliers, resellers, manufacturer, customer, payer.

Catalog



The screenshot shows a software interface titled "Catalog". On the left is a tree view with categories: Accessories, Reagents, Equipment, and Biobank automation. On the right is a table with columns: No., Name, Code, Producer, Manufacturer code, supplier, Net, VAT, Gross, Currency, and packaging. The table contains three rows of data.

No.	Name	Code	Producer	Manufacturer code	supplier	Net	VAT	Gross	Currency	packaging
✓ 1	Yeti	123	LabMind		LabMind					
✓ 2	Wall-B	124	LabMind		LabMind					
✓ 3	Adjunct	125	LabMind		LabMind					

The catalog is a list of articles, consumables, reagents, and spare parts.

Catalog - Edit

Katalog - pozice. X

Name

Mother X

Code 

Manufacturer code Producer  Colour X

product code Fluidx

Net VAT Gross Currency

supplier packaging UM min.

The external Dimensions int.

attention

added KT3

test1 test2

Status: OK block error none

Item Name Directory

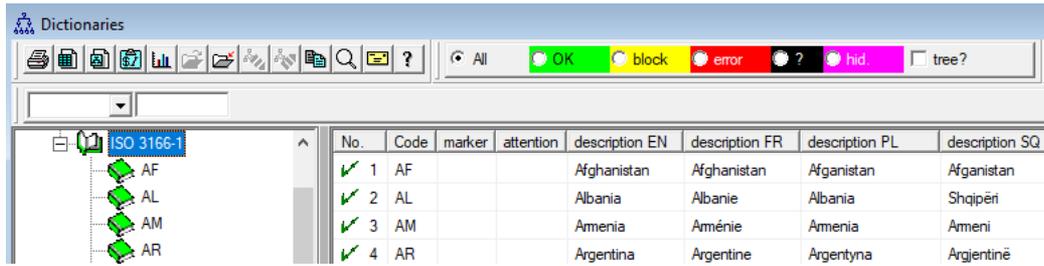
Editing a catalog entry.

The [Mother] button allows you to associate a catalog entry with a parent entry.

Clicking on the associated entry will open a window with a tree and a list of associations.

If the word [Mother] does not match, you can change it with the right mouse button.

Dictionaries



The screenshot shows a software window titled 'Dictionaries'. The interface includes a toolbar with various icons and a status bar with colored buttons labeled 'OK', 'block', 'error', '?', 'hid.', and 'tree?'. On the left, a tree view shows a folder 'ISO 3166-1' containing sub-items 'AF', 'AL', 'AM', and 'AR'. On the right, a table displays the following data:

No.	Code	marker	attention	description EN	description FR	description PL	description SQ
✓ 1	AF			Afghanistan	Afghanistan	Afganistan	Afganistan
✓ 2	AL			Albania	Albanie	Albania	Shqipëri
✓ 3	AM			Armenia	Arménie	Armenia	Armeni
✓ 4	AR			Argentina	Argentine	Argentyna	Argjentinë

The window is used to register any codes.

Data can be extracted in surveys and forms.

During software update, the code base is downloaded, which you can import by clicking on the Import command and pointing to the Help folder.

Dictionaries - edition

Dictionaries codes 2. ×

Code marker

English

Argentina

▾

Argentina

▾

Argentina

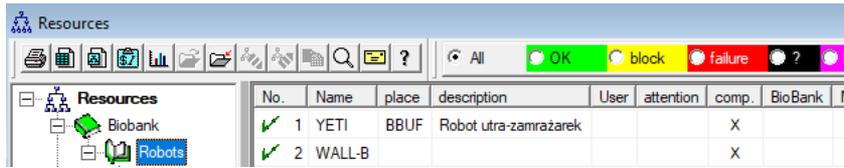
attention

Status: OK block error none

Code

The construction of international dictionaries is a duty to ensure proper communication and standardize concepts.

Resources



The screenshot shows the 'Resources' module interface. At the top, there is a toolbar with various icons and a status bar with colored indicators for 'OK' (green), 'block' (yellow), 'failure' (red), and '?' (purple). Below the toolbar is a tree view on the left with 'Resources' expanded to show 'Biobank' and 'Robots'. The main area contains a table with the following data:

No.	Name	place	description	User	attention	comp.	BioBank	M
✓ 1	YETI	BBUF	Robot ultra-zamražarek			X		
✓ 2	WALL-B					X		

Equipment and apparatus.

Every biobank and laboratory has equipment resources.

Data in the Resources module is used in many other modules.

It is actually a list of equipment actively used for specimen storage and laboratory tests.

Resources are used by Biobanks, Monitoring, Reagents, and Processes modules.

The most important elements to be entered in this list are: cooling equipment and computers.

For each resource, a history of material consumption, inspections, and breakdowns can be recorded.

You can deduce a lot about a biobank or laboratory by looking at its resources.

It is a record not only in the terms of book keeping but primarily a list of manageable equipment with its operational history and record of inspections, repairs, etc.

Resources - Edit

Resources - device

Name place Code

description

Mother

IN The IP address MAC

User BioBank Does the device is a

Is the device being monitored? Robot A feeding point No tasks

Can the resource be reserved? Add to consumption list.

Do you run "SNMP Manager" for "SNMP Trap" on this computer?

Catalog

Producer supplier Service

Serial number type failure code OLE

attention Code printer barcode printer 2

added ZA3

text date logic numeric time

list test2

+ > - ±

Status: OK block failure no

Form Note * History

Template Changes Save

Name

Based on the set of options: computer, biobank, monitoring, etc., selection lists are created.

The "SNMP Manager" option enables the ability to receive "SNMP TRAP" messages.
If, despite enabling, SNMP transmission does not work, then "FireWall" should be checked.
According to the SNMP standard, port 162 is opened.

The [Mother] button allows you to associate a resource with a parent resource.
After clicking on the associated resource, a window with a tree and a list of associations will open.
If the word [Mother] does not respond, you can change it with the right mouse button.

Materials

No.	Name	default	description	attention	type	UM	Plate	critical min	min	max	max critic
✓ 1	WBC	9			A	10 ³ /uL		3.00	3.50	10	13
✓ 2	RBC				B	10 ⁶ /uL		3,5	3,80	5,20	6,50

The introduction of a list of materials streamline edit the properties of a sample in a biobank. Each material can be assigned parameters and their units of measure.

Materials - edition

Materials - parameters and properties. X

Name

description

type default UM

critical min	min	max	max critical
<input type="text" value="3.00"/>	<input type="text" value="3.50"/>	<input type="text" value="10"/>	<input type="text" value="13"/>

condition

critical min	min	max	max critical
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

condition

attention Do you show in the "Tile" window?

+ > -

Status: OK block error none

Note Changes Save Abort Hiking

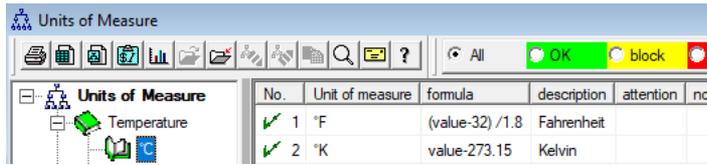
Name

The parameter type is its one-character identifier, which is used in the measurement records.
It should be unique within the material and must not be changed if registration has already taken place anywhere.

The minimum and maximum values result from the norms for the parameter.
After clicking the left mouse button on the label, you can change the color to exceed the parameter value.
Color definitions are used in other modules, e.g. laboratories, biobank, ...

The units of measurement are written using ASCII characters and therefore cannot be used, e.g. 3

Units of Measure



No.	Unit of measure	formula	description	attention	no
✓ 1	*F	(value-32) /1.8	Fahrenheit		
✓ 2	*K	value-273.15	Kelvin		

The record of units of measure allows you to create a selection list for all modules with a unit of measure field. In addition, it contains conversion formulas used for standardizing measurement results.

Units of Measure - edition

Units of measurement - secondary. ×

Unit of measure

description

formula $^{\circ}\text{C} = f(^{\circ}\text{F})$

attention

Status: OK block error none

Converted unit of measure.

The unit conversion expression is built according to the syntax used in the other BBMS modules.

The value in the unit of measure entered in this window is substituted for the value "value".
The conversion result should be consistent with one measure of the parent window.

Work flows



The screenshot shows a software window titled 'Schemes'. It features a toolbar with various icons and a status bar with colored buttons labeled 'OK', 'block', 'error', '?', and 'hid'. Below the toolbar is a tree view showing a folder named 'Schemes' containing a sub-item 'BRCA1,P16,NOD2'. To the right of the tree view is a table with the following data:

No.	Name	place	application	input	output	Source.
✓ 1	Pobranie					kwes,šina

Work flows are used to define tests, necessary materials, and stages.

For example, when creating a BRCA1,P16, NOD2 work flow, you make the software add independent controls to select BRCA, P16, and NOD2 tests with the same material to be sampled and the same stages.

You can find many more examples in test database: TEST.

Work flow - Edit

Schemes - study ×

Research

place

Is it additional for the examination when editing the visit or order?

list of techniques

message

attention

+ > -

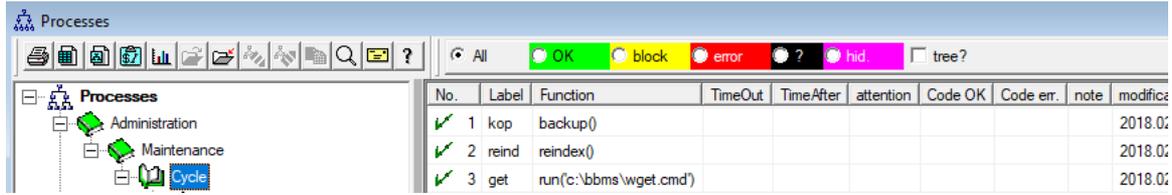
Status: OK block error none

Enter the name of the medical test or list.

Tests and necessary materials.

Here, you can define types of tests ordered in laboratory and necessary materials.

Processes



The screenshot shows a software interface titled 'Processes'. On the left is a tree view with three main categories: 'Administration', 'Maintenance', and 'Cycle'. On the right is a table with the following data:

No.	Label	Function	TimeOut	TimeAfter	attention	Code OK	Code err.	note	modifica
✓ 1	kop	backup()							2018.0:
✓ 2	reind	reindex()							2018.0:
✓ 3	get	run(c:\bbms\wget.cmd)							2018.0:

Processes make up a tree:

Group: is an arranging element, it provides a general division (e.g. by task type) of all processes.

Process: a set of executable procedures. A process is not triggered by an event. It just arranges procedures and is made up of independent procedures.

E.g. the Isolation process is made up of multiple procedures triggered by a certain event, e.g. completion of a previous process, scanning, activation of a device, etc.

Procedure: a task triggered by an event or another procedure. Procedures are triggered in Alerts. Procedures are triggered by a Robot.

E.g. file backup procedure for a remote computer involves sequential booting, copying of data, and computer shutdown, if required.

Function: basic step in a procedure.

Each step, execution of a function results in a success or failure.

If there is a success, the software proceeds to the next function. In the case of a failure, the function is repeated so long as to achieve a success or until time out.

Processes - Edit

Processes - functions and procedures ×

No. Label

Function
UpGrade()

TimeOut TimeAfter

Code OK Code err.

attention

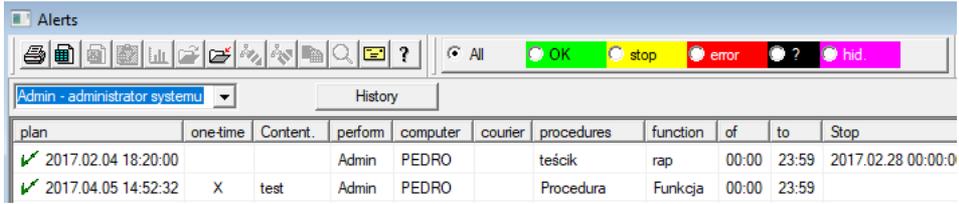
Status: OK block error none

The label to which to jump through Go To ()

You can activate a number of integrated functions in processes.

A single row may contain one or many functions connected with “.or.” or “.and.”
You can use any function of the CLIPPER language (similar to Basic and Pascal).

Task scheduler



plan	one-time	Content.	perform	computer	courier	procedures	function	of	to	Stop
✓ 2017.02.04 18:20:00			Admin	PEDRO		tešcik	rap	00:00	23:59	2017.02.28 00:00:0
✓ 2017.04.05 14:52:32	X	test	Admin	PEDRO		Procedura	Funkcja	00:00	23:59	

Automatic implementation of commands.

The purpose of the module is to perform a predefined action within a set time.

Alert list item to be performed may be added automatically in another BBMS module or manually.

Each alert has alert author, the user who prepared it and alert recipient, the person for whom it will be run.

These and other pieces of data can be edited.

Task scheduler - edition

Task scheduler - edition

luty 2020							
	pon	wt	śr	czw	pt	sob	niedz
5	27	28	29	30	31	1	2
6	3	4	5	6	7	8	9
7	10	11	12	13	14	15	16
8	17	18	19	20	21	22	23
9	24	25	26	27	28	29	1
10	2	3	4	5	6	7	8

Dzisiaj: 2021-08-03

21:39 one-time

perform

Admin

computer

LABMIND

Cycle:

- minute
- hourly
- daily
- weekly
- monthly
- yearly

period 1

of 00:00 to 23:59

Stop 2021.08.03

Attempt 0

Monday
 Tuesday
 Wednesday
 Thursday
 Friday
 Saturday
 Sunday

The message text

Process: LK procedures: temp function: temp SNMP Trap:

Notify. attention:

Notification only after runtime error.

Status: done run error none

Changes

Save Abort

Scheduler tasks can be divided into several types:

- one-time or cyclical
- messages or processes
- manual or automatic

While the first kind does not need to be explained, the next ones require a few words of explanation.

Alerts allow you to display a message at a specified time. The message may be the result of an event or it may be prepared manually. In each alert, you can select time parameters and indicate the person to whom the message is to appear. If the message is to appear after the event, it must be defined using the Courier (this is the notification system within the BBMS system).

The software supports "SNMP TRAP".

You can use these calls to run tasks, and within a sentence, processes / procedures / functions.

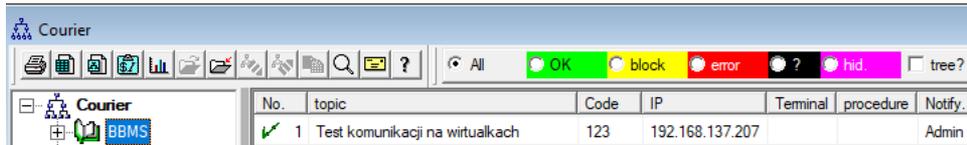
In this window, the sender of the "SNMP TRAP" frame is indicated.

The receipt is marked when editing resources, i.e. computer properties.

As a result of some event, the sender sends "SNMP TRAP" to the recipient, and the recipient performs the task that has the sender's address entered.

The mechanism is therefore simple and useful in situations where the task is immediately completed after an event, e.g. opening the door, exceeding the permissible temperature, etc.

Courier



The screenshot shows the Courier software interface. At the top, there is a toolbar with various icons and a status bar with colored buttons labeled 'OK', 'block', 'error', '?', 'hid.', and 'tree?'. Below the toolbar is a tree view on the left with 'Courier' and 'BBMS' folders. The main area displays a table with the following data:

No.	topic	Code	IP	Terminal	procedure	Notify.
✓ 1	Test komunikacji na wirtualkach	123	192.168.137.207			Admin

Event notification.

BMS is an event system. Each action, measurement, etc. is an event that results in a success, a failure, or goes on.

A reaction may be assigned to each event result using the Courier. The procedure is as follows: an event took place; the software retrieves a courier code for success or failure and checks the Courier module.

Here, you can define what happens after a certain code is sent. The reaction may involve activation of a process, message notification, report notification, etc.

The Courier has a list of actions performed after an event.

If an event has no courier code assigned, there is no reaction.

Courier is used as a relay in communication between any two devices in biobank/laboratory and the management system.

Actions are made based on messages.

The Courier is an important solution for biobank and laboratory automation as it facilitates building complex, multitask systems based on event handling.

E-mail notifications work when smtp.bbms.pl server is not blocked and SMS notifications work when SMS gate server is available at 88.199.145.52.

The above-mentioned blocks may be activated on a computer with running BBMS or some traffic control point (access point).

For this reason, please first contact a relevant IT unit in case of problems.

Courier - Edit

Courier - Topics: allocation procedure code and the sender's mes [X]

topic:

Code: IP: Terminal:

Notify: **Admin**

procedure:

attention:

Status: OK block error none

Note Changes

Save Abort

Post notification system

Editing Courier parameters depends on the current location in the tree.

In this edit window, you can activate and deactivate fields and each field has a description displayed if you hover over it. At the "Courier – Subject" tree level, there is the most important part of Courier activity: definition of action after a specific code.

Monitoring

No.	Name	resource	port	UM	Multiplier	cycle min.	cycle	precision	change	R.min	Min	c. min
✓ 1	DHT-H		ia14	%	0,1	60	360	1	X			
✓ 2	DHT-T		ia13	°C	0,1	60	360	1	X			
✓ 3	LK-T		ia0	°C	0,1	60	60	1	X			
✓ 4	LK-U		ia1	V	0,1	60	60	1	X			

Monitoring of environmental conditions applies to biobank and laboratory elements. Monitored place is strictly defined by indicating a resource, i.e. an element of biobank or laboratory included in the Resources module. The purpose of this module is to work with environmental conditions monitoring devices to acquire all necessary data. Values to be monitored are not predefined. They can be defined by the user. Monitoring can be carried out automatically, using Alerts or manually in this module.

Currently, the software communicates with the LanKontroler (LK) module and Q-MSystem loggers (Q-M). As opposed to other solutions, LK can handle virtually any parameter, not just temperature, depending on sensors used. The following elements are used: temperature sensors, range -200°C to +2200°C; relative humidity; CO₂; O₂; CO sensors, etc. and actuators such as relays, motors, servos, etc. LK includes a relay to energise a device. It has also digital inputs to connect end switches: freezer door open, laboratory door open, etc.

Q-M is a system for wireless logging of temperature, usually used to monitor ultra low temperature freezers.

In BBMS, data may be acquired manually, automatically, or using the Robot application.

Monitoring - Edit

Monitoring - measuring point (fridge, freezer, ...)

Name

port resource

cycle min. cycle change

Calibration:

scaling Multiplier Subtrahend

conversion inp1 inp2 out1 out2

formula

precision UM

Min c. min Max cour.max

R.min R.max port s.

Hide from the conditions window?

attention

+ > - ± ...

LarKontroler

Status: OK block error none

Note Changes

Save Abort

Name

The most important monitoring data can be found on Monitoring – measuring point (edit window title) tree level.

When you hover your mouse over a form field, its description is displayed.

Electronic documents may be attached to each item.

LanKontroler

LanKontroler



IP	192.168.0.76	<input type="button" value="Read"/>	out0 <input type="checkbox"/>	out1 <input type="checkbox"/>	out2 <input type="checkbox"/>	out3 <input type="checkbox"/>	out4 <input type="checkbox"/>	out5 <input type="checkbox"/>	<input type="button" value="Close"/>
sec0	44	inp1 641	tem 3200	power2 4984	diffsel 0*0*0*0*0				
sec1	41	inp2 31	ind 15	power3 4984	co2 -1				
sec2	20	inp3 20	dth0 184	power4 4984	bm280p 100260				
sec3	43	inp4 19	dth1 650	energy1 5635158	pid1 10				
sec4	1593589770	inp5 31	ds1 215	energy2 5635158	pid7 25				
out	0	inp6 30	ds2 -600	energy3 5635158					
out0	0	inpp1 -7060	ds3 -600	energy4 5635158					
out1	0	inpp2 3	ds4 -600	pm1 -1					
out2	0	inpp3 1	ds5 -600	pm2 -1					
out3	0	inpp4 1	ds6 -600	pm4 -1					
out4	0	inpp5 3	ds7 -600	pm10 -1					
out5	0	inpp6 3	ds8 -600	diff1 0					
pwm	0	vin 2404	power1 4984	diff2 0					

The LanKontroler module is an economical solution for monitoring environmental conditions. Can work with up to 6 digital temperature sensors, 1 digital humidity and temperature sensor and several analog sensors plus some digital sensors, e.g. open freezer. Details:

<https://tinycontrol.pl/en/>

Permissions

Each user should be identified at software start-up by logging on.

The logon process does not have to be inconvenient (there is a discussion whether or not typing a password is complicated as the software remembers user name).

You can use a scanner and scan a code from an access card.

What is important is that a specific (identified) person uses BBMS at any given time.

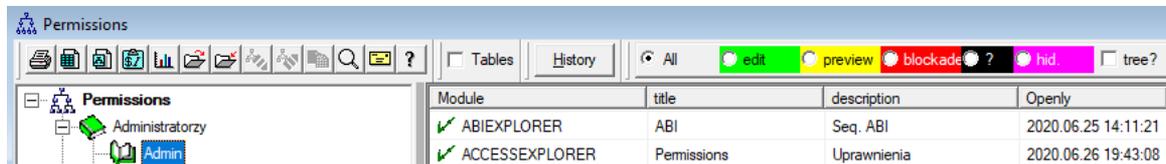
Then, this person can navigate the software within limitations of their permissions (assigned by the Administrator).

BBMS has a comprehensive permissions system. It can be divided into three groups:

1. permissions in a window/module
2. database permissions: tables and fields
3. context-dependant permissions

Each BBMS window has a technical name (visible in screen shot in the name column), which is used to verify whether a user has full permissions (preview and edit), preview permissions, or none.

The technical name was introduced due to the multi-lingual interface of BBMS. The technical name is the same in all languages, only window title changes.

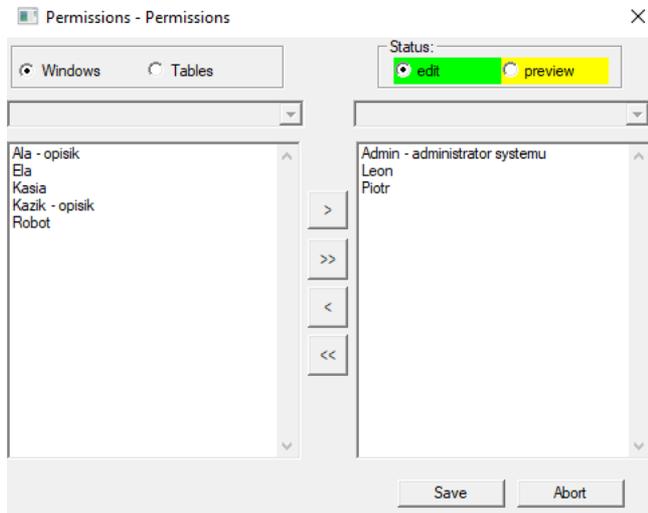


Module	title	description	Openly
✓ ABIEXPLOLER	ABI	Seq. ABI	2020.06.25 14:11:21
✓ ACCESEXPLORER	Permissions	Uprawnienia	2020.06.26 19:43:08

Permission to a window/module is decided by item status: green means editing permissions yellow – preview only, and others mean no permissions.

The second group of permissions, permissions to databases, may be assigned in each window by the administrator and the other users can only preview content.

When you click the right mouse button in a window, menu with Permissions is displayed.



Select permissions group by clicking “window” and “table”.

If you select “window”, the permissions are the same as those given in the Permissions module. If you select “table”, database permissions can be edited.

Users in the left field do not have edit or preview permissions. Users in the right field have been granted permissions.

You cannot grant edit permission without granting preview permissions. Editing is a higher-level permission than previewing.

Under the status (edit/preview), there is a table field picklist.

You may disable editing of selected table fields and hide data in selected table fields.

The third group of permissions, context, applies to the current situation or stage of a process. A number of limitations is applied automatically as this group reduces user permissions. For example, you cannot change probant in an order if the order was created automatically in the sampling window.

You can reduce editing permissions if you wish by typing TAK value for configuration parameter STABLK.

Activation of this configuration parameter results in disabling of an item with "OK" or "block" status.

Such reduction of edit permissions may significantly increase protection of data related to completion of a process.

To sum up, comprehensive permissions system offers three groups of permissions: to windows, to database, and context-dependant. Access to permissions can be gained in the Permissions module or in any window through the context menu. Context- dependant permissions may be extended by typing TAK in STABLK configuration parameter.

The method and scope of granting permissions depends on you.

Permissions - Edit

Item status is of particular importance in this module.
Depending on the context, status either gives access or blocks it.

Permissions - modules / window and right ✕

Module: ACESSEXPLORER start

description: Uprawnienia

attention:

+ > -

Status: edit preview blockade none

Note Changes

Save Abort

description

Permissions - Users ✕

Name: Kazik

description: opisik

Change Password: **** repeat: ****

Surname and: Kaziula Kazik

e-mail: kazik@poczta.pl e-mail Tel. SMS

authentication: start

Are you a doctor? Laborant? Robot? History

card / keychain: Access zones

prefix: Center

attention:

+ > - ± ...

Status: OK block error none

Note Changes

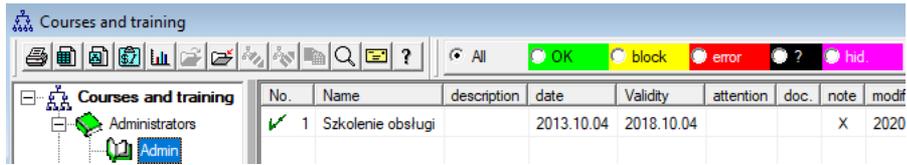
Save Abort

Name

"authentication" - enabling automatic login to BBMS by assigning an operating system or server user to a BBMS user.

"start" - restore the last opened window after BBMS startup.

Training Courses



The screenshot shows a software interface titled 'Courses and training'. It features a toolbar with various icons and a status bar with colored buttons labeled 'All', 'OK', 'block', 'error', '?', and 'hid.'. Below the toolbar is a tree view on the left with 'Courses and training' expanded to show 'Administrators' and 'Admin'. The main area contains a table with the following data:

No.	Name	description	date	Validity	attention	doc.	note	modif
✓ 1	Szkolenie obsługi		2013.10.04	2018.10.04			X	2020

Training courses, apart from the record keeping aspect, should be strictly related to permissions.

It seems only natural that access to some modules should be granted to users trained in a specific field.

Expiry dates of training certificates can be monitored with reports.

Automatic blockade of access to a specific module after expiry date of a training course is not as necessary to inhibit work. Training courses may be reported and sent to the person responsible for managing or supervising training.

Such a report may include invalid training certificates and the ones that are close to being invalid; details are easily defined in the report.

Training Courses - Edit

Permissions - courses and training ×

Name

description

date Validity

attention

+ > -

Status: OK block error none

Note Changes

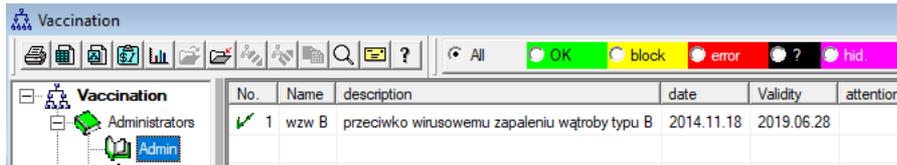
Save Abort

Name

A training course may be described with a name, date, and expiry date.

In the window, you can clip an electronic document, a training certificate.

Vaccination



The screenshot shows a software window titled 'Vaccination'. It features a toolbar with various icons and a status bar with buttons for 'All', 'OK', 'block', 'error', '?', and 'hid.'. Below the toolbar is a tree view on the left with 'Vaccination' expanded to show 'Administrators' and 'Admin'. The main area contains a table with the following data:

No.	Name	description	date	Validity	attention
✓ 1	wzw B	przeciwno wirusowemu zapaleniu wątroby typu B	2014.11.18	2019.06.28	

Vaccinations, apart from the record keeping aspect, should be strictly related to the ability to perform certain activities, i.e. to permissions.

It seems only natural that access to some modules should be granted to vaccinated users.

At first, it may seem over the top but everyone will agree that sampling of biological material should not be done by someone who has not been vaccinated.

Vaccinations may be reported and sent to the person responsible for managing or supervising vaccinations.

Such a report may include overdue vaccinations and the ones that are close to being overdue; details are defined in the report.

Vaccination - Edit

Permissions - vaccination. X

Name

description

date Validity

attention

+ > -

Status: OK block error none

Note Changes

Save Abort

Name

A vaccination may be described with a name, date, and expiry date.

In this window, you can clip an electronic document, a vaccination certificate.

Access zones

No.	Name	place	description	attention	reader	doc.	el.	note	modification
✓ 1	Air lock 1	A111						1	2019.06.26

The access zones in the biobank and laboratory can be built in the form of a tree.

If the tree branch corresponds to the access terminal, after selecting it click on [Permissions] and enable access to selected people.

If a person gets access to a zone on some level, he or she automatically gets it to higher levels.

In order to perform full integration with the Access Control System, the access terminal codes should be completed and proximity card codes on the user's pen in the System-> Permissions menu.

The integration consists in sending the prepared data in the BBMS to the Access Control System.

Access zones - edition

Access zones - room. ✕

Name

place

description

reader

attention

+ > -

Status: OK block error none

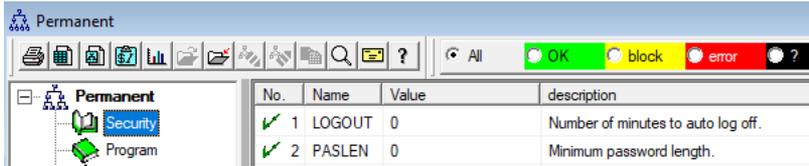
Note Changes

Save Abort

Name

Each tree item corresponding to the access terminal (reader) should contain a code compatible with the Access Control System.

Settings



In every software there is a place for some permanent information, some configuration data.

This place has a different name and structure, and the options pane is often used.

The BBMS system includes a list of constants in a dynamic form. Just when a certain constant is needed, the program adds it to the list.

This rule greatly simplified the handling of constants (options), you cannot see hundreds, but only as many as are in use. In addition, you can add new ones and remove unnecessary constants without much problem.

The constants additionally contain definitions of automatic data completions and scripts of barcode printers.

Organizing your scripts requires a few words of description.

Each script has a constant name that corresponds to the printer, eg PZEBRA, PBRADY, PSATO, PGODEX.

You can add a suffix to the name, e.g. 1,2,3 .. a, b, c etc.

and where the script is run, e.g. @ BB6, @ BB5, @OS, etc.

If there are multiple scripts for an installed printer, a selection list will appear.

There will be no scripts on the list which are assigned to other windows with @.

A barcode printer script can contain macro inserts delimited by curly braces {}.

eg for ZEBRA

^XA

^FO40.50

^FD {trim (OS1-> NZ) + "" + OS1-> IM} ^FS

^XZ

a macro in a script can genetize a part of the script

^XA

^FO40, {iif (OS1-> STA = "1", "50", "60")}

^FD {trim (OS1-> NZ) + "" + OS1-> IM} ^FS

^XZ

Settings - Edit

Permanent - values ×

Name

Value

description

attention

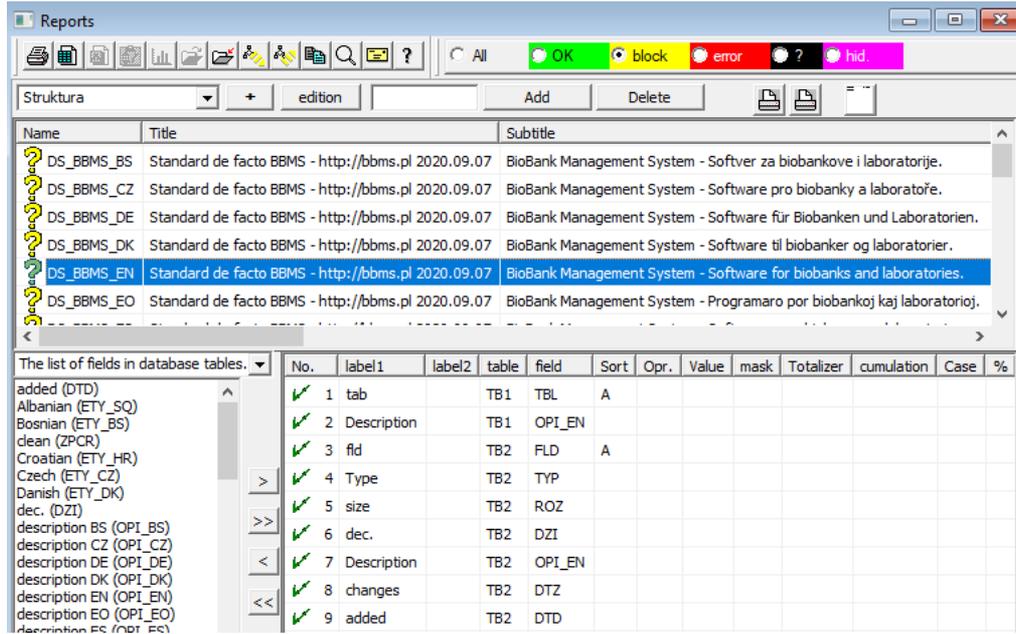
Status: OK block error none

Constant value.

Do not modify names of configuration parameters. They are automatically set by the software.

You can modify values of configuration parameters and their descriptions if necessary.

Reports



No.	label1	label2	table	field	Sort	Opr.	Value	mask	Totalizer	cumulation	Case	%
1	tab		TB1	TBL	A							
2	Description		TB1	OPI_EN								
3	fld		TB2	FLD	A							
4	Type		TB2	TYP								
5	size		TB2	ROZ								
6	dec.		TB2	DZI								
7	Description		TB2	OPI_EN								
8	changes		TB2	DTZ								
9	added		TB2	DTD								

There is no point in displaying messages as regards expired materials or vaccinations. The number of messages would be so large, it could inhibit any work with the software. The best solution is to generate a report that can be sent to multiple recipients.

A report is constructed by enabling certain fields and applying filters. The option to send report definitions as an xml file makes the job easier. Biobanks and laboratories may exchange report definitions.

Reports - Edit

Reports defined - headers



report Name User **Admin**

Title

Is the print levels? Is the denial of the filter?
 Rotate report 90 °? Do you count data?
 Turn off the title of the report Turn the page numbering.
 Print header? Is the information about the software?
 Is the ordinal number? Print current date?
 Is the ordinal number in the group? Do you disable column titles?

height Lines Sep.dat.

CSV file data separator. Quotation marks at the beginning and end of the text.

"total pages" "sum"
"from the transf" Submission

Is the report intended for export from the data window?

target ...
sheet ...
attention

Status: OK block error none

report Name

Report header parameters – printing, counting, summary mode etc.

Reports - specification

Reports defined - Specifications X

No. label1 Sort

Opr. Value Is the present percentages Calculate the average

mask Case precision

formula **BB5->STA**

Print condition? Is the formula a filter? Is a summary on each page?

Are they constant for the counted? Grouping without repetition. Add up in columns?

Enable grouping? Count without repeating. Cumulative sum?

Maximum number of copies. sheet

The formula for the sum of the conditional.

Formula highlight values in column / row

Do you highlight the poem?

attention

Title text in vertical columns?

Vertical text data?

Status:

print not print disable none

Text in the table header

User defined reports are a quick way to extract selected data from software database. Reports are divided into subject areas which are referring to the specific set of database tables. When defining a new report, select the area you are interested in and then typically add a new item and enter report name. The name will be printed next to the subject area. The next stage of defining a new report is to specify the columns from a suggested set displayed in list window. Clicking ">" or "<" includes a field in to the report or excludes it. Report column table facilitates changing header content, blocking print (inserted column may be used only with a filter), defining sorting method, and defining data filtering.

Selection of data for a report is the key element and successful limitation determines report usability. The following operators have been introduced:

" " – no operator, filter disabled

operator	text field	number field	date field
<<	text in the field is included in the value	number over 1000 smaller	date in the field at least a year earlier
<	text is smaller in alphabetical sense	number smaller	date in the field earlier
\	text is smaller or equal in alphabetical sense	number smaller or equal	date in the field earlier or the same
=	texts are equal	both equal	dates equal
#	text different	both different	date different
~	text are similar (mutually inclusive)	values close at 10%	similar dates
/	text is greater or equal in alphabetical sense	number greater or equal	date in the field later or the same
>	text greater in alphabetical sense	number greater	date in the field later
>>	value included in field text	number over 1000 greater	date in the field later over a year

Building a complex filter consists of folding the filter of the conditions for a number of selected fields. We need to know that by default it is assumed that all the conditions, which is used logiczy operator "and". If, however, there is a need to define a filter using the "or" operator, it is sufficient to use the NF field (inverse filter) in the header of the report definition. Checking this box will select the data for the report is defined in the filter is not satisfied.

Next step is to use the known relationship:

!(A and b) = (! A or ! b), where the mark "!" determined negation of the expression.

Formulas may use any basic functions of CLIPPER and VO languages, e.g. the Parameterization function. In the Value column, you can enter the "param" key word to call up a window prompting you to enter parameter value. You can use up to nine different parameters marked with subsequent numbers, e.g. param1, param8, etc.

Reports - Subject

Reports defined - Topics ×

Name

Table database

	linked table	index	relation
1	<input type="text" value="BB6 Biobanks - vials, blocks"/>	<input type="text" value="IDN+LP»\deleted()"/>	<input type="text" value="BB5->ID"/>
2	<input type="text" value="_BB6 add"/>	<input type="text" value="ID_BB6"/>	<input type="text" value="BB6->ID"/>
3	<input type="text"/>	<input type="text"/>	<input type="text"/>
4	<input type="text"/>	<input type="text"/>	<input type="text"/>
5	<input type="text"/>	<input type="text"/>	<input type="text"/>
6	<input type="text"/>	<input type="text"/>	<input type="text"/>
7	<input type="text"/>	<input type="text"/>	<input type="text"/>
8	<input type="text"/>	<input type="text"/>	<input type="text"/>
9	<input type="text"/>	<input type="text"/>	<input type="text"/>
10	<input type="text"/>	<input type="text"/>	<input type="text"/>
11	<input type="text"/>	<input type="text"/>	<input type="text"/>
12	<input type="text"/>	<input type="text"/>	<input type="text"/>

Detailed specification table.

TabSpc1

Fomula detailed specification.

Fomula detailed specification - next level.

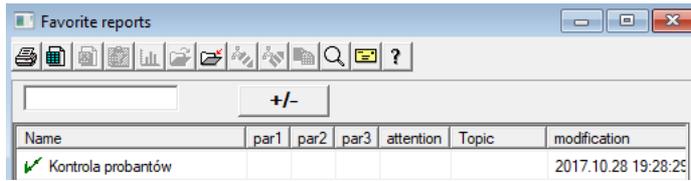
attention

Status: OK block error none

In this window, you indicate tables and their relation.

This definition is used when creating a report and executing it.

Favorite reports



The screenshot shows a window titled "Favorite reports" with a toolbar containing icons for print, save, delete, refresh, search, and help. Below the toolbar is a search input field and a "+/-" button. The main area contains a table with the following data:

Name	par1	par2	par3	attention	Topic	modification
✓ Kontrola probantów						2017.10.28 19:28:29

Not everyone needs to know how to prepare a report.

There is a window with favorite reports for everyone :)

The administrator or the report author can change the report properties.

Favorite reports - edition

Favorite reports. ×

Name

par1

par2

par3

attention

Own name of the selected report.

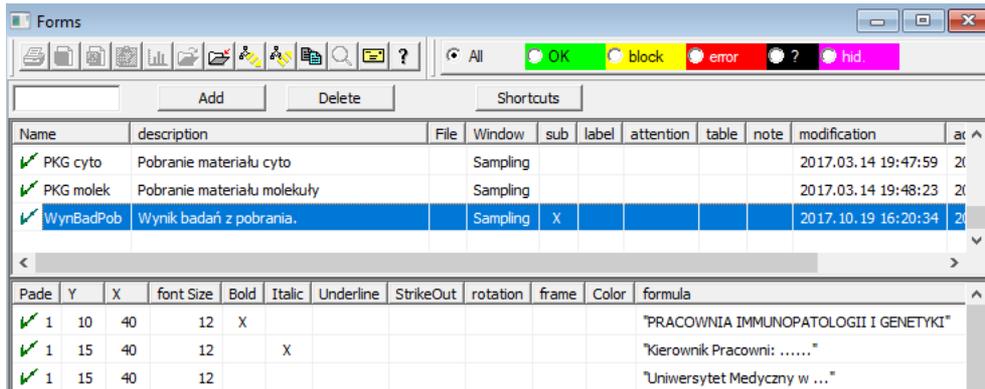
The fields "par1" to "par3" are used to transfer report parameter values.

They don't have to be filled in, it's just a convenience.

You can insert a question for the parameter value in the report.

Quite simply, if these questions are too tiresome or unnecessary and the report requires a parameter, then enter it here.

Forms



The screenshot shows the 'Forms' application window. At the top, there is a toolbar with icons for file operations and a status bar with colored buttons: All (green), OK (yellow), block (red), error (black), and hid. (purple). Below the toolbar are buttons for 'Add', 'Delete', and 'Shortcuts'. The main area contains a table of forms with columns: Name, description, File, Window, sub, label, attention, table, note, modification, and a small 'a' icon. The 'WynBadPob' form is selected. Below this is a table of form fields with columns: Pade, Y, X, font Size, Bold, Italic, Underline, StrikeOut, rotation, frame, Color, and formula.

Name	description	File	Window	sub	label	attention	table	note	modification	a
✓ PKG cyto	Pobranie materiału cyto		Sampling						2017.03.14 19:47:59	2
✓ PKG molek	Pobranie materiału molekuly		Sampling						2017.03.14 19:48:23	2
✓ WynBadPob	Wynk badań z pobrania.		Sampling	X					2017.10.19 16:20:34	2

Pade	Y	X	font Size	Bold	Italic	Underline	StrikeOut	rotation	frame	Color	formula
✓ 1	10	40	12	X							"PRACOWNIA IMMUNOPATOLOGII I GENETYKI"
✓ 1	15	40	12		X						"Kierownik Pracowni:"
✓ 1	15	40	12								"Uniwersytet Medyczny w ..."

If you need to print a form or questionnaire, you can create a template here.

In addition to selecting location on a print-out and format, you can use a set of functions and operators to gain full access to the database. You can format the data freely.

[The list of available functions.](#)

Forms - Edit

Forms, printing - headers ×

Name

description

File to fill

Window sub label

Table database.

formula

attention

Status: OK block error none

Name

Form header data.

Here, you can select the main window of a form.

Forms - Specification

Forms prints - Specifications ×

Page Y X

font Size rotation

Do bold Italic Underline StrikeOut

par. cell Color

fomula

attention

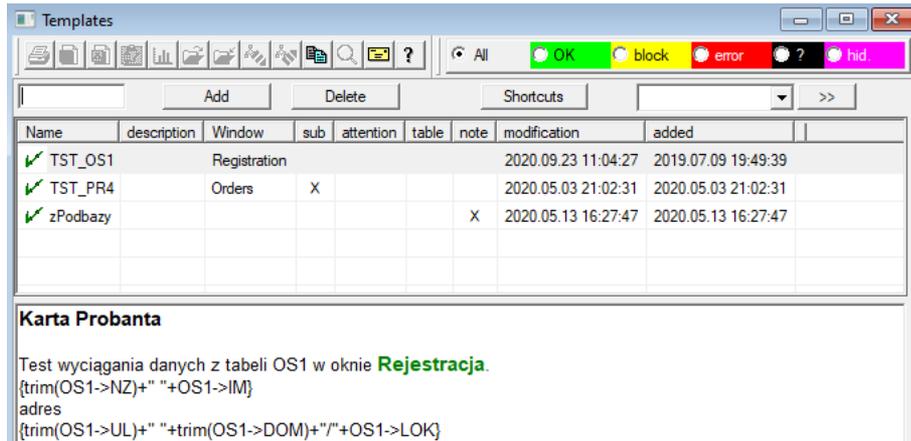
Status: print not print turn off N.A

Coordinate X - horizontal.

In form specification, you can use functions and refer to database fields.
Phrase OS1 ->NZ means read out of data from NZ field of OS 1 table.

Detailed description of database structure can be found in Help -> Tables or DS_BBMS_EN.pdf file.

Templates



Templates allow you to generate documents in RTF format (a standard supported by all rich text editors). As the document is saved, the software replaces the formula enclosed in curly braces {} with the formula result. You can use all available functions (e.g. used in forms) and the syntax that allows you to read the database.

The defined template can be attached to the window, and if there is a tree in the window, the branch table can be pointed to the tree branch.

It is a good practice to prepare the formulas in a notepad and then copy them to the template to avoid hidden RTF encoding inside the formula.

If you have prepared a template in Word or Writer and after loading it has changed the format so that it does not meet your expectations, then instead of a template, you can enter the path to the template file, e.g. C:\BBMS\DBF\Biobank\RTF\Template.rtf

Long formulas can be shortened by using shortcuts.

In the curly brackets enter e.g. {% adr}, and in the window under the [Abbreviations] button, the abbreviation name "adr" and the text of the formula trim (OS1-> UL) + "" + trim (OS1-> DOM) + "/" + OS1-> LOK

Instead of {trim (OS1-> UL) + "" + trim (OS1-> DOM) + "/" + OS1-> LOK} you can use {% adr}, which significantly improves the legibility of the template.

Templates - edition

Templates - headers. ×

Name

description

Window sub

Table database.

formula

attention

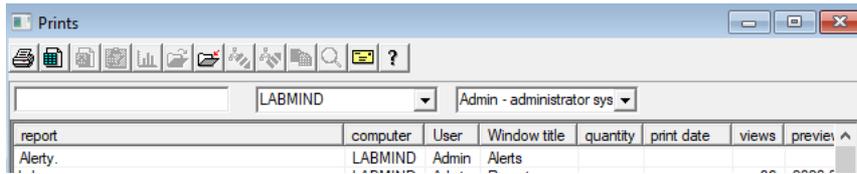
Status: OK block error none

Name

The data in the "Window" and "Table" fields are used in the template search procedure after clicking on the [Template] button in the window. The defined template can be active only in the selected window and retrieve data from the database tables connected to the window.

"Status" allows you to disable a defined template from use.

Printouts



The screenshot shows a window titled 'Prints' with a toolbar and a table. The toolbar contains icons for print, preview, refresh, and search. The table has columns for report, computer, User, Window title, quantity, print date, views, and preview. The first row shows 'Alerty.' as the report, 'LABMIND' as the computer, 'Admin' as the user, and 'Alerts' as the window title.

report	computer	User	Window title	quantity	print date	views	preview
Alerty.	LABMIND	Admin	Alerts				

This window lists parameters of all printouts.
Some parameters are editable and will be used for next printouts.

In addition to parameters, the window shows statistical data, number of print and preview operations, and dates.

Printouts - Edit

Prints - edition ×

Alerty.

Top margin in millimeters Left margin in millimeters

Is the printout horizontally?

number of lines per

Line separator code.

Top margin in millimeters

The window offers basic printing parameters and will be developed.

Print serial

Print serial ×

mask np. Gnnnn-zzs, nnnnmm, Print from a file

No - the np. 36256, 63542-63544 format

dec hex A-Z wide dynamic

substance / material	symbol	range	code	to file	
<input checked="" type="checkbox"/> DNA	C	1-56	G1234-01C	G1234-56C	Print
<input checked="" type="checkbox"/> ślina	S		G1234-00S	G1234-00S	Print
<input checked="" type="checkbox"/> tkanka	T		G1234-00T	G1234-00T	Print
<input checked="" type="checkbox"/> osocze	O		G1234-00O	G1234-00O	Print
<input checked="" type="checkbox"/> nerka	PL		G1234-00PL	G1234-00PL	Print
<input checked="" type="checkbox"/> krew	K		G1234-00K	G1234-00K	Print
<input type="checkbox"/>					Print
<input type="checkbox"/>					Print
<input type="checkbox"/>					Print

Batch print was introduced to facilitate printing multiple 1D/2D code labels using a mask.

Sample print scripts: (saved in System -> Configuration -> Code printers)

SATO

```
<ESC>A
<ESC>A104001440
<ESC>H0900<ESC>V0050<ESC>B103100####
<ESC>L0202
<ESC>H0250<ESC>V0050<ESC>WB0####
<ESC>Q1
<ESC>Z
```

ZEBRA

```
1D
^XA
^FO40,50
^BY2,2
^B3N,N,90,Y,N
^FD####^FS
^XZ
```

2D printing readable code in two lines near DataMatrix.

```
^XA
^FO20,40
^BXN,3,200
^FD####^FS
^FO80,40,0
^ADN,24,10
^FD...^FS
^FO80,70,0
^ADN,24,10
^FD...^FS
^XZ
```

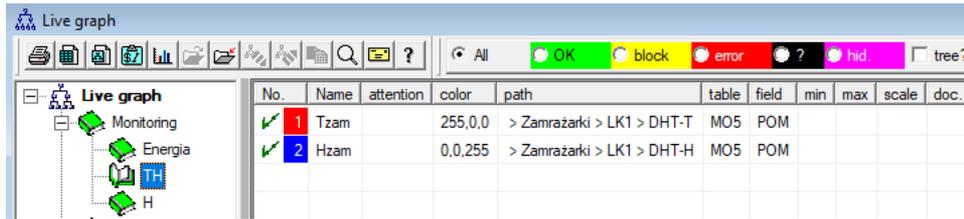
BRADY 2D

```
m m
J
S 11;0,0,9,13
B 5,5,0,DATAMATRIX,1;####
A 1
```

where "####" is replaced with a code and "..." is replaced with a part of a code, the other part in the next "..."
The use of string "..." lets you print a code in two lines. The condition is that the code must contain a full stop
"." at the breaking point

e.g. ABCDEF.CODE123 will be printed in two lines: ABCDEF in one and CODE123 in the other.

Live graph

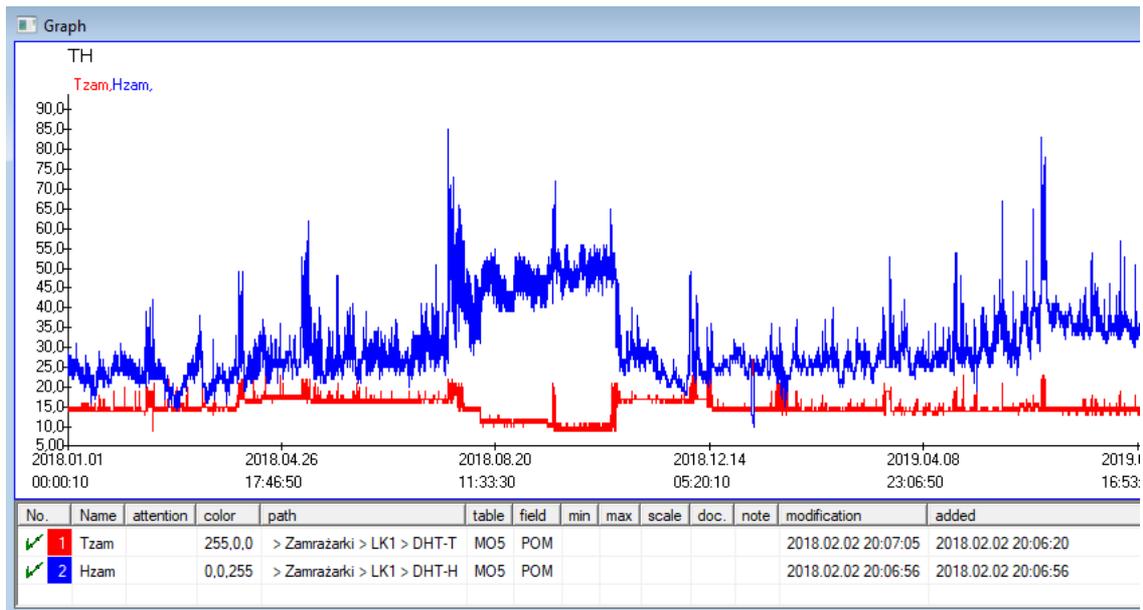


The chart from the window is limited to the data visible in the window.

This limitation turned out to be important for many, and therefore the "Live Chart" solution was created.

The data range is limited only by the chart parameters, and not by the organization of data recording in the tree.

In addition to removing the range limitation, the graph has been periodically refreshed.



Live graph - edition

Live charts - subgroups. ×

Name Colour

group Range:

daily weekly monthly yearly

multiplier reading

attention

+ > -

Status: OK block error none

Note Changes

Save Abort

Name

Live charts - data. ×

Name color

path > Zamrażarki > LK1 > DHT-T

table

field

attention min max scale

+ > -

Status: OK block error none

Note Changes

Save Abort

Name

Structure of the subbase

No.	Name	description	Type	size	decimal	label	questionnaire	attention	list	new row	condition
✓ 1	TEXT1		C	20		text	X				
✓ 2	DATE1		D	10		date	X				
✓ 3	LOG1		L	1		logic	X				
✓ 4	NUM1		N	10	2	numeric	X				
✓ 5	TIM1		T	5		time	X				

Subbase structure definition module includes three levels: domain, group, and tables. You can set domain and group freely.

There are some limitations as regards the other levels, tables and table details:

- table name must be unique in the whole base;
- the name should be short and cannot contain special characters (including space);
- table must include fields (columns);
- each field should have a short name without special characters (including space)

If table structure should represent a source base, click [Source] where you can run a wizard.

Subbase structure - Edit

Structure - field X

No. Name Source column

description Field survey?

edition
 preview
 blockade

label new row Tab Control

type size conditional field

list auto list

Insert dictionary description into table view?

Default value formula - the result substituted when the survey is opened.

A field / column calculated with a data conversion formula.
 Conversion macro, e.g. if (value == 1, 'M', 'F')

local	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> U
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> U
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> U
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> U

Inclusion formula depending on data in the database, e.g. position in the tree.

attention

+ > -

Status: enabled block disable none

Note Changes Save Abort

Name

In order to ensure data storage in a database with any database engine, several rules must be followed:

1. The field name should not be longer than 10 characters, it cannot contain special and diacritical characters and it cannot be a reserved word in the SQL database.
2. The maximum size of the text field is 254 characters, and the maximum size of the numeric field is 12 characters, including the sign separating integers from fractions.
3. The number of fields in the table cannot exceed 254-14 (reserved for BBMS) = 240.

Information from the "Description" field will appear in the Subbases module during editing.
 "Label" will be displayed wherever the defined field is used, including windows and reports.
 The "List" is used to indicate the values that the text field may contain, while editing, a selection list will be visible.

"Status" allows you to enable the field to be visible in the Subbases module.

Local database fields are used to indicate the save location during import, e.g. from Excel, Calc, ODBC.

It is possible to save the same data to several tables.

You can also save data to different records of the same table by applying an additional indicator (third column).

The "?" means to use the notation in any variant, and eg "1" only in one variant.

eg the import of several 2D codes from one sheet row must be defined so that a data set is necessary for each indicator

in the sheet: code1d, code2d, code1d, code2d, code1d, code2, no_ident

in the definition

code1d: BB5-> NZ

code2d: BB6-> NZ

code1d: BB5-> NZ, 1

code2d: BB6-> NZ, 2

code1d: BB5-> NZ, 3

code2d: BB6-> NZ, 3

nr_ident: BB6-> NR_DNA ,?

The conversion formula in the field properties and the formula after import in the table properties allow you to perform additional tasks.

Sample formula content after importing the record:

```
! empty (vp ("Sc", trim (_TBL-> DIRECTORY) + "\" + trim (_TBL-> PRNUMBER))) .and. Template ("Slide", vg ("Sc") + "\ slide.yml") .and.  
mrxs2lnk (vg ("Sc"). "mrxs; \ Data0002.dat; \ Data0003.dat", "BB6" _ TBL-> ID_BB6)
```

Interpretation:

```
! Empty (vp ("Sc" trim (_TBL-> PRODUCT) + "\" + trim (_TBL-> NUMER_PRE)))
```

Save to the "Sc" variable the subdirectory, the name of which is in the TBL table, in the DIRECTORY field and in the PRNUMBER field of the same table

Functions:

empty () - checks if empty
trim () - cuts off the last spaces

```
Template ("Slide" vg ("Sc") + "\ slide.yml ')
```

Make a template called "Slide" and save it to the file "slide.yml"

The last command executed after importing the record is

```
mrxs2lnk (vg ("Sc"). "mrxs; \ Data0002.dat; \ Data0003.dat", "BB6" _ TBL-> ID_BB6)
```

The function performs two tasks: converting a binary image to jpg and attaching jpg to a sample in the database.

vg ("Sc") - gets the path to the files to be converted
".mrxs; \ Data0002.dat; \ Data0003.dat" - list of files to convert to jpg
"BB6" - the main database table to which the jpg is to be attached

_TBL-> ID_BB6 - identifier of the BB6 table to which the jpg is attached.

Min/Max

Min/Max ×

critical min ×	min ×	max ×	max critical ×
-15 ▼	0 ▼	100 ▼	300 ▼

Coloring of labels depending on the size in the data field.

Color change - click with the right mouse button.

Remove a color - click on the [X] button

Change text - click with the left mouse button.

Source of imports

Source of imports dzial-> TEST1 X

ODBC user Password

Database ...

Main Table	Main col. of the tab.	Col. linked table.
Arkusz1		
Table 1 attached.		
Table 2 attached.		
Table 3 attached.		

Select:

Status1

Status2

Status3

This window is used to define import method for data from an external database to BBMA subbase.

Sort

Date	Target tile code	description	attention	material	max	Plate	Spend to	User	note	modification
✓ 2016.05.30	001234567	Kontener		DNA			WALL-B			2018.04.26 18:19
● 2017.06.06	123456									2017.06.06 13:09
✓ 2017.07.31	Test	opisik	uwazki				WALL-B	Admin	X	2017.05.08 10:43
● 2018.10.11	123456789			stock	1	123456789				2019.07.04 13:44

No.	sample	Plate	4	3	2	1	Probant	material	position	No.DNA3	Status1
✓ 1	000F5D9D2	001234567	ściana A	bank 4°C	Piętro	Wew	Kowalski Jan		A01	123456	
✓ 2	000F5D9E8	11691211	ściana A	bank 4°C	Piętro	Wew	Kowalska Anna		A02		
✓ 3	000F5DA1D	7657647646	ściana A	bank 4°C	Piętro	Wew	Kowalski Jan		A03	123456	

Extraction of a few vials from multiple plates in the whole biobank.
This is one of the basic activities performed routinely prior to testing a specimen.

Specimens in biobank are stored in a random fashion. Even if someone purposefully orders vials according to some criterion, during preparation phase, the criterion is bound to change. Therefore, it should be assumed that vials are placed randomly in the biobank.

Using definable reports or any other mechanism, e.g. Excel, compose a list of codes to be sorted.

This list of codes in a text file is imported and the software searches vials by codes and generates a list of plates.

The list of plates may be provided to biobank personnel or transferred to biobank handling robot (e.g. Yeti, Wall-B :))
Then, vials are extracted from plates using specified addresses (optional control using a 2D scanner).
Vial extraction from plates and transfer to other working plates may be done manually or automatically.

After sorting, it is vitally important to scan the plate using Start -> Biobanks -> Plate.

During operation of your biobank (or repository) the issue of where the material is will come up. Beyond any doubt, you should assume that material is "scattered" in multiple plates/boxes.

The window searches all plates/boxes based on test vial list. In practice, the following procedure applies:

- Step 1: using reports or any other mechanism create a list of vials, list of 2D codes of vials
- Step 2: add new item in the upper table (right mouse button "Add" or the [Ins] key)
- Step 3: import the list of 2D codes defined earlier
- Step 4: click [Sorter] and find specimen manually or let biobank automated system do it for you.

Notes

It may happen that the specimen is already in test facility or just used by another user and you have to wait or contact that user.

Sort - Edit

Sorting - order ×

2016.05.30 Target tile code 001234567

description
Kontener

attention

Spend to WALL-B

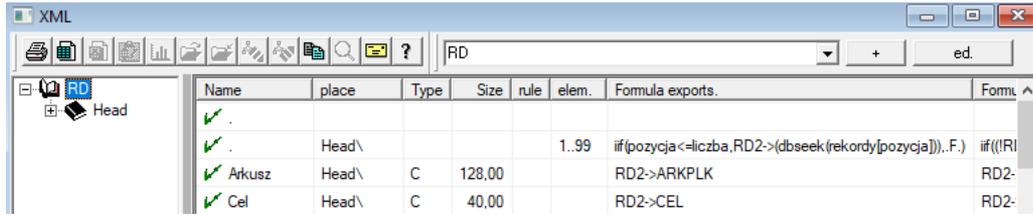
material DNA max

Status:
 done run error none

Save Abort

Enter basic data on sorting.

XML/YML/JSON



Name	place	Type	Size	rule	elem.	Formula exports.	Form
✓ .							
✓ .	Head\				1..99	if([pozycja]<=liczba.RD2->(dbseek(rekordy[pozycja])).F.)	if(![R]
✓ Arkusz	Head\	C	128,00			RD2->ARKPLK	RD2-
✓ Cel	Head\	C	40,00			RD2->CEL	RD2-

XML files let you save data from any database. Some even say that XML is a database.

The whole IT world has finally reached an agreement on data exchange format, we will strive to make this software follow this modern trend. It is a strategy of many developers (and authors) that try to include XML export in their application to use a fixed structure of the XML file. This software lets you freely define XML structure.

Some technical details:

- xml is made of elements and attributes
- elements are defined as a path, e.g. \raport\element
- attributes are defined as a path with indication at the end, e.g. \raport\element\@attribute

This window shows examples with a list of xml file elements and attributes. Data import and export must be preceded with definition of where to put what, so you have to

indicate the table and field the data for the attribute comes from and to which table and field the data from the attribute is to be loaded.

Both processes are different in terms of data flow direction and so some auxiliary variables were required:

Export: item, records, number

Import: value

The “item” auxiliary variable contains the item that is being exported. It may assume values as per XML definition field number, 0–999.

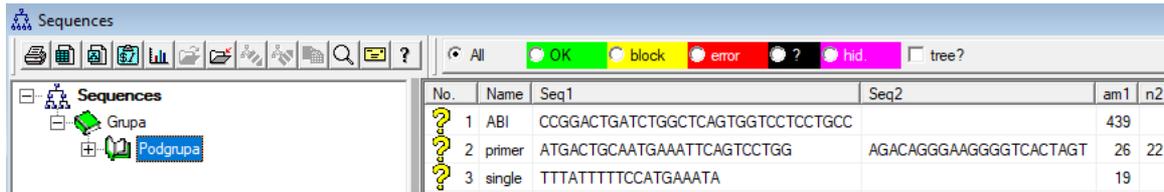
Variables “records” and “number” is a one dimensional table with numbers of multiselected records (in window table, after pressing [Shift] and clicking on a distant record). The number is the size of the table. An example of use of all the auxiliary variables:

```
ii f(item<=number,UZ->(dbgoto(records[item])).F.)
```

This expression verifies whether the current item can be reached or in other words, whether there is a record that can be accessed with dbgoto(). If so, it moves there, else returns FALSE, which is indicative of completed data export. Functions saved as element formula should return a logical value that means permission to continue the process or no permission.

The “value” variable stores attribute value to be loaded to database table field.

Sequences



The screenshot shows the 'Sequences' application window. On the left is a tree view with 'Sequences' expanded, showing 'Grupa' and 'Podgrupa'. The main area contains a table with the following data:

No.	Name	Seq1	Seq2	am1	n2
1	ABI	CCGGACTGATCTGGCTCAGTGGTCCCTCGCC		439	
2	primer	ATGACTGCAATGAAATTCAGTCCTGG	AGACAGGGAAGGGTCACTAGT	26	22
3	single	TTTATTTTCCATGAAATA		19	

FASTA database sequence search tool.

Before activating the search tool, prepare distributed computing environment:

1. Assign as many computers in the local network as possible:

- with 40 GB of free space on hard drive.

- with Windows system.

2. Download and unzip <http://bbms\FASTA.zip> on a hard drive (you may switch compression on).

3. Add application shortcut to C:\BBMS\EXE\Agent.exe to Autostart and run it.

Distributed computing is now enabled, including FASTA database search tool.

Sequences - Edit

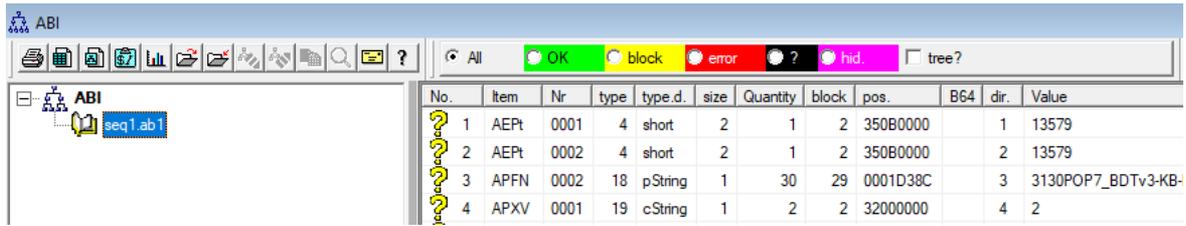
Sequences - definitions



Name	<input type="text" value="primer"/>	max length	<input type="text" value="0"/>
Seq1		am1	<input type="text" value="26"/>
<pre>ATGACTGCAATGAAATTCAGTCCTGG</pre>			
Seq2		n2	<input type="text" value="22"/>
<pre>AGACAGGGAAGGGTCACTAGT</pre>			
FASTA	<input type="text" value="*.fa"/>		
attention	<input type="text"/>		
Status:	<input checked="" type="radio"/> OK <input type="radio"/> block <input type="radio"/> error <input type="radio"/> none		
	<input type="button" value="Note"/>	<input type="button" value="Changes"/>	
	<input type="button" value="Save"/>	<input type="button" value="Abort"/>	

Name

ABI



No.	Item	Nr	type	type.d.	size	Quantity	block	pos.	B64	dir.	Value
1	AEPT	0001	4	short	2	1	2	350B0000		1	13579
2	AEPT	0002	4	short	2	1	2	350B0000		2	13579
3	APFN	0002	18	pString	1	30	29	0001D38C		3	3130POP7_BDTv3-KB-
4	APXV	0001	19	cString	1	2	2	32000000		4	2

Import of sequencer results by *.abi files.

(Applied Biosystems Genetic Analysis Data File Format, ABIF File Format Specification and Sample File Schema)

The files store data that can be previewed with special software.

We attempt to change this by enabling you to import this data to the database.

After the data is imported, you can see sequences in a search tool or generate special reports.

ABI - Edit

ABI data - directory entries ×

Item catalog

Value

```
CCGGACTGATCTGGCTCAGTGGTCTCTGCCTTGGCCTCTGAAGTGTGGGATTACAGGTGKAGWTACCACACT
GTCCCTAATACTAATTGATAAGTTAWTTTGGTTTTACTTTTAGGTTACAGGAATTAACGTTTGTTCAGAAGAC
AATGTTGATGTTTCATGATATAGAAATGTTACAGTATATCAATGTGGATTGTGCAAAATTAACGACTCCTGAAGGGTAA
GTTTAAATGATAATATATCTGAAAAAATCACTGGGTCAAAAAGTAGTATCATGAAATGACTAATTATATTAATTGTGC
TGAMCTAGAACACCAATTARGYGGTTKTCTGKTKKKGKTKKGCSCGKSYKKRKKMRRYWKWMMWKWMSRMMASM
CMSMYCSMWAGGRGWYGTWYYMRKSYKMGWWYWGARRRRRAWA
```

description

attention

Status: OK block error none

Item catalog

Import of sequencer results by *.abi files.

NGS

The screenshot shows a software interface for NGS. The top bar includes a 'Long' dropdown menu, a radio button for 'All', and two buttons: 'done' (green) and 'run' (yellow). Below the top bar is a file tree on the left and a table on the right.

File Tree:

- NGS
 - Test
 - C:\BBMS\DBF\TEST\FASTQ\
 - 7452_S35_L001_R2_001

No.	Name	description	att
1	NB551023_39_HVGF2AFXX		

NGS - edition

NGS - Proband. _ □ ×

Name	<input type="text" value="NB551023_39_HVGF2AFXX"/>	...
description	<input type="text"/>	
<input type="button" value="Commission"/>		
<input type="button" value="proband"/>		
attention	<input type="text"/>	<input type="button" value="Auto"/>
<input type="button" value="+"/> <input type="button" value=">"/> <input type="button" value="-"/>		
Status:	<input checked="" type="radio"/> done <input checked="" type="radio"/> run <input type="radio"/> error <input type="radio"/> none	<input type="button" value="Note"/> <input type="button" value="Changes"/>
		<input type="button" value="Save"/> <input type="button" value="Abort"/>

Name

NGS - long

NGS - long																											
L	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
609	G	A	C	T	C	T	A	T	G	A	T	T	C	A	T	T	C	A	T	G	T	T	G	C	A	T	
532	A	C	C	T	T	A	T	G	C	C	T	T	C	A	T	G	T	C	C	T	C	G	T	C	C	T	
497	T	T	G	C	C	T	T	C	A	T	T	T	C	C	A	A	A	G	G	G	A	T	A	A	C	A	
808	G	C	A	T	C	T	G	A	C	C	A	A	G	C	A	G	G	C	T	T	C	A	T	G	A	G	
552	C	C	T	T	C	C	A	A	G	C	T	G	G	A	T	A	A	C	A	G	G	T	G	G	G	A	
957	G	T	T	G	T	T	A	G	G	G	A	T	C	C	A	T	G	C	A	A	T	G	A	T	C	A	
599	G	C	T	A	T	A	C	T	G	A	A	G	T	G	T	A	A	G	A	T	G	C	A	A	A	A	
151	G	C	T	C	T	T	T	C	A	T	T	C	T	T	A	G	T	T	A	C	A	G	C	A	A	A	
<																											
L	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
150	G	C	A	T	C	T	G	A	C	C	A	A	G	C	A	G	G	C	T	T	C	A	T	G	A	G	G
139																G	G	C	T	T	C	A	T	G	A	G	G
151																		C	T	T	C	A	T	G	A	G	G

Tables

tab	description EN	sort1	sort2	sort3	sort4	Condition sort
AB0	ABI data - notes	TBN	IDN	FLN	LP	lempty(TXT).or.TBN=='_'
AB1	ABI data - File header	ID				
AB2	ABI data - directory entries	IDN	LP			
AL0	Alerts - notes	TBN	IDN	FLN	LP	lempty(TXT).or.TBN=='_'
AL1	Organizer	ID				
AL2	Alerts	ID				
AL3	Alerts - Blog	IDN				
BB0	Biobanks - notes	TBN	IDN	FLN	LP	lempty(TXT).or.TBN=='_'
BB1	Biobanks - location	ID				
BB2	Biobanks - room, floor	IDN	LP			
BB3	Biobanks - freezer, refrigerator	IDN	LP			
BB4	Biobanks - the sector wall shelf	IDN	LP			
BB5	Biobanks - tiles, container	IDN	LP			
BB6	Biobanks - vials, blocks	IDN	LP			
BB7	Biobanks - history of changes of parameters	IDN	STA	NZ	DT	STA<'5".and.(lempty(WAR) .or. lemp

Tables of the primary system database have been defined by BBMS provider and published in a de facto standard.

You can preview the structure so that you can use this information when defining reports, forms, and XML templates.

The user may safely change descriptions of tables that are often used in windows.

Any need to expand database structure has to be reported on biobank forum or directly to the system developer.

The window shows [Fields] and [Indexes] buttons to preview and edit details of the selected table.

The [Restore] button restores removed records in the selected table.

Tables - Edit

BB5 ×

Table database: previously imp.

BS	Bosnian	Biobanka - ploče, ambalaža.
CZ	Czech	Biobanky - dlažba, nádobu.
DE	German	Biobanken - Fliesen-, Behälter-
DK	Danish	Biobanker - fliser, container.
EN	English	Biobanks - tiles, container
EO	esperanto	Biobanks - kaheloj, ujo.
ES	Spanish	Biobancos - tejas, contenedores.
ET	Estonian	Biopankade - plaadid, konteinerisse.
FI	Finnish	Biopankkien - laatat, container.
FR	French	Biobanques - tuiles, contenant
GA	Irish	Biobanks - tileanna, coimeádán.
HR	Croatian	Biobanka - ploče, ambalaža.
HU	Hungarian	Biobankok - csempe, konténer.
IT	Italian	Biobanche - piastrelle, container.
LA	Latin	Biobanks gra - tuito, continens.
LT	Lithuanian	Biobanku - plyteles, konteinerijje.
LV	Latvian	Biobankas - flizes, konteineru.
NL	Dutch	Biobanken - tegels, container
NO	Norwegian	Biobanker - fliser, container.
PL	Polish	Biobanki - płytki, opakowania.
PT	Portuguese	Biobancos - telhas, recipiente.
RO	Romanian	Biobăncile - gresie, container.
SE	Swedish	Biobanker - kakel, container.
SK	Slovak	Biobanky - dlažba, nádobu.
SL	Slovenian	Biobanka - plošče, embalaža.
SQ	Albanian	Biobanks - pjata, paketim.
TR	Turkish	Biobankalar - fayans, kap.

sort1 sort2 sort3 sort4

Condition sort

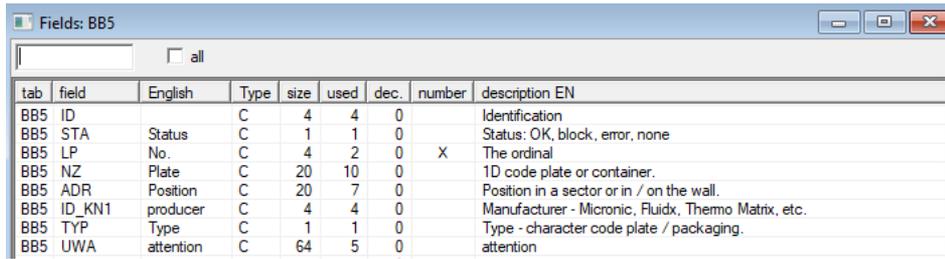
Description of the database table in English.

You may change table description.

Description text will be safely stored in the database and will not be changed upon update or installation. To restore the standard description, remove the custom one.

Descriptions are often displayed in BBMS windows so they should reflect table content.

Fields



tab	field	English	Type	size	used	dec.	number	description EN
BB5	ID		C	4	4	0		Identification
BB5	STA	Status	C	1	1	0		Status: OK, block, error, none
BB5	LP	No.	C	4	2	0	X	The ordinal
BB5	NZ	Plate	C	20	10	0		1D code plate or container.
BB5	ADR	Position	C	20	7	0		Position in a sector or in / on the wall.
BB5	ID_KN1	producer	C	4	4	0		Manufacturer - Micronic, Fluidx, Thermo Matrix, etc.
BB5	TYP	Type	C	1	1	0		Type - character code plate / packaging.
BB5	UWA	attention	C	64	5	0		attention

Fields or table columns are the basic component of database structure. Each field has properties that can be checked here.

The user may change field labels and descriptions. This data is displayed in all windows.

Changes in the other parameters are made by the developer and distributed to all BBMS users.

This makes the database follow the standard.

Fields - Edit

BB2->OPKP



field		OPKP	pos.	09	<input type="checkbox"/> Is the number in the text field?	Unit of measure.
Type	number		size	3	dec.	0
					unique	<input type="checkbox"/>
					Min/Max	<input type="checkbox"/>
						%
BS	Bosnian	%				Procentualno popunjenje odabranog prostora ambalažom.
CZ	Czech	%				Procentní vyplnění vybraného prostoru obalem.
DE	German	%				Prozentuale Ausfüllung des ausgewählten Raums mit Verpackung.
DK	Danish	%				Procentvis udfyldning af valgt plads med emballage.
EN	English	%				Percentage filling of selected space with packaging.
EO	esperanto	%				Procento-plenigo de elektita spaco kun pakajo.
ES	Spanish	%				Porcentaje de llenado del espacio seleccionado con embalaje.
ET	Estonian	%				Protsentuaalselt valitud ruumi täitmine pakendiga.
FI	Finnish	%				Prosentiosuus valitusta tilasta pakkauksella.
FR	French	%				Pourcentage de remplissage de l'espace sélectionné avec emballage.
GA	Irish	%				Líon an líonta de spás roghnaithe le pacáistiú.
HR	Croatian	%				Postotak ispunjenosti odabranog prostora ambalažom.
HU	Hungarian	%				A kiválasztott hely százalékos kitöltése a csomagolással.
IT	Italian	%				Riempimento percentuale dello spazio selezionato con l'imballaggio.
LA	Latin	%				Recipis implebitur vas lego.
LT	Lithuanian	%				Procentinis pasirinktos vietos užpildymas pakuote.
LV	Latvian	%				Procentualais aizpildījums ar iesainojumu.
NL	Dutch	%				Percentage vullen van geselecteerde ruimte met verpakking.
NO	norwegian	%				Prosentvis fylling av valgt plass med emballasje.
PL	Polish	%				Procentowe wypełnienie wybranej przestrzeni opakowaniami.
PT	Portuguese	%				Percentual de preenchimento do espaço selecionado com a embalagem.
RO	Romanian	%				Umplerea procentuală a spațiului selectat cu ambalaj.
SE	swedish	%				Procentuell fyllning av valt utrymme med förpackning.
SK	Slovak	%				Percentuálne vyplnenie vybraného priestoru balením.
SL	Slovenian	%				Odstotek zapoljenosti izbranega prostora z embalažo.
SQ	Albanian	%				Përqindja e përqindjes së hapësirës së zgjedhur me paketim.
TR	Turkish	%				Seçili alanın ambalaj ile yüzde dolumu.
	Default					

Is included as a column in the window?
 Instead of clearing the field, delete the record.
 Do you turn to the reports?
 Have you locked the editing?

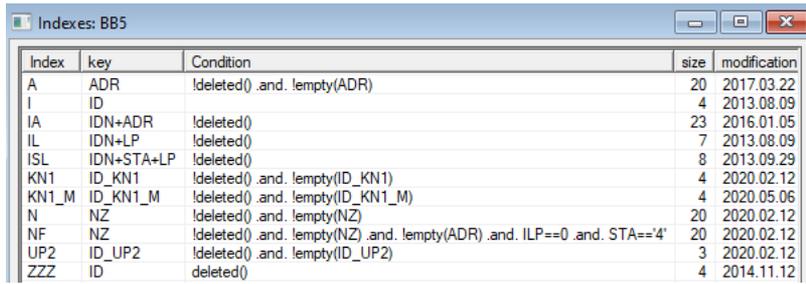
Here, you can change labels and descriptions of fields (columns) of database tables.

Labels are displayed in every window as column titles, labels for editable fields, or titles of other controls.

Field description is displayed in a tooltip or on the status bar when hovering or editing a control.

For fields, where you select an option, as in STA, description is interpreted as a label for individual options.

Indexes



Index	key	Condition	size	modification
A	ADR	!deleted() .and. !empty(ADR)	20	2017.03.22
I	ID		4	2013.08.09
IA	IDN+ADR	!deleted()	23	2016.01.05
IL	IDN+LP	!deleted()	7	2013.08.09
ISL	IDN+STA+LP	!deleted()	8	2013.09.29
KN1	ID_KN1	!deleted() .and. !empty(ID_KN1)	4	2020.02.12
KN1_M	ID_KN1_M	!deleted() .and. !empty(ID_KN1_M)	4	2020.05.06
N	NZ	!deleted() .and. !empty(NZ)	20	2020.02.12
NF	NZ	!deleted() .and. !empty(NZ) .and. !empty(ADR) .and. ILP==0 .and. STA=='4'	20	2020.02.12
UP2	ID_UP2	!deleted() .and. !empty(ID_UP2)	3	2020.02.12
ZZZ	ID	deleted()	4	2014.11.12

Indexes provide information on sorting in accordance with a defined principle.

Indexes significantly enhance database performance.

System list includes the primary key, filtering, and handling items selected to be removed.

Indexes - Edit

BB5:N ×

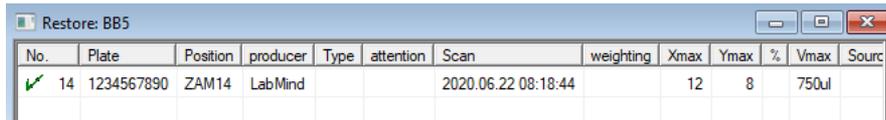
Index	<input type="text" value="N"/>	key	<input type="text" value="NZ"/>
Condition	<input type="text" value="!deleted() .and. !empty(NZ)"/>		

Index name of the database table.

Sorry, you can not change anything here.

If for some reason you need an index, for example to create reports quicker, report it on the forum or directly to software developer.

Restore



No.	Plate	Position	producer	Type	attention	Scan	weighting	Xmax	Ymax	%	Vmax	Sourc
✓ 14	1234567890	ZAM14	LabMind			2020.06.22 08:18:44		12	8		750ul	

Data is deleted in stages.

The first stage involves assigning the item to be removed the “hidden” status. Using status filter, you can display all hidden items. Changing the status, “bringing item back” from hidden is simple and requires editing permissions only.

If a hidden item is removed, the situation is more serious as it is marked for physical removal.

Such an item is not visible, cannot be found in any module or report.

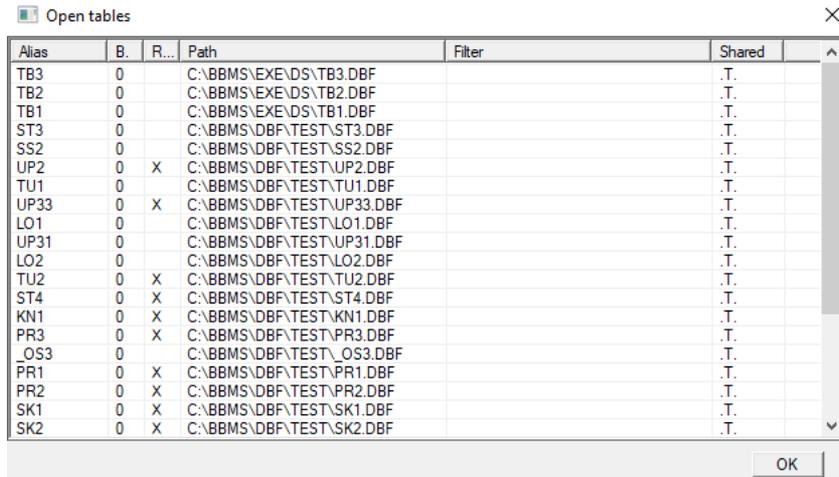
It may happen that an item is removed by accident so we implemented an option for the “admin” user to restore it.

The window opened with the [Restore] button (Help -> Tables) displays the data that can be restored. Just double click the item with the left mouse button.

Note!

Restoration data will not be stored forever, only until the table is packed, which happens during database reindexing.

Open tables



Alias	B.	R...	Path	Filter	Shared
TB3	0		C:\BBMS\EXE\DS\TB3.DBF		.T.
TB2	0		C:\BBMS\EXE\DS\TB2.DBF		.T.
TB1	0		C:\BBMS\EXE\DS\TB1.DBF		.T.
ST3	0		C:\BBMS\DBF\TEST\ST3.DBF		.T.
SS2	0		C:\BBMS\DBF\TEST\SS2.DBF		.T.
UP2	0	X	C:\BBMS\DBF\TEST\UP2.DBF		.T.
TU1	0		C:\BBMS\DBF\TEST\TU1.DBF		.T.
UP33	0	X	C:\BBMS\DBF\TEST\UP33.DBF		.T.
LO1	0		C:\BBMS\DBF\TEST\LO1.DBF		.T.
UP31	0		C:\BBMS\DBF\TEST\UP31.DBF		.T.
LO2	0		C:\BBMS\DBF\TEST\LO2.DBF		.T.
TU2	0	X	C:\BBMS\DBF\TEST\TU2.DBF		.T.
ST4	0	X	C:\BBMS\DBF\TEST\ST4.DBF		.T.
KN1	0	X	C:\BBMS\DBF\TEST\KN1.DBF		.T.
PR3	0	X	C:\BBMS\DBF\TEST\PR3.DBF		.T.
_OS3	0		C:\BBMS\DBF\TEST_OS3.DBF		.T.
PR1	0	X	C:\BBMS\DBF\TEST\PR1.DBF		.T.
PR2	0	X	C:\BBMS\DBF\TEST\PR2.DBF		.T.
SK1	0	X	C:\BBMS\DBF\TEST\SK1.DBF		.T.
SK2	0	X	C:\BBMS\DBF\TEST\SK2.DBF		.T.

The list of open tables is useful for administrators.

Each computer or server has a limit of open files
(open table means opening a minimum of 2 files, data and index).

For this reason, BBMS limits the number of open windows or "tries" to open files in read-only mode.

If you occasionally receive an error message,
then you need to check the number of files opened on the server and take specific steps to increase the limit.

Search

OS1 Surname	OS1 Forename	OS1 PESEL	OS1 identity card	OS1 No.DNA	BB6 foreign	BB6 2D	BB5 Plate	PR4 commission
Kajko	Lucek			1234567832				
Kalinka	Eugeniusz	1234567890		1928357		1011536521	11691211	rdhfy4567
Kalinka	Eugeniusz	1234567890		1928357		1011536521	11691211	rdhfy4567
Kazikowski-Nowakowski	Boleslaw			1234567841		0011AFA86	0123456789	
Kokosz1	Janek			1234567888				
Kolarko	Jakub	353422245		1234567673		76543	2000038515	35443534
Koleszko	Kajko	brak		1234567891			123456789	K100421000001
komrka A				komA				
komrka B				komB				
komrka C				komC		QWERTYUI	234567890	
komrka D				komD				
Kowalska	Anna	461876431874	AA 123456	~0003		000F5D9E8	123456789	22222222
Kowalska	Anna	461876431874	AA 123456	~0003		000F5D9E8	123456789	22222222
Kowalska	Zosia	1234567890		1234567784		0011AFAA0	0123456789	w2
Kowalski	Albin			1234567871				
kowalski	jan			1234567760				
Kowalski	Janek	12345678903	ABC 12345678	123456		1011536514	orphans	1234567
Kowalski	Janek	12345678903	ABC 12345678	123456		1011536514	orphans	1234567

The universal search engine is available in many BBMS system modules (magnifying glass) and menu->Help.

Data is collected in the form of a list based on texts entered into the search fields.

The user has search templates at his disposal, which means he can create any scenarios.

The search field can be any field in the database that has an index.

The program suggests a list of possible fields based on the defined list of tables under the [Tables] button.

There are no longer any restrictions regarding columns and the user can freely build a list of columns using the "Columns" option in the context menu.

From the window you can print and export to a spreadsheet (context menu - right-click on the table).

Attention !

Each user and each window has its own set of templates.

Templates can be imported from another user or from the BBMS distribution by selecting from the list of users themselves.

Contextual search engine

Resources - device ✕

Name	IP	MAC	IN	Code	place	description	attention								
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Select"/>							
<input checked="" type="checkbox"/> >	<input type="checkbox"/> Aa	<input checked="" type="checkbox"/> >	<input checked="" type="checkbox"/> Aa	<input checked="" type="checkbox"/> >	<input checked="" type="checkbox"/> Aa	<input checked="" type="checkbox"/> >	<input type="checkbox"/> Aa	<input checked="" type="checkbox"/> >	<input checked="" type="checkbox"/> Aa	<input checked="" type="checkbox"/> >	<input type="checkbox"/> Aa	<input checked="" type="checkbox"/> >	<input type="checkbox"/> Aa	<input checked="" type="checkbox"/> >	<input type="checkbox"/> Aa
Name	place	description	User	attention	comp.	BioBank	Monitoring	Robot	A feeding point	Reservations	^				
✓ Liquid handling	1		Admin		X		X			X					
✓ WIN7			Admin		X										

The contextual search engine works in windows not related to samples and orders, and when choosing the code from the dictionary. Search fields are created automatically based on the list of indexed table fields and the list of columns in the window. Indexed fields can be searched by matching from the beginning of the text ("| ->"), and others according to your needs. Often, the index is case-sensitive, which forces you to block the selection of this match ("Aa").

Therefore:

"| ->" - means matching from the beginning of the text

"Aa" - means distinguishing between uppercase and lowercase letters

If the number of search fields is too small, the last field with a selection list will be used. The software automatically builds a list of fields with appropriate matching options.

Container

No.	2D	Pos.	num	type	material	No.DNA3	proband	Commission	ICD	scan	weighting	Date
7	0011AFA83	A4	4		DNA		Nowak Piotr			2014.08.28 18:43:06		
2	tst12345	A3	3		DNA							
3	tst123456	A5	5		DNA	123452				2020.01.03 09:24:10		2020.0
4	tst1238c	A6	6		DNA	~000E	Koleszko Kajko	K190223041	icd-10:A01.4			

The Container is used to store data from windows, e.g. when performing a search.

Just hover the cursor over an item on any list and press [Space] to save the data to the Container.

In the same window, when you press [Ctrl] + [Space], the Container window is opened and it displays selected data from this window with data from the selected tree if any.

When moving data to the Container, the counter on the right hand side of the status bar is updated.



Organiser

The screenshot shows the Organizer application window. At the top, there is a toolbar with icons for file operations and a status bar with indicators for 'All', 'OK', 'block', 'error', and 'hid'. Below the toolbar is a dropdown menu showing 'Admin - administrator systemu' and an 'Add' button. The main area is divided into two parts: a calendar on the left and a task list on the right. The calendar is for 'czerwiec 2020' and shows dates from 22 to 27, with 'Dzisiaj: 2020-06-29' highlighted. The task list table has columns for Date, Time, Duration, description, alert, Notify, Mes., user, Equipment, attention, note, and modifi. Two tasks are visible: one from 2013.07.16 at 16:08 with description 'długi opis żeby sprawdzić log zm' and another from 2013.07.17 at 08:16 with description 'tst1'.

Date	Time	Duration	description	alert	Notify	Mes.	user	Equipment	attention	note	modifi
2013.07.16	16:08		długi opis żeby sprawdzić log zm	X							
2013.07.17	08:16		tst1	X			Admin				2018.

Organiser is a simple Personal Information Manager (PIM) for BBMS users.

The purpose of the Organiser is to order chronologically tasks to be performed and notify others.

Organiser's tasks: note to remember and notify others. Today, we seem to have to note many things on sticky notes. The Organiser replaces these notes. Just enter one event and it will multiply and alert you when the time to act comes.

Organizer - Edit

✕

← **czerwiec 2020** →

	pon.	wt.	śr.	czw.	pt.	sob.	niedz.
22	25	26	27	28	29	30	31
23	1	2	3	4	5	6	7
24	8	9	10	11	12	13	14
25	15	16	17	18	19	20	21
26	22	23	24	25	26	27	28
27	29	30	1	2	3	4	5

Dziś: 2020-06-29

08:36 06:00

alert 0 Notify

Do you take a message?

user **Admin**

Equipment **Incubator**

Timetable

description

attention

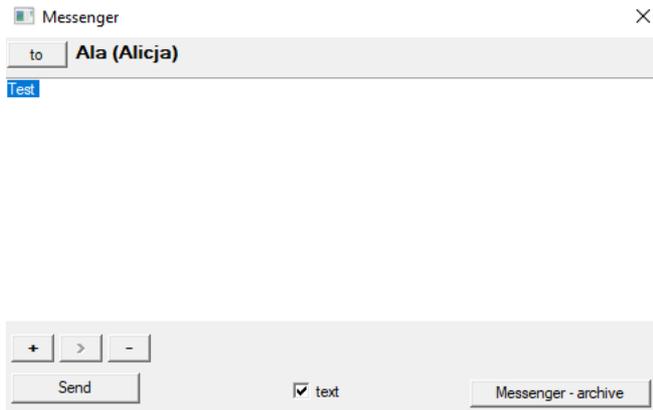
Status: Note

OK block error none

The most important Organizer item parameters are: date, time, description, and status.

Status specifies whether the item has been done or waits to be completed.

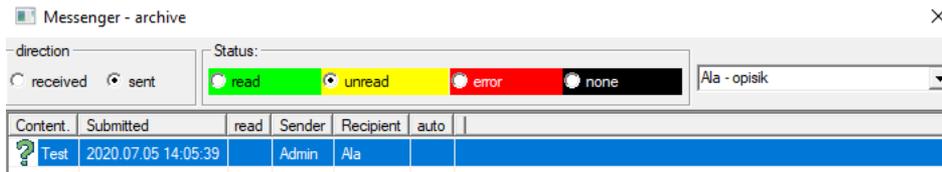
Messenger



Messenger allows communication between users within the application BBMS.

After a message is sent, it is stored in the database and when the recipient is available, the message is displayed.

Messenger - Archive



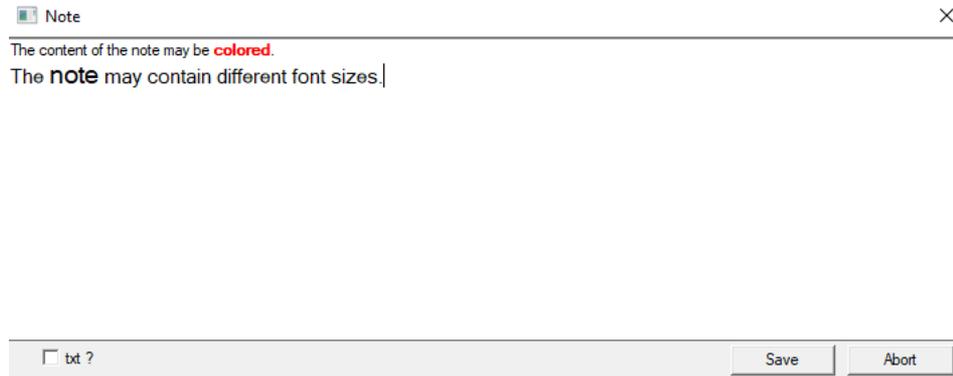
The screenshot shows the 'Messenger - archive' window. It features a 'direction' filter with 'received' and 'sent' options, where 'sent' is selected. A 'Status' filter is set to 'unread', with other options being 'read', 'error', and 'none'. A dropdown menu on the right is set to 'Ala - opisk'. Below these filters is a table with columns: Content, Submitted, read, Sender, Recipient, and auto. The table contains one row with a question mark icon, the text 'Test', the date '2020.07.05 14:05:39', and the names 'Admin' and 'Ala'.

Content.	Submitted	read	Sender	Recipient	auto
? Test	2020.07.05 14:05:39		Admin	Ala	

Sometimes it is necessary to preview communication history, which can be done here.

Thanks to sender, recipient, and status filters, browsing should be easy.

Note



The note can contain any textual information.

The content of the note can be formatted by changing the font and its properties.

All commands are available in the context menu opened with the right mouse button.

Checking the "txt?" will save the text as unformatted (plain TXT document),
and unchecking this box as "RTF", that is, with all formatting information (as an RTF document).

Functions

Examples of application functions are defined in the final reports, forms and formulas XML.

The functions can be used wherever possible to build a formula, which in addition to the above processes primarily :)

The list of available functions:

and (value, arg1, arg2, ... arg10) - perform operations with the operator ".and." value = arg1.and.wartość = arg2.and. .and.wartość = arg10 at (<Searchmode> <text>) - returns the position <Searchmode> in <text> Occurs (<Searchmode> <text>) - returns the number of appearances <Searchmode> in <text> Date2Text (<data>, <space>) - similarly as above only the separators are removed, e.g.. Date2Text ("2007.06.28", 2) -> 2007 06 28

dtoc (<date>) - converts the date to text

FileSeek (cFile, cCol, cSearch) - returns the truth if the searched text appears in the column indicated.

iif (<condition>, <>true>, <>false>) - it returns <>true> or <>false> depending on the fulfillment of <condition>

Instr (<Searchmode> <text>) - if <text> is <Searchmode> it returns true

int (<number>) - rounded to an integer by cutting

number (<niezmany_typ>) - returns the number of

ltrim (<text>) - cut spaces from the left side of the text

lower (<text>) - returns all the letters as small

Month (<date> | <data_tekstowa> | <nr_miesiaca>) - returns the month in words

or (value, arg1, arg2, ... arg10) - perform operations with the operator ".or." value = arg1.or.wartość = arg2.or. .or.wartość = arg10 for example. or (LSTSKL-> TYPE, 'E', 'R', 'W'), which is identical to LSTSKL-> TYPE == 'E'.or.LSTSKL-> TYPE == 'R'.or.LSTSKL -> TYPE == 'W'

OstatniDzien (<period>) - returns the last day of the month

Pic (<command>) - insert a print image, for example. 1D barcode

Example: Pic ('Zint.exe o' + trim (OS4-> CODE) + '. jpeg d' + trim (OS4-> CODE))

and such. for the next code: iif (OS4 -> (dbskip (1)), Pic ('Zint.exe o' + trim (OS4-> CODE) + '. jpeg d' + trim (OS4-> CODE)), "")

Ask (<treść _pytania>, <domyślna_wartość >) - a query about the value of

round (<number>, <tenth>) - rounded mathematically to <tenth> decimal places (dot)

rtrim (<text>) - cut space on the right side of the text

p (<number>, <length>, <after the dot>) - returns the text

StrTran (<text> <searched> [<zamien_na>] [<nr_znaku_poczatku>] [<nr_znaku_konca>]) - returns <text> with exchanged with <searched> on <zamien_na>, you can not use other parameters

text (<whatever>) - replaces <anything> on the text without leading and trailing spaces

Text2Text (<something>, <space>) - treats returns <something> as text with characters separated by spaces in the amount of <ODST>, for example. Text2Text (100.5) -> 1 0 0

upper (<text>) - returns all the letters as large

val (<text>) - returns the number of

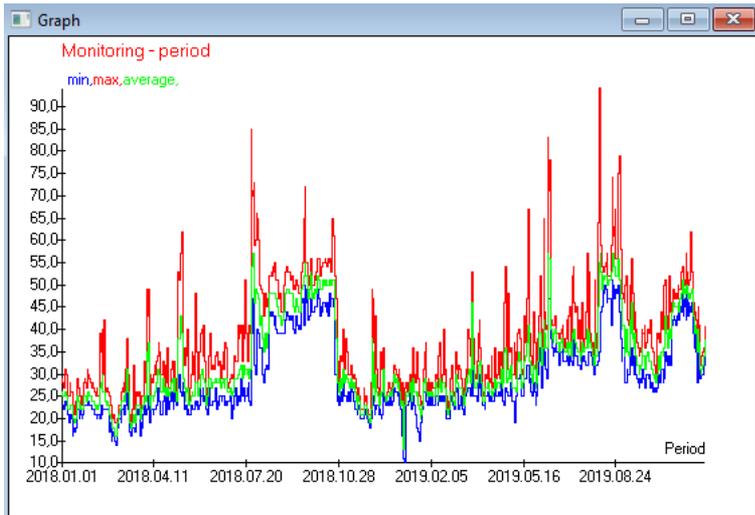
State (<kod_pocztowy>) - returns the name of the province

VG (<variable>) - read variable

VP (<variable>, <value>) - write to the variable

VS (<variable>, <value>) - write to the variable sum of the variable and the value of

Graph



On the substitution of the indicated data and appearance options, BBMS creates a graph automatically, selecting the X and Y ranges, respectively. If the ranges of the indicated data differ significantly, the graph will not be legible.

Choose the colors so that the indicated data do not coincide :)

Graph - options

Graph - options ×

	Period	Axis	Background	Title
X	Period			
Y	min	Graph 1	line	line
	max	Graph 2	line	line
	average	Graph 3	line	line
		Graph 4	line	line

OK Abort

In order to generate a chart, you need to provide the necessary parameters, the X and Y data source and the appearance.

Not every window contains data that can be plotted.

Column

Column

field	label	list	locked	description
IDN	tree	X	X	ID of the parent table.
STA	Status	X		Status: OK, block, error, none
LP	No.	X	X	The ordinal
ID_BB6	sample	X		Vial / sample / ampoule /tube.
ID_BB5	Plate	X		Plate or box.
ID_BB4	4	X		The fourth level of biobank geogr
ID_BB3	3	X		The third level of biobank geogr
ID_BB2	2	X		Second level of biobank geogr
ID_BB1	1	X		The first level of biobank geogr
ID_PR4	Commission			Commission a study or storage i
ID_OS1	Proband	X		proband
MAT	material	X		The biological material.
ADR	position	X		Position on the plate.
NR_DNA	No.DNA3	X		Own identifier of biological mate
NR_DNA2	No.DNA2			Own identifier of biological mate

↑

↓

Reset

Relation

label: material Is included as a column in the window?

description: The biological material.

Formula:

Text color:

Background color:

Have you locked the editing?

Save Abort

In this window you can change: label, description and order of columns in the table.

For columns whose name starts with "ID_", you can define a formula for retrieving data from the database.

For example:

For ID_OS1 you can type a formula:

OS1-> IM

Then the names of the probate are listed in the table

or

trim(OS1-> NZ) + " " + OS1-> PES

This will be your name and PESEL

!

Import from BBMS

Import from BBMS ×

database

User Password

	Source of imports	Where the data is saved
BB1: Biobanks - location	<input type="text" value="Wew"/>	<input type="text"/>
BB2: Biobanks - room, floor	<input type="text" value="Pietro"/>	<input type="text"/>
BB3: Biobanks - freezer, refrigerator	<input type="text" value="bank 4°C"/>	<input type="text"/>
BB4: Biobanks - the sector wall shelf	<input type="text" value="all"/>	<input type="text"/>
BB5: Biobanks - tiles, container	<input type="text" value="all"/>	<input type="text"/>
BB6: Biobanks - vials, blocks	<input type="text" value="all"/>	<input type="text"/>
BB7: Biobanks - history of changes of parameters	<input type="text" value="all"/>	<input type="text"/>

Data portability level Notes
 Documents

Select the information associated with the update during import:

Mother producer Source proband
 Commission User

Import formula (alias for an imported table with the IMP_ prefix).

database

Import from BBMS means import from another structure database published as BBMS :)
The import mechanism covers almost all software modules.

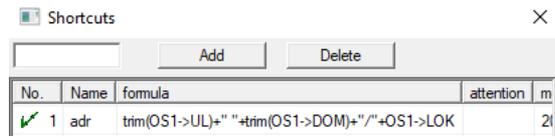
The import will likely be expanded by adding more options.

The procedure consists of:

- database selection and logging
- selecting the source tree
- optional - select the target tree
- selecting the import table / level - this data will be 100% imported
- marking additional information for import, i.e. linked data

Using the import formula you can filter the data, e.g. only with the status "OK"
IMP_BB6-> STA == '1'

Shortcuts



It's easy to make a mistake when building complex formulas.
Thanks to the use of abbreviations, the formulas are clear and make unnecessary haos :)

In order to transfer the formula to shortcuts, simply copy it to the Shortcuts window giving the appropriate name.

e.g. instead of

trim (OS1-> UL) + "" + trim (OS1-> DOM) + "/" + OS-> LOK

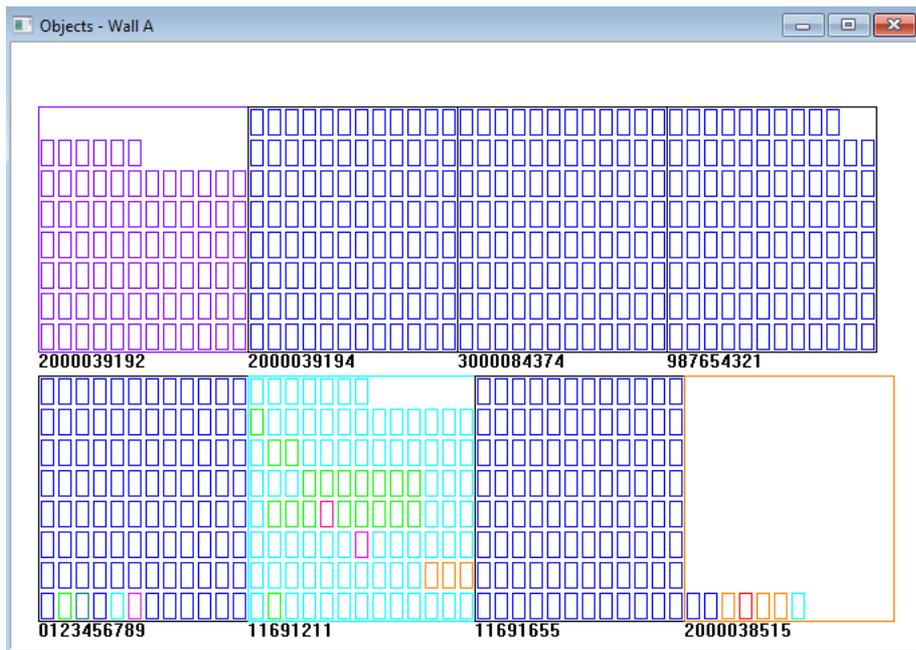
type

%adr

or

#adr

Objects



You can open the object presentation window with the button on the toolbar.

Practical use can be checked in the following modules: Biobanks, Warehouse and Reagents.

The size and arrangement of the objects depends on the data, in particular Xmax, Ymax and the number of secondary elements. Coloring will be obtained after choosing a color while editing an element.

If you click with the right mouse button in the window, you will be able to change the formulas of additional information.

Below is an example:

```
substr(BB4-> NZ, 7.2) + " " + text(BB4-> FIOP) + "%"
```

or

```
right(trim(BB4-> NZ), 2) + " " + text(BB4-> FIOP) + "%"
```

where: substr() or right() - cut the text string

Events

Events - Biobanks - vials, blocks ×

all

added	Event	IDN	attention	computer	User
2021.02.09 08:29:23	removed		0011AFA87	LABMIND	Admin
2021.02.04 23:00:40	searched	1011536512	1011536512	LABMIND	Admin
2021.02.04 16:38:06	searched	0011AFA82	0011AFA82	LABMIND	Admin
2021.02.04 12:41:26	Container	0011AFA8C		LABMIND	Admin
2021.02.04 10:29:03	searched	0011AFA81	0011AFA81	LABMIND	Admin
2021.02.03 20:08:59	Container	0011AFA82		LABMIND	Admin
2021.02.03 20:08:57	Container	0011AFA89		LABMIND	Admin
2021.02.03 20:08:56	Container	0011AFA86		LABMIND	Admin
2021.02.03 17:20:27	searched	0011AFA81		LABMIND	Admin

Not everything that happens to the database can be recorded from the history of data changes. A good example is a database record deletion event or an action of the type found or inserted into a container. Therefore, a register of these events was created in the BBMS.

The data in the event log is kept for a certain period in order not to cause too much database growth. If necessary, you can restore the archive and check historical events.

The catalog of events will be gradually expanded with the emerging needs of users.