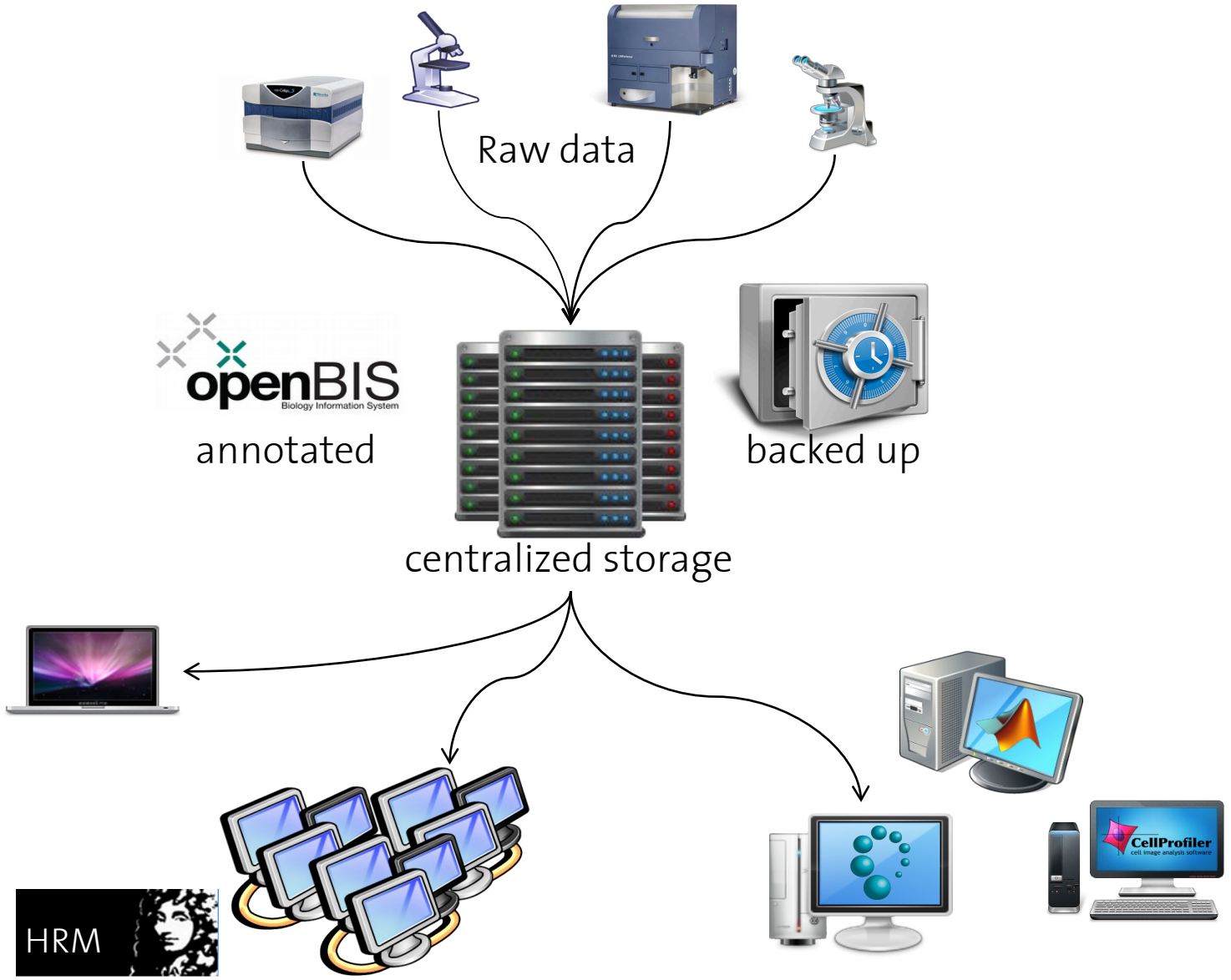
ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

D-BSSE
Department of Biosystems
Science and Engineering

Streamlined data management of shared laboratory resources with the openBIS Importer Toolset 2.0!

https://obit.ethz.ch/

Aaron Ponti (aaron.ponti@bsse.ethz.ch), Single Cell Facility, D-BSSE, ETH Zurich


Raw data
openBIS
Biology Information System
annotated
backed up
centralized storage
HRM
CellProfiler
cell image analysis software

openBIS – open Biology Information System

openBIS is an **extensible**, **open source** software **framework** for **constructing** user-friendly, scalable and powerful **information systems** for **data** and **metadata** acquired in biological experiments.

It enables users to **collect**, **integrate**, **share**, **publish data** and to **connect to data processing pipelines**.

https://sis.id.ethz.ch/software/openbis.html

openBIS in labs

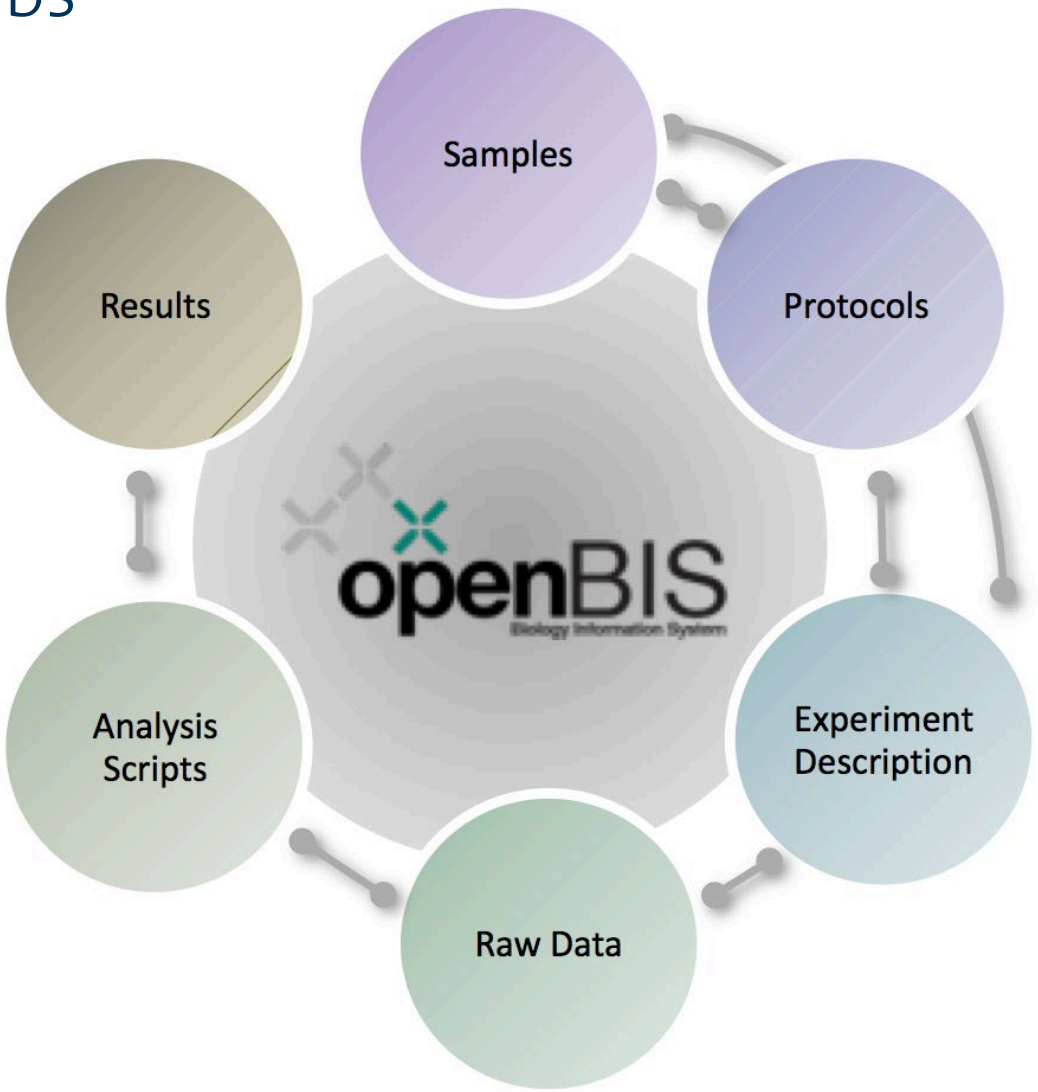


Image courtesy: Caterina Barillari, ID-SIS

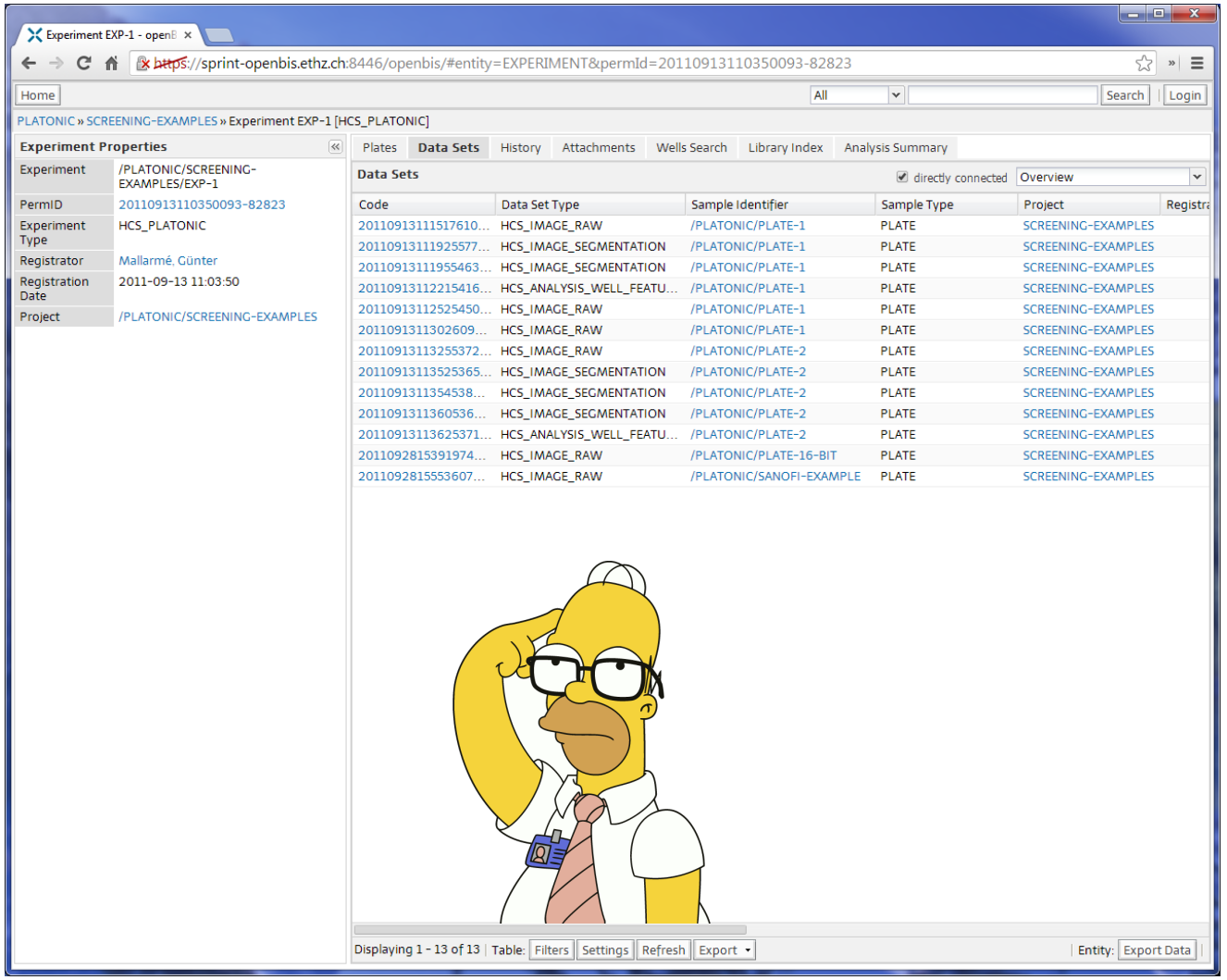
openBIS core

- Separate metadata (application server) and data (data store server)
- Clean and flexible hierarchical metadata structure:
  - Space > Project > Experiment > Sample > Dataset > File
  - Authorization at space level
  - Samples and datasets: entities have parent/child or container/contained relationships
  - Datasets belong to samples or experiments
  - All entities have user defined types, properties and vocabularies
  - Attachments can be associated to most entities
- Information indexing and searching by metadata
- Rich set of APIs and plug-in interfaces
  - Java, Python, Jython, JSON RPC services

openBIS extensions

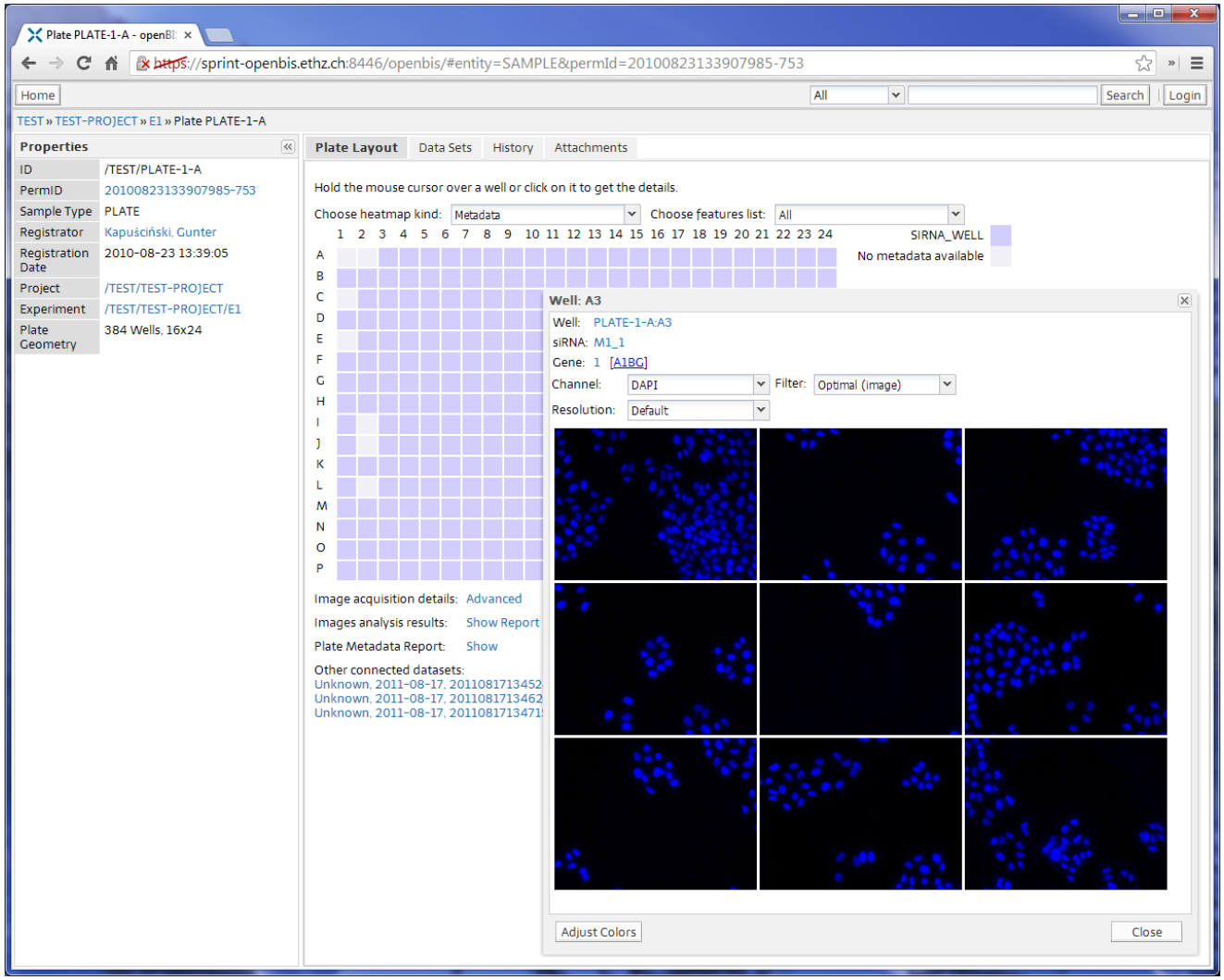
- Core plug-ins
  - Dropboxes (dataset ingestion)
  - Master data (import/export/update)
  - Data sources (additional databases)
  - Aggregation (reporting) plug-ins (metadata collection)
  - Processing plug-ins (on datasets)
  - Ingestion plug-ins (create/update entities)
  - Maintenance tasks (update/fix)
  - Web applications / **JSON RPC services** (custom openBIS views)
- An organized set of core plug-ins can become a "core technology"
- Core plug-ins extend openBIS APIs to interface with custom client apps

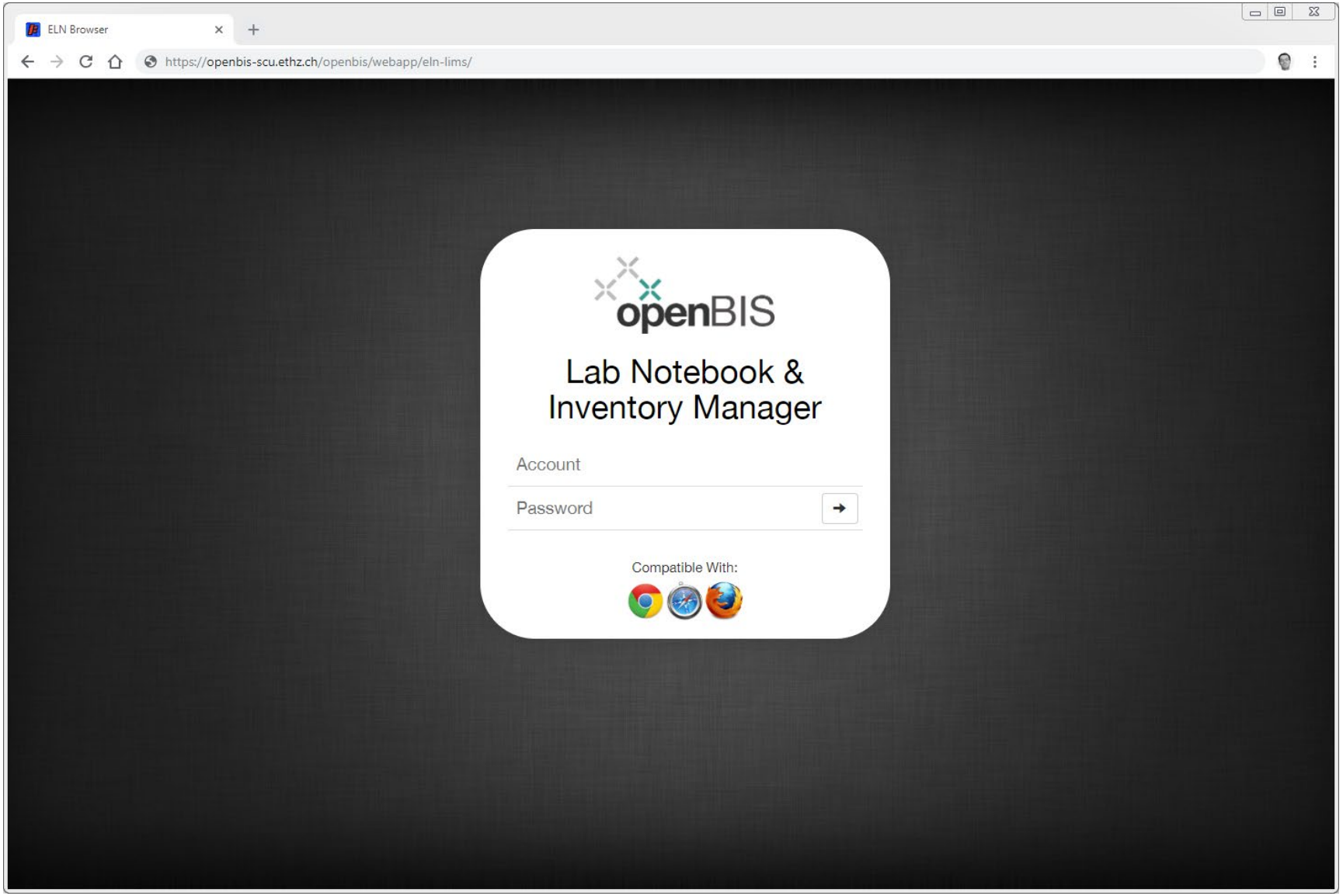
openBIS “vanilla”



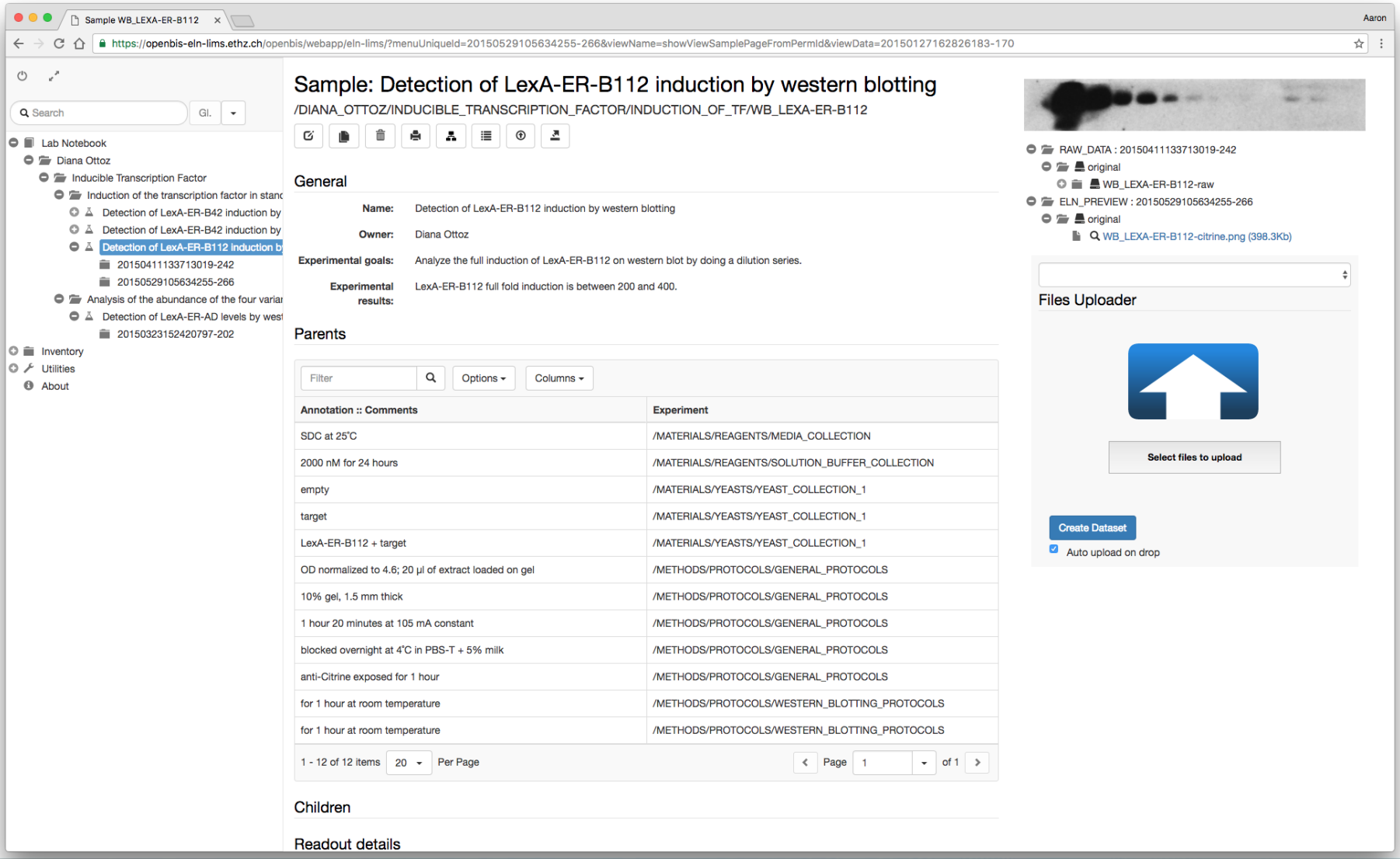
Current technologies

Screening core technology

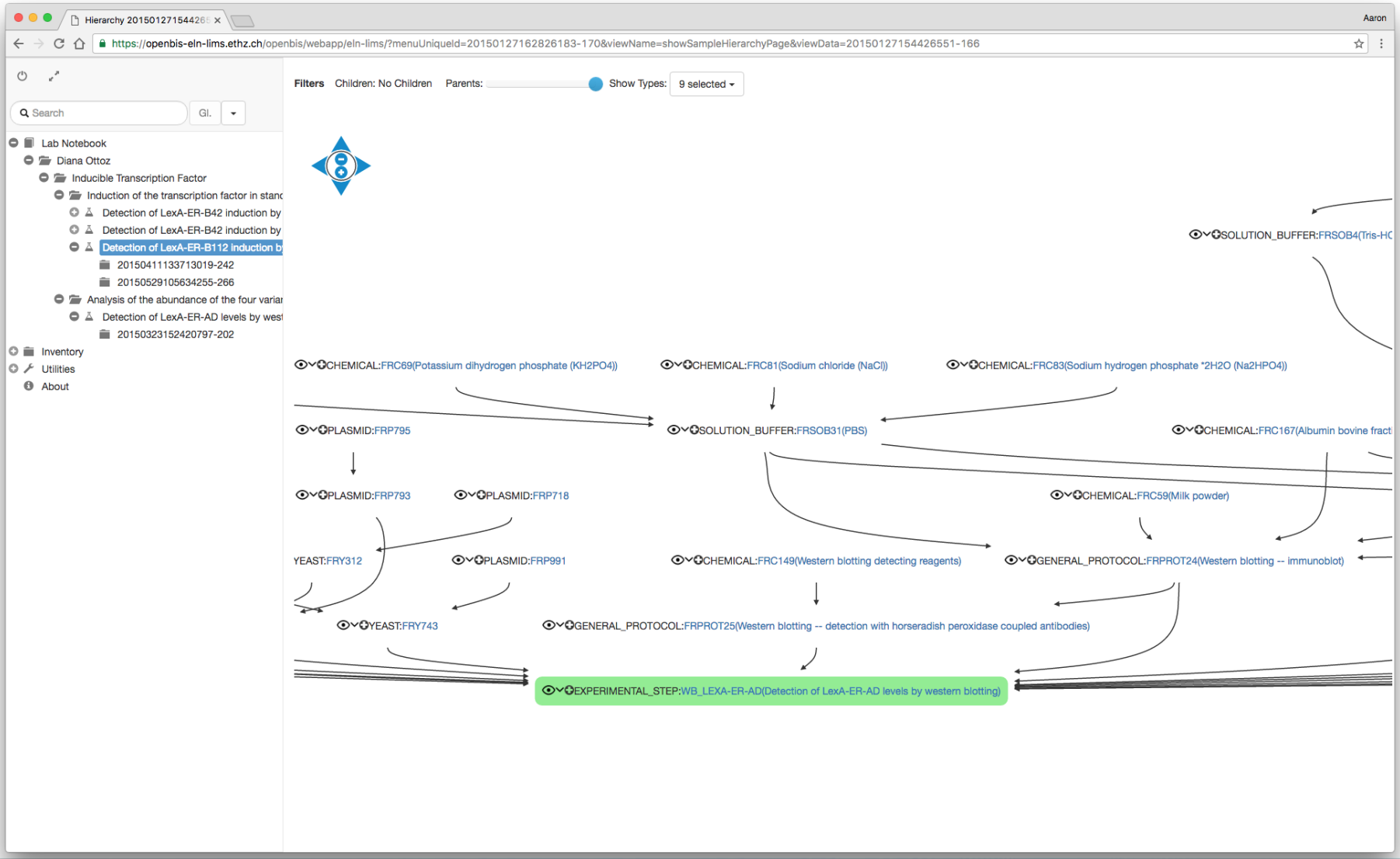



ELN Browser
https://openbis-scu.ethz.ch/openbis/webapp/eln-lims/
openBIS
Lab Notebook &
Inventory Manager
Account
Password
Compatible With:

Custom web apps

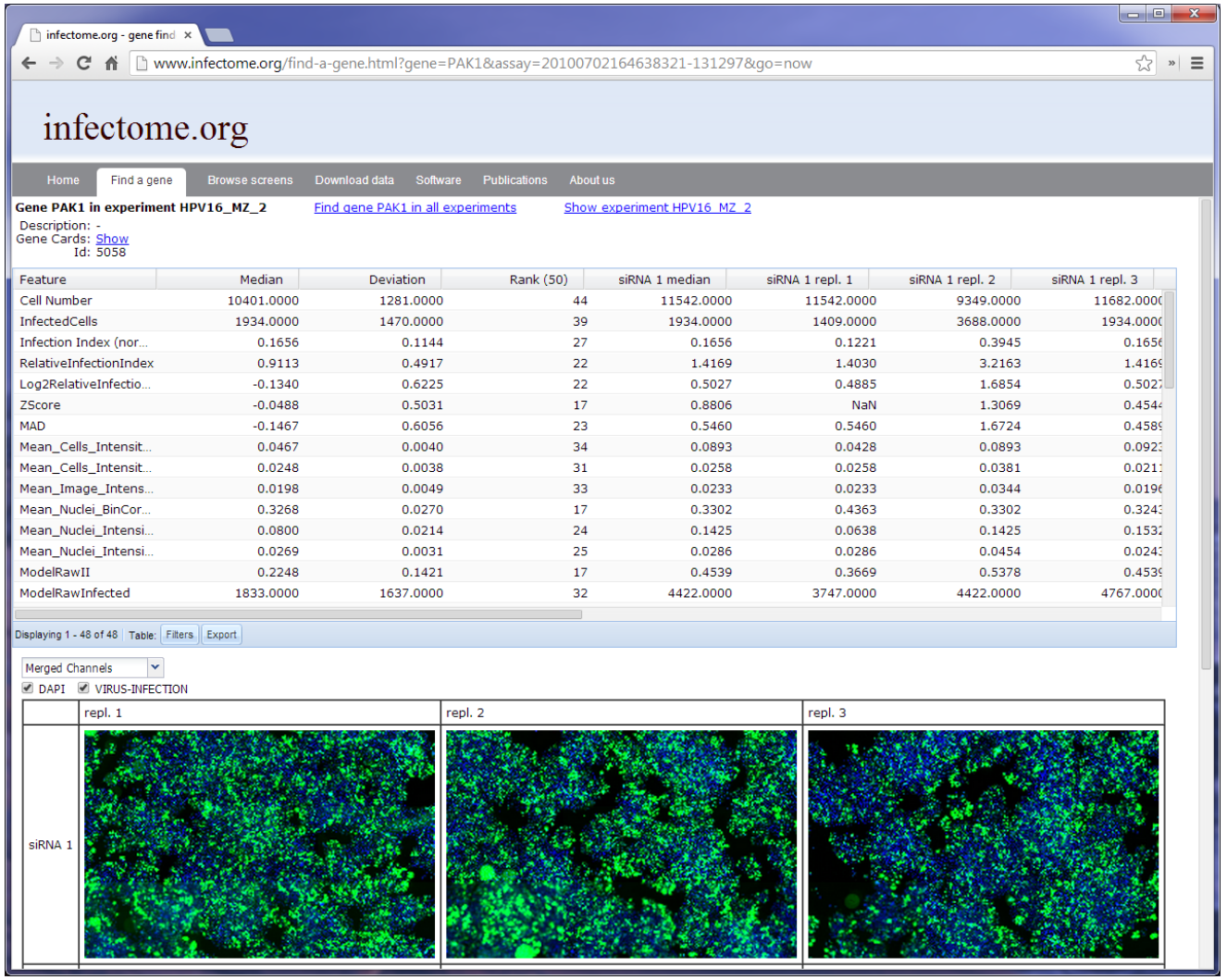


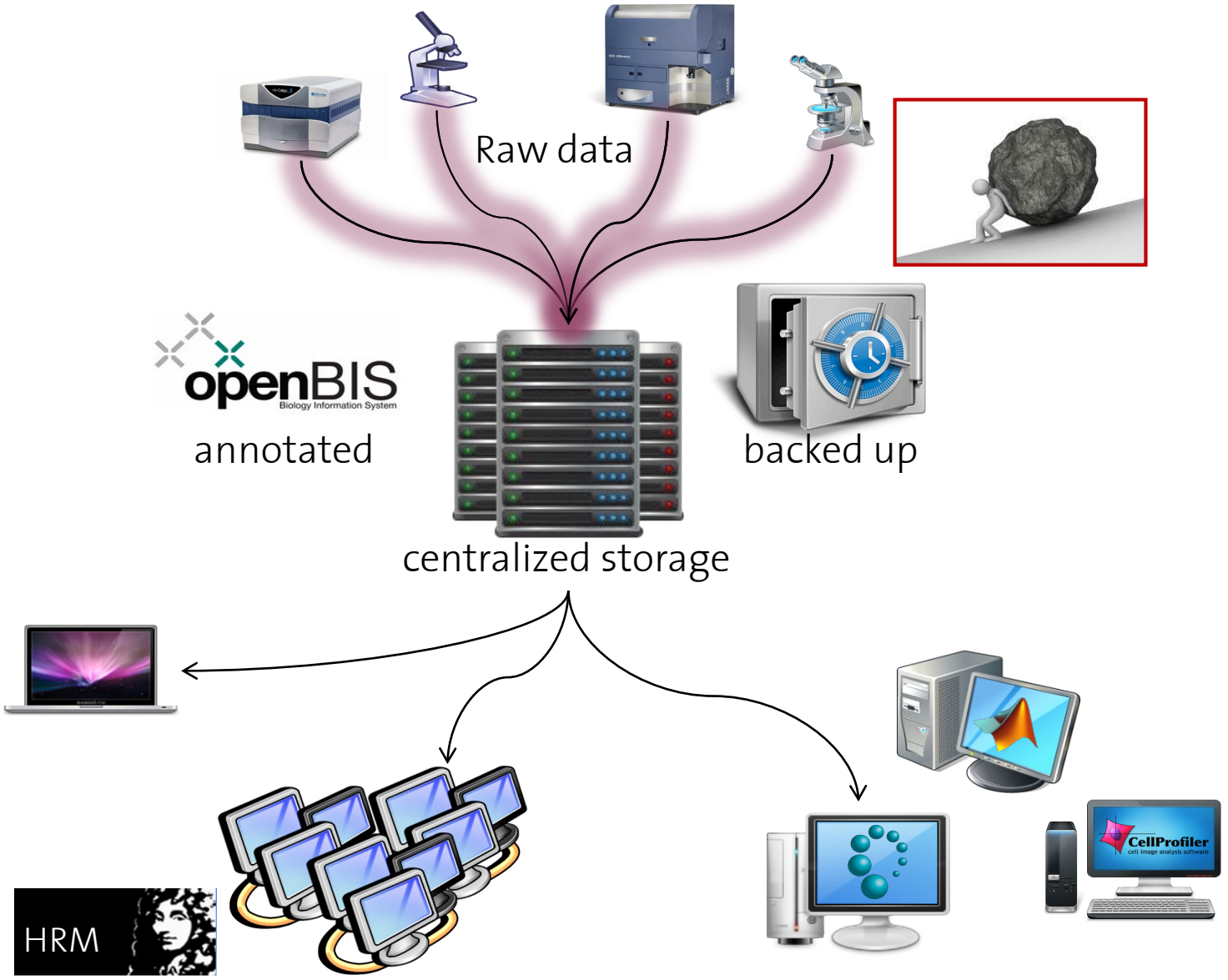
Custom web apps



Embedded openBIS

Embedded openBIS

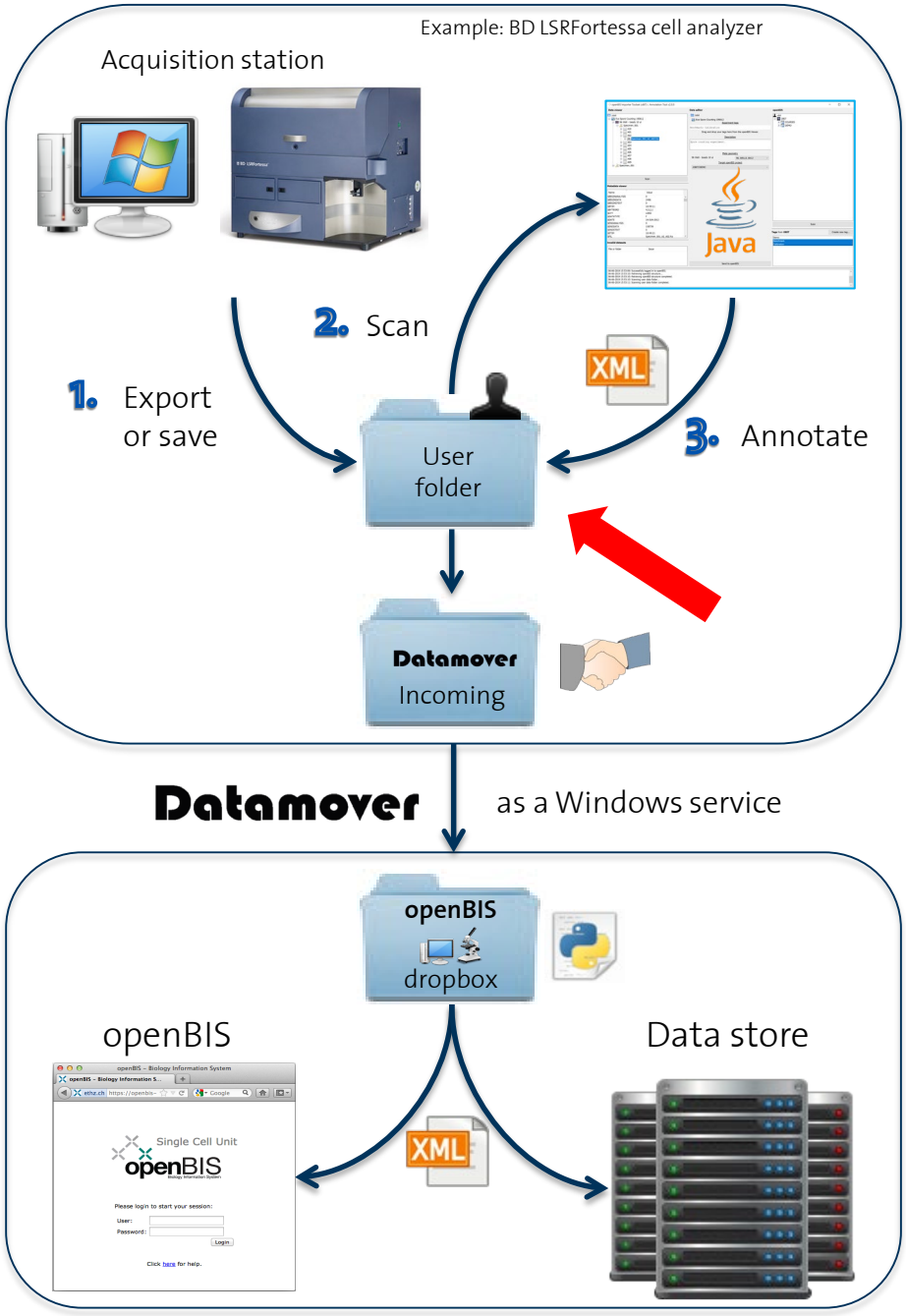


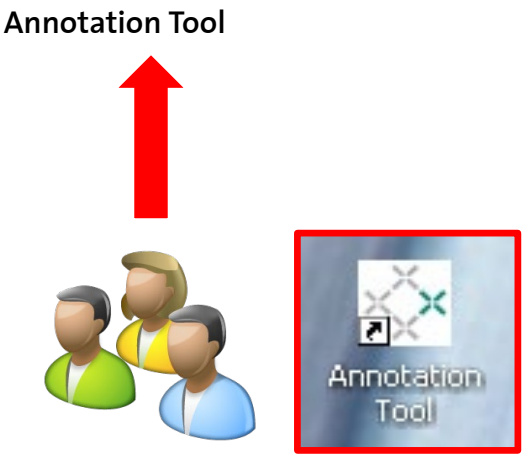

Raw data
openBIS
Biology Information System
annotated
backed up
centralized storage
HRM
CellProfiler
cell image analysis software

oBIT – openBIS Importer Toolset

- The **openBIS Importer Toolset** is a tightly integrated collection of tools that allows for the semi-automated, semi-unsupervised registration of annotated datasets into openBIS directly from the acquisition stations.

- It also extends openBIS with custom data viewers and server-side core plug-ins packaged into two new core technologies (flow cytometry and microscopy).


Example: BD LSRFortessa cell analyzer
Acquisition station
Java
2. Scan
XML
1. Export
or save
User
folder
3. Annotate
Datamover
Incoming
Datamover
as a Windows service
openBIS
dropbox
openBIS
Data store
Single Cell Unit
openBIS
XML


Annotation Tool
Annotation
Tool

Supported hardware

- Flow cytometry
  - BD LSR Fortessa
  - BD FACS Aria III
  - BD Influx
  - Bio-Rad S3e Cell Sorter
  - BC MOFLO XDP Sorter
- Microscopy
  - All microscopes with native formats (ND2, LIF, CZI, ...)
  - YouScope acquisitions
  - Generic TIFF series

Flow Cytometry Core Technology

Microscopy Core Technology

Supported software

- Flow cytometry
  - BD FACS DIVA 6.x, 7.x, 8.x
  - BD Sortware 1.x
  - ProSort 1.x
  - Summit 1.x
  - FCS 3.0, 3.1
- Microscopy
  - bio-formats 5.9.2
  - custom readers

Flow Cytometry Core Technology

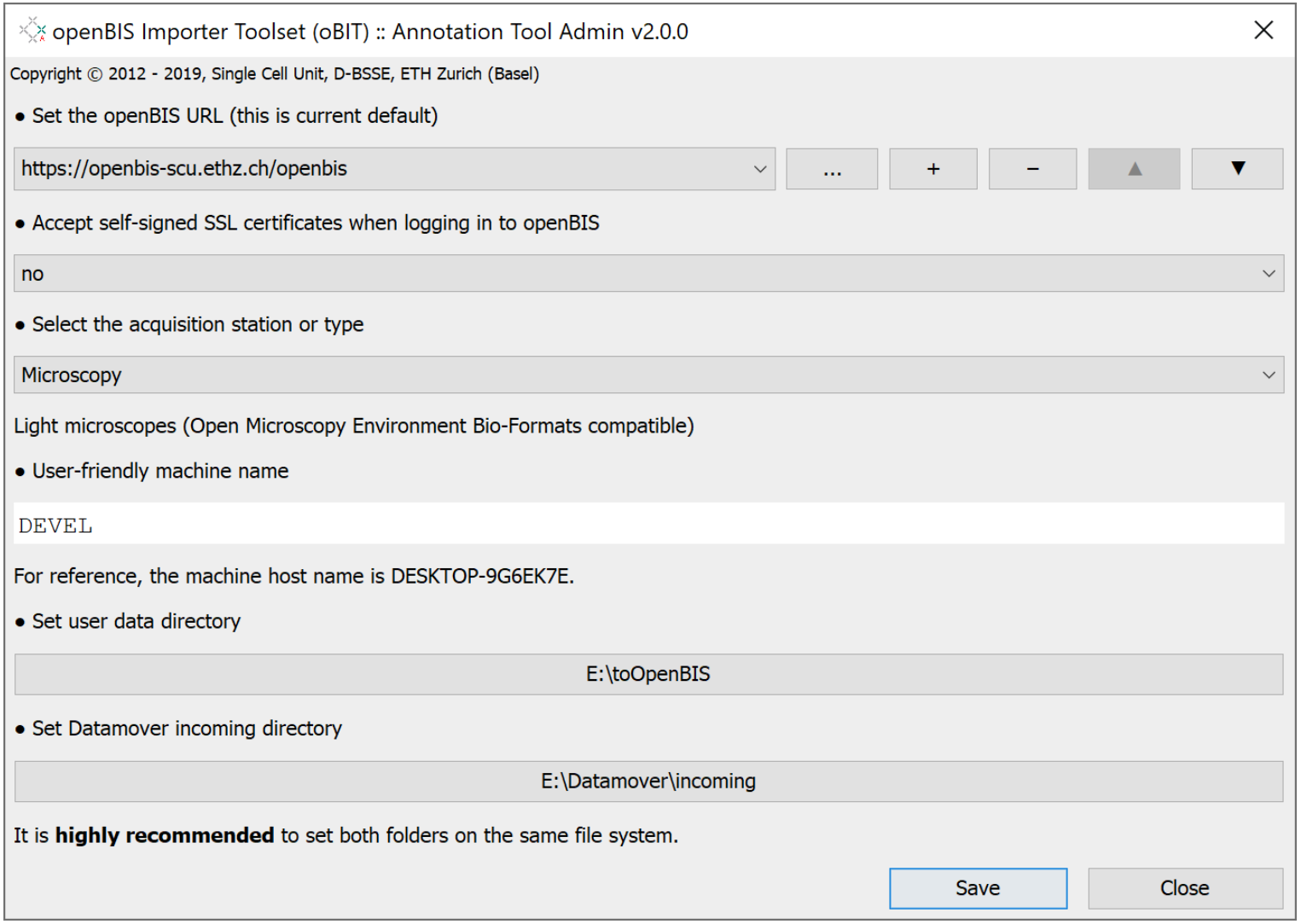
Microscopy Core Technology

- openBIS 16.05.x (oBIT < 1.0), 18.06.x (oBIT 1.1), 19.06.x (oBIT 2.0)
  - ELN-LIMS plug-in integration (oBIT 2.0)

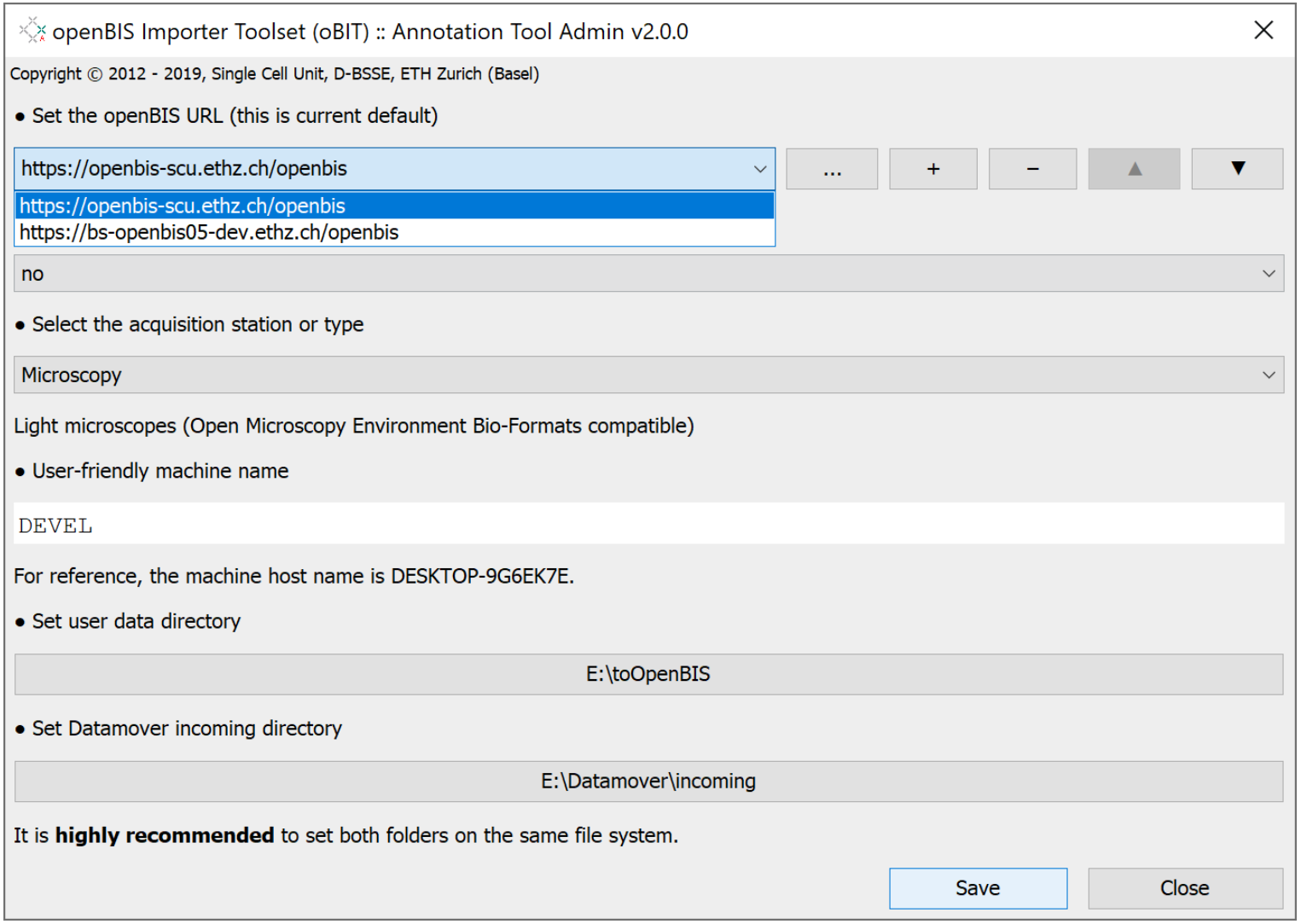
oBIT configuration

oBIT for the facility administrator.

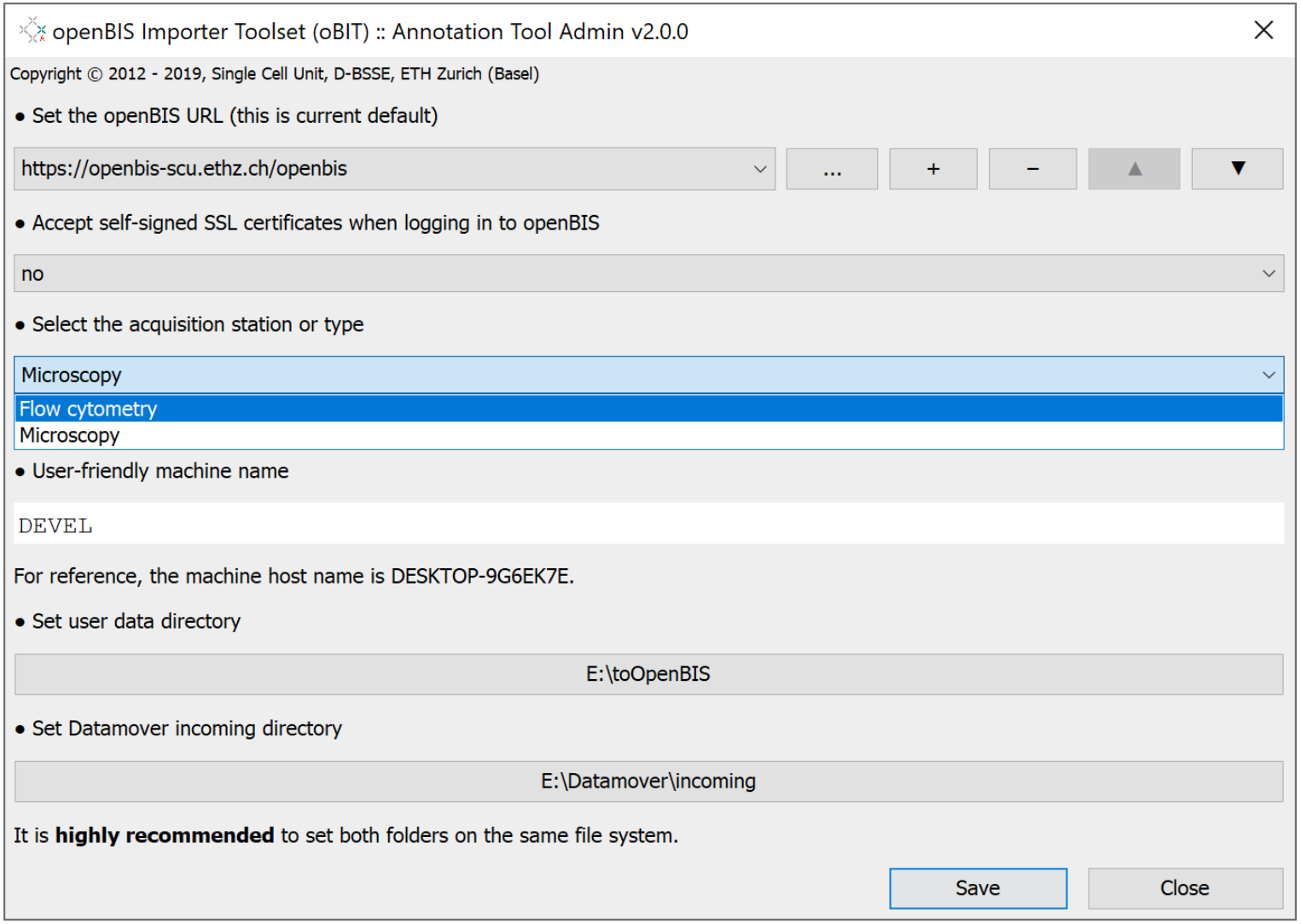
Annotation Tool :: Admin



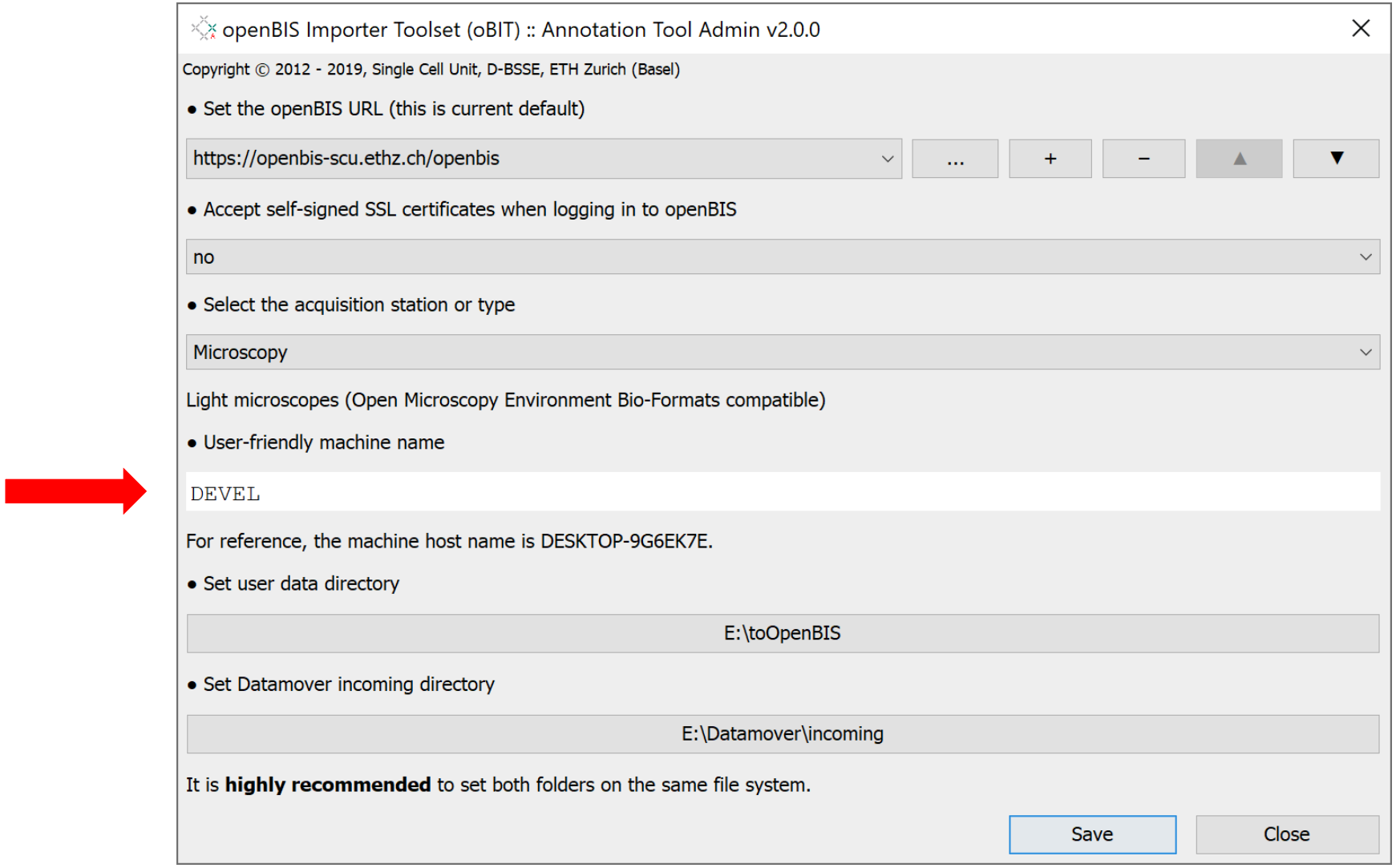
Annotation Tool :: Admin



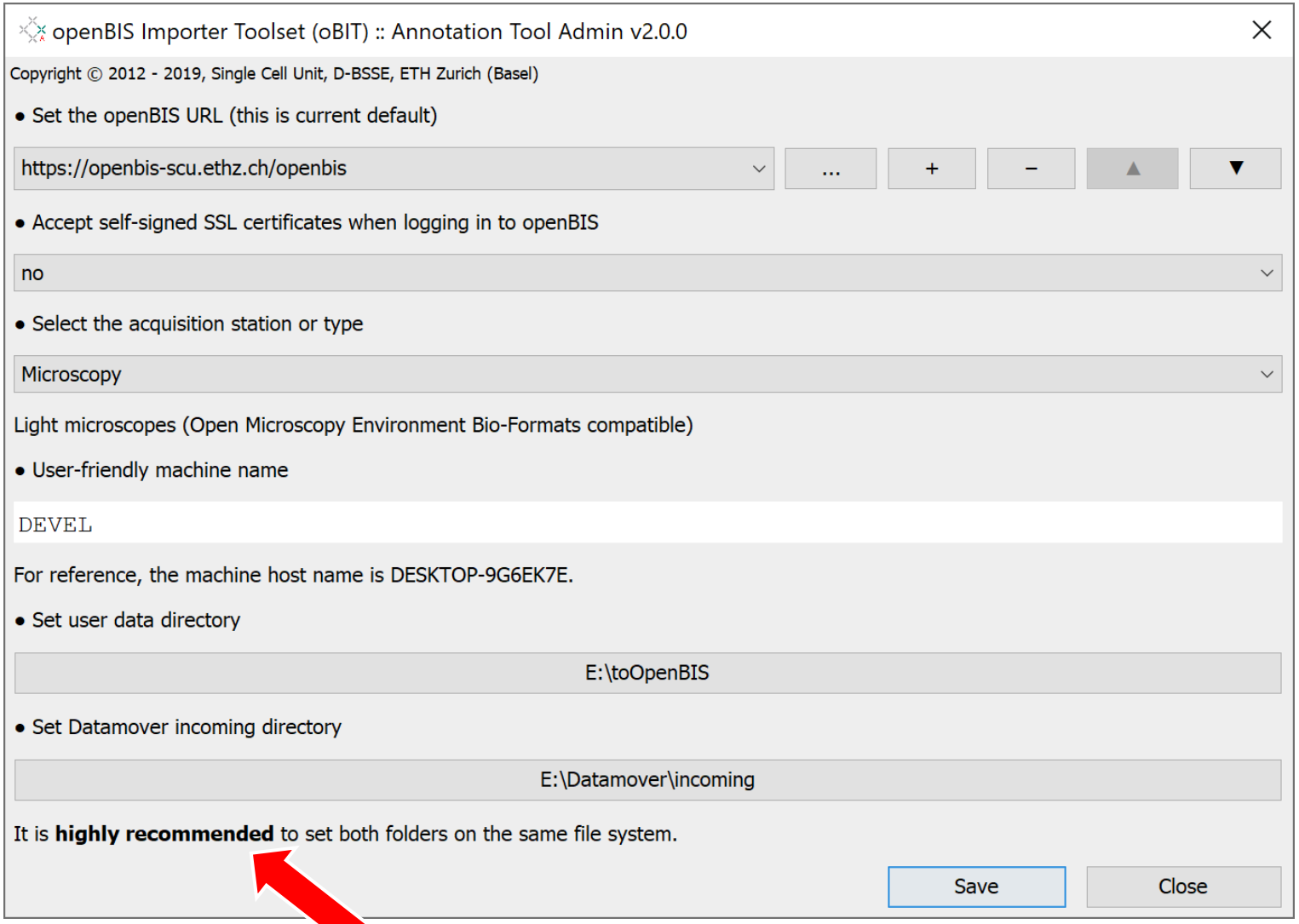
Annotation Tool :: Admin



Annotation Tool :: Admin



Annotation Tool :: Admin



oBIT workflows

oBIT from the user perspective.

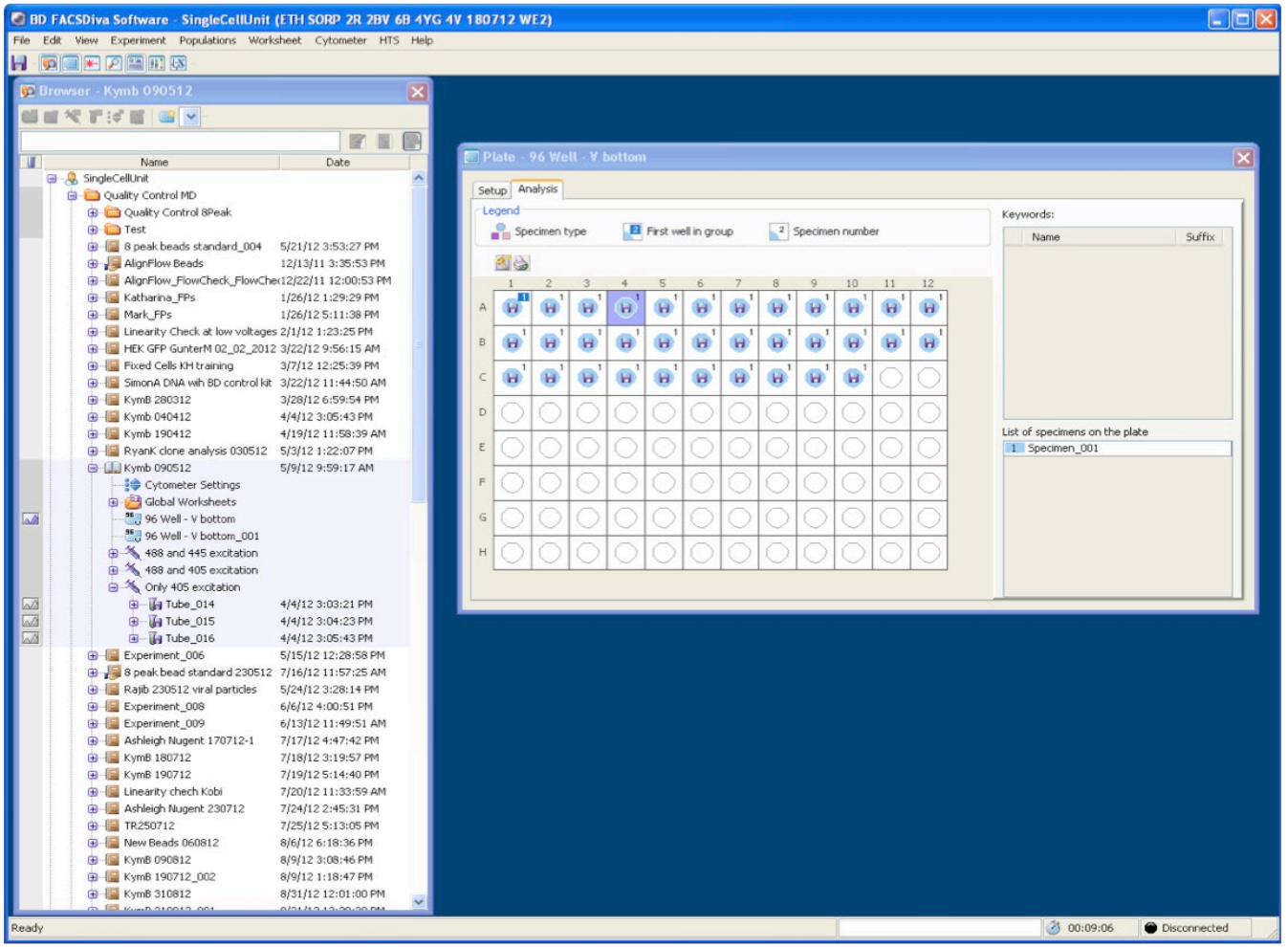
BD BioSciences Cell Analyzers and Sorters

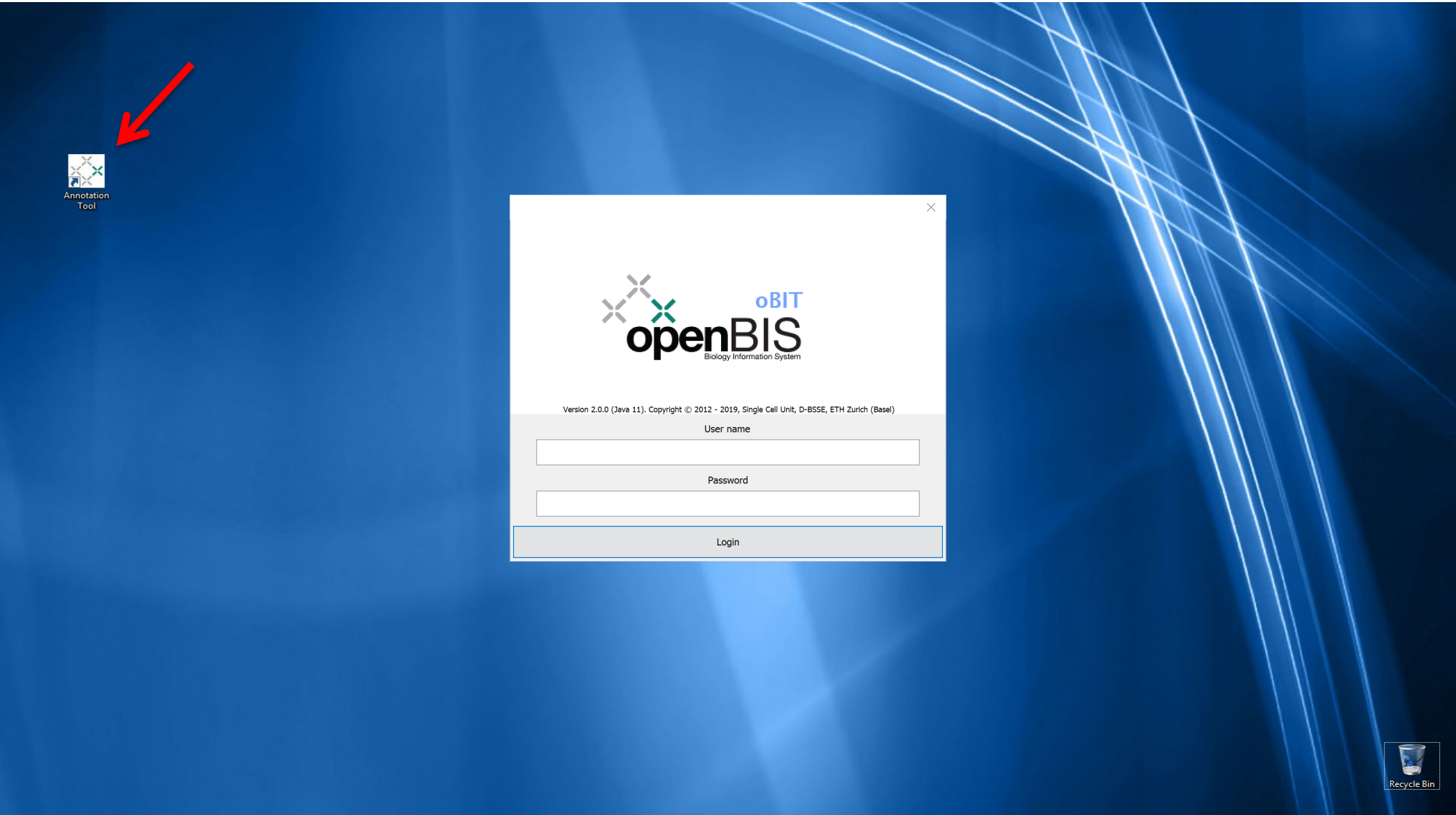
BD LSRFortessa cell analyzer

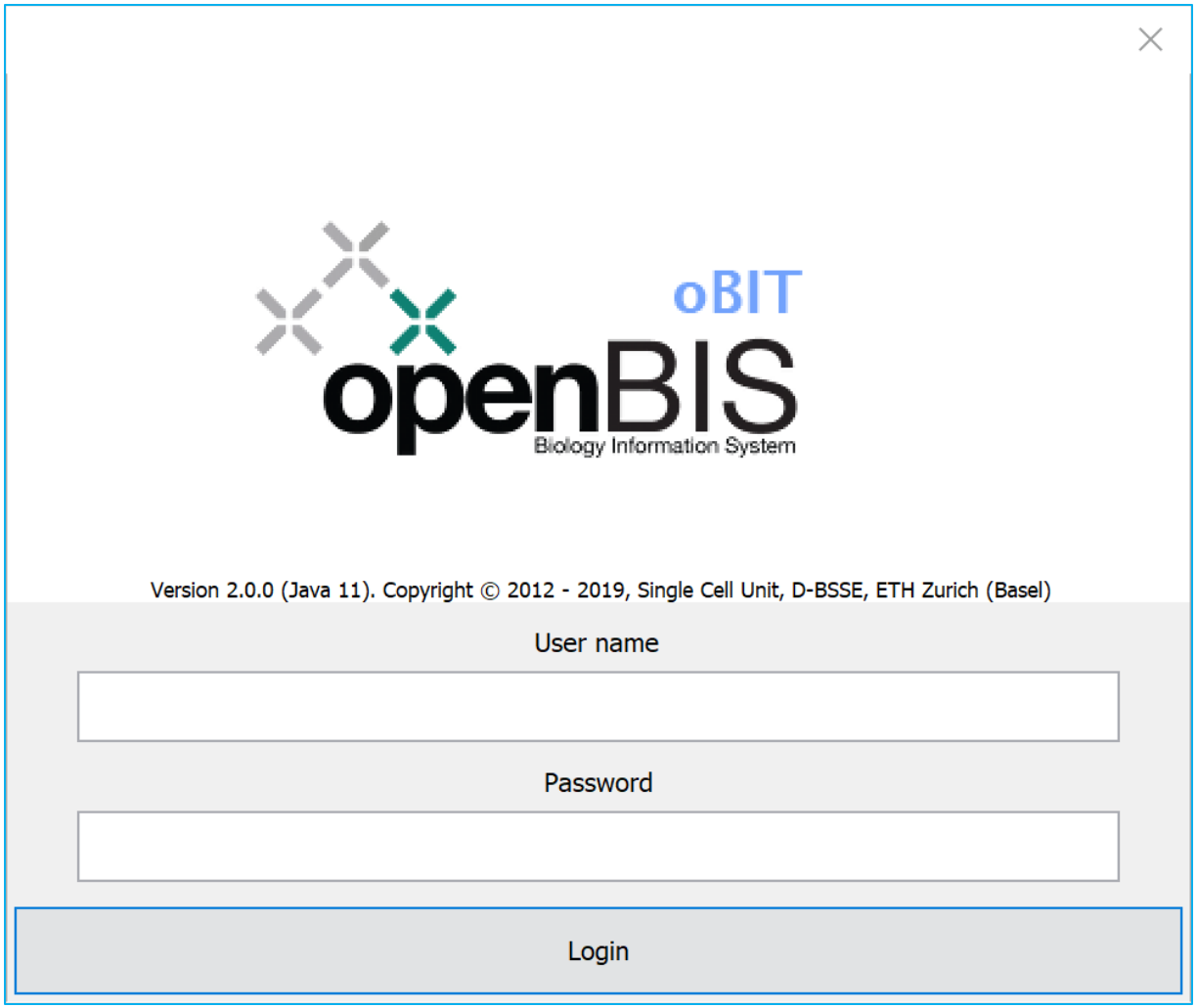
http://www.bdbiosciences.com/instruments/lsr/index.jsp

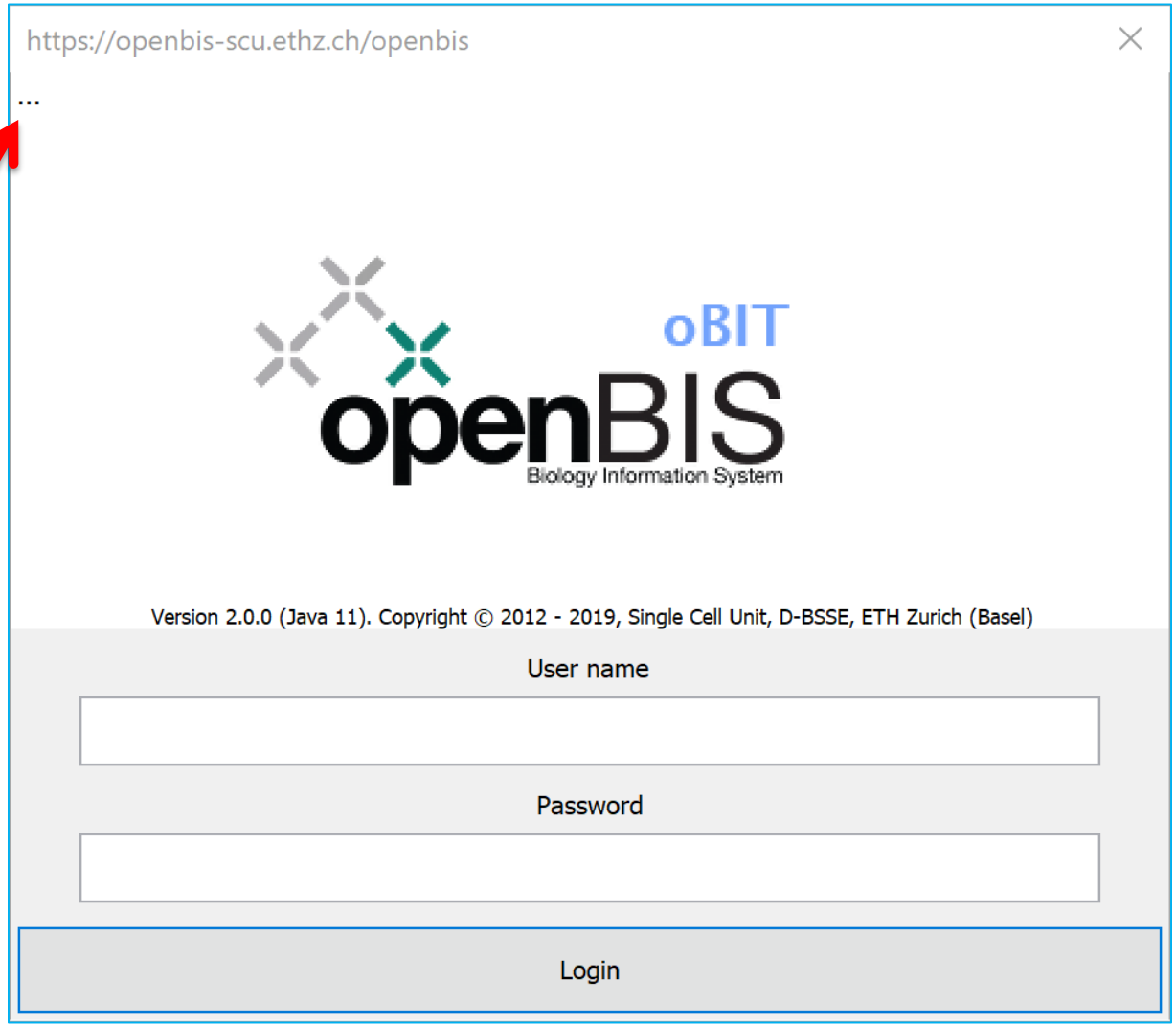
BD LSRFortessa cell analyzer

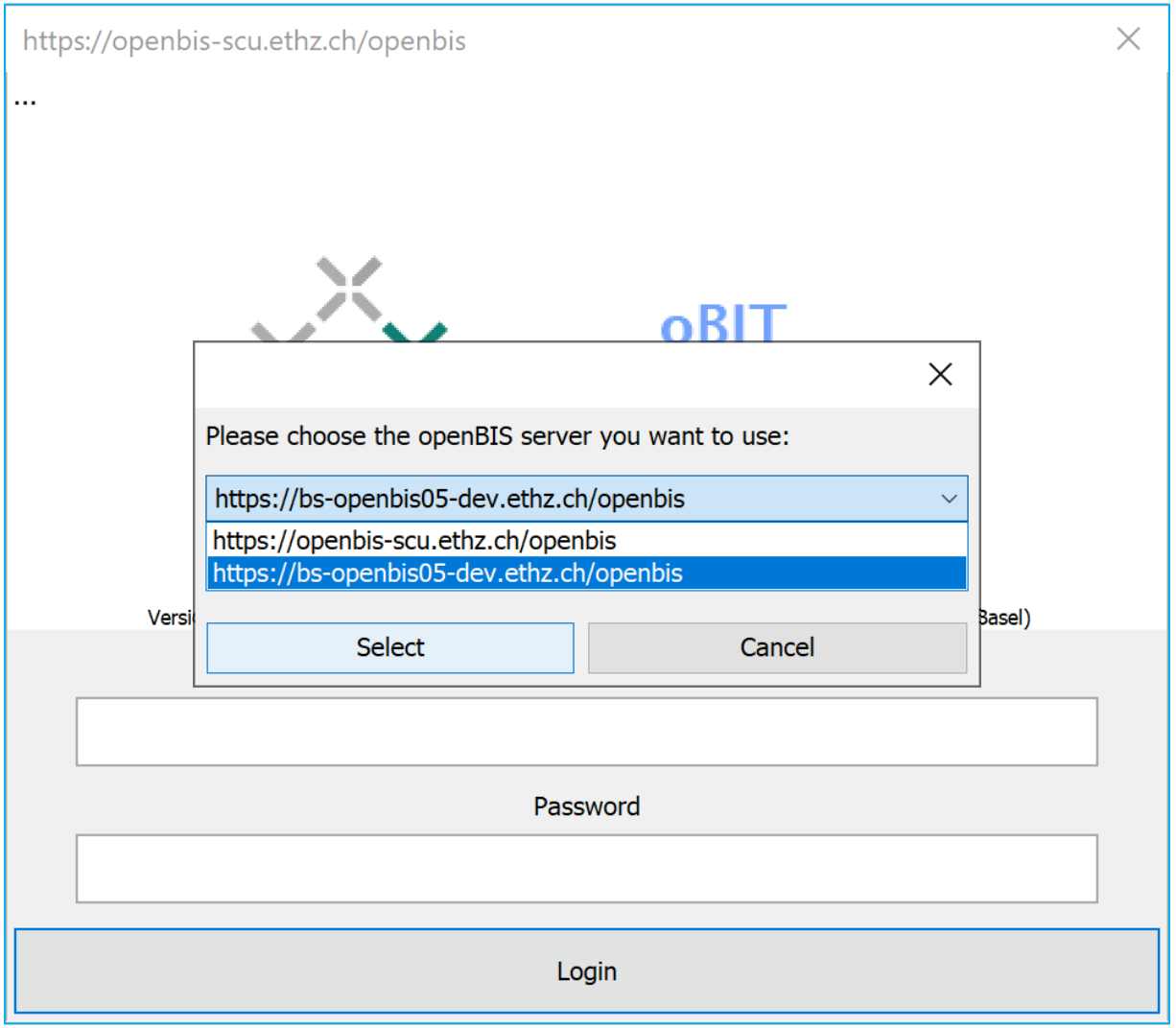
Export to user folder

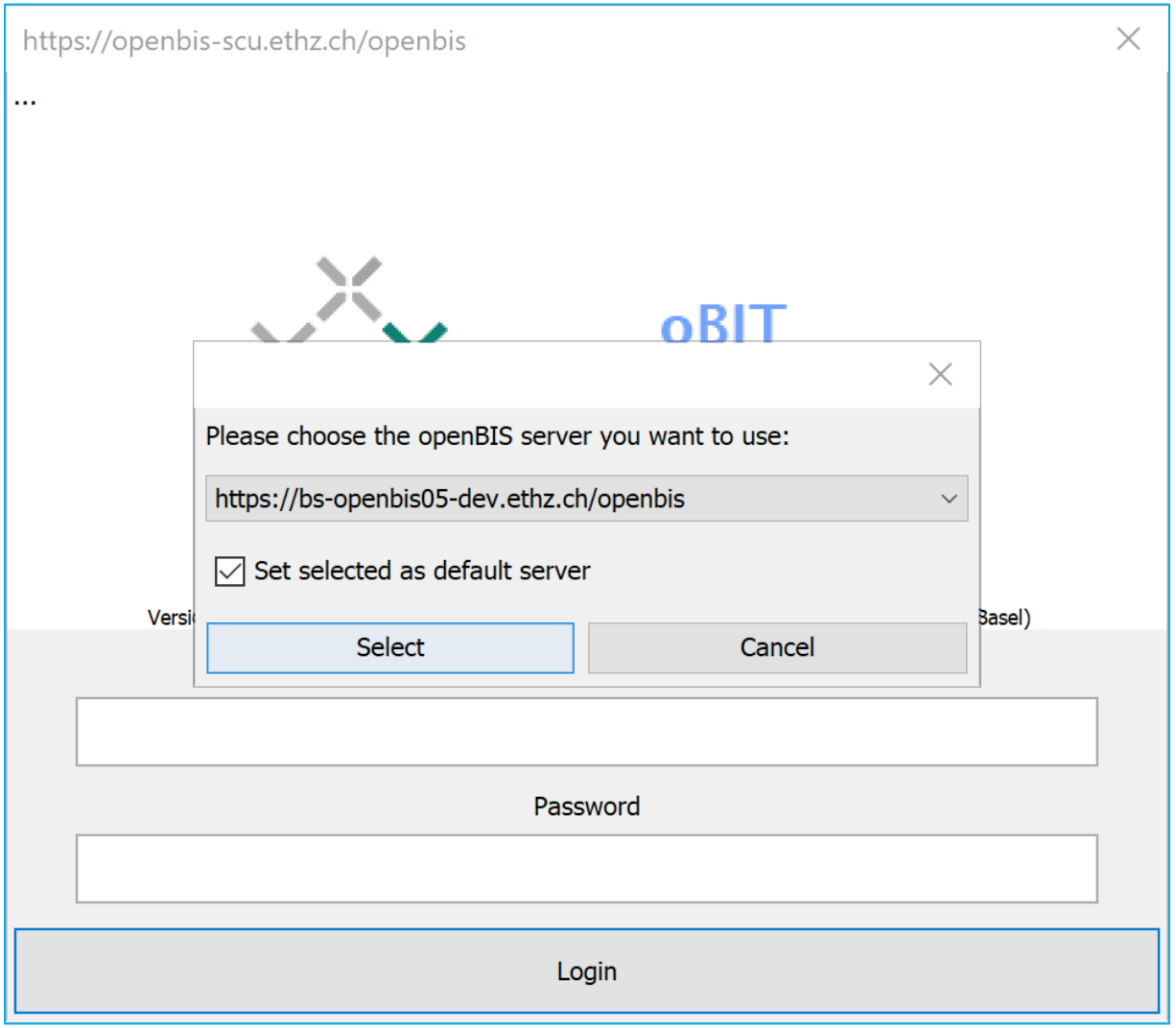


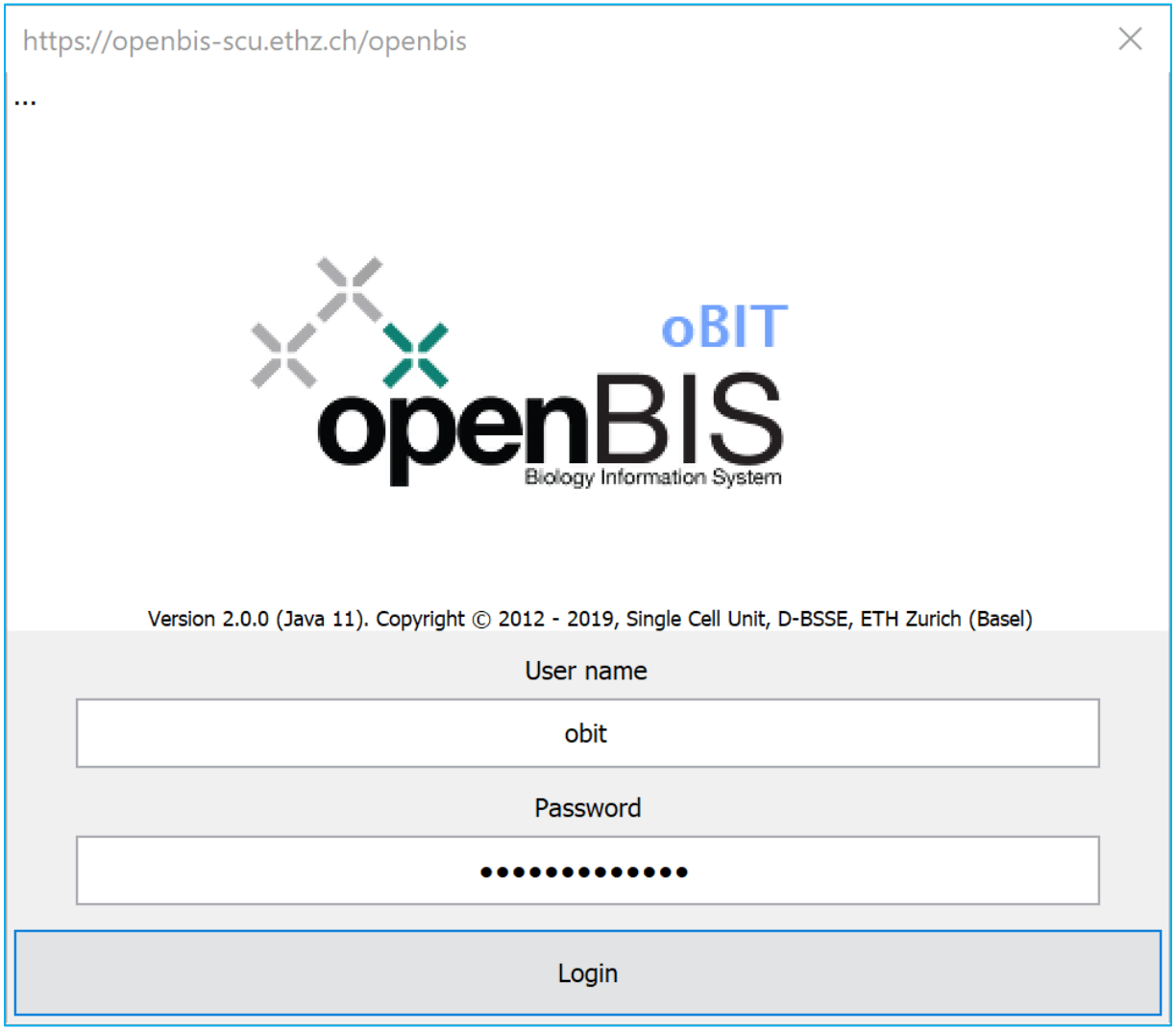

Annotation Tool
oBIT
openBIS
Biology Information System
Version 2.0.0 (Java 11). Copyright © 2012 - 2019, Single Cell Unit, D-BSSE, ETH Zurich (Basel)
User name
Password
Login
Recycle Bin
EN
17:03
15.09.2015

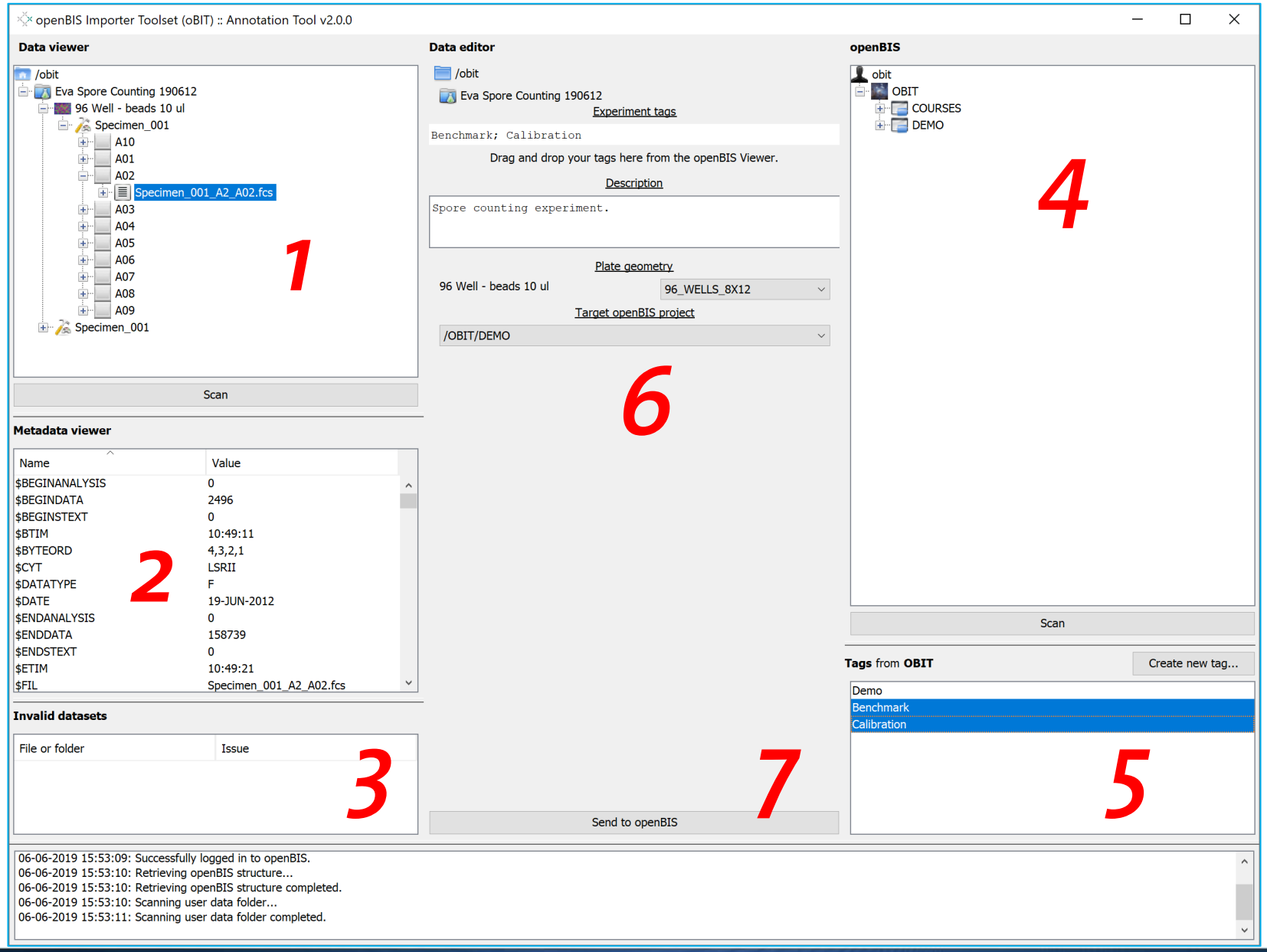

oBIT
openBIS
Biology Information System
Version 2.0.0 (Java 11). Copyright © 2012 - 2019, Single Cell Unit, D-BSSE, ETH Zurich (Basel)
User name
Password
Login

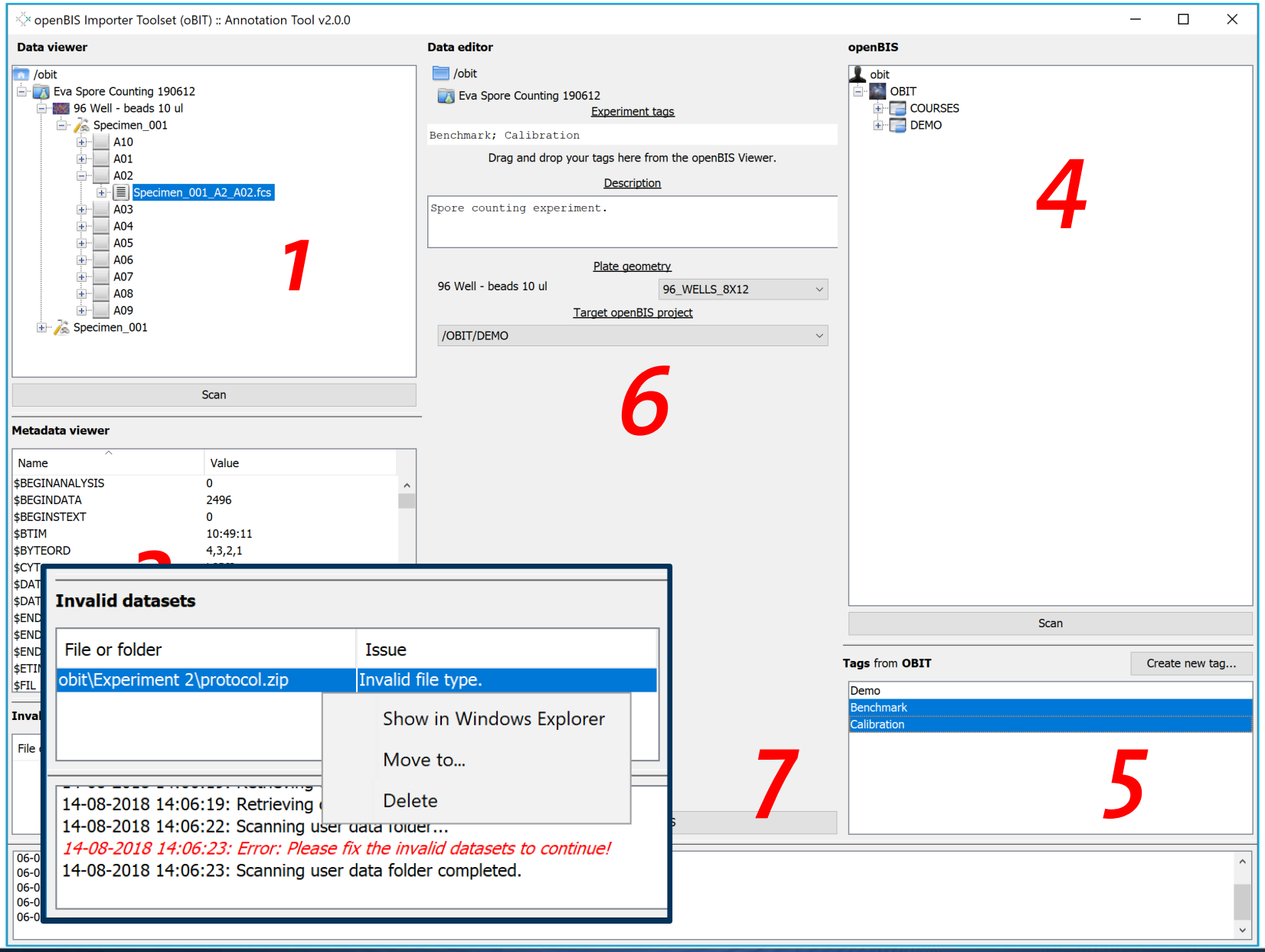

https://openbis-scu.ethz.ch/openbis
...
oBIT
openBIS
Biology Information System
Version 2.0.0 (Java 11). Copyright © 2012 - 2019, Single Cell Unit, D-BSSE, ETH Zurich (Basel)
User name
Password
Login

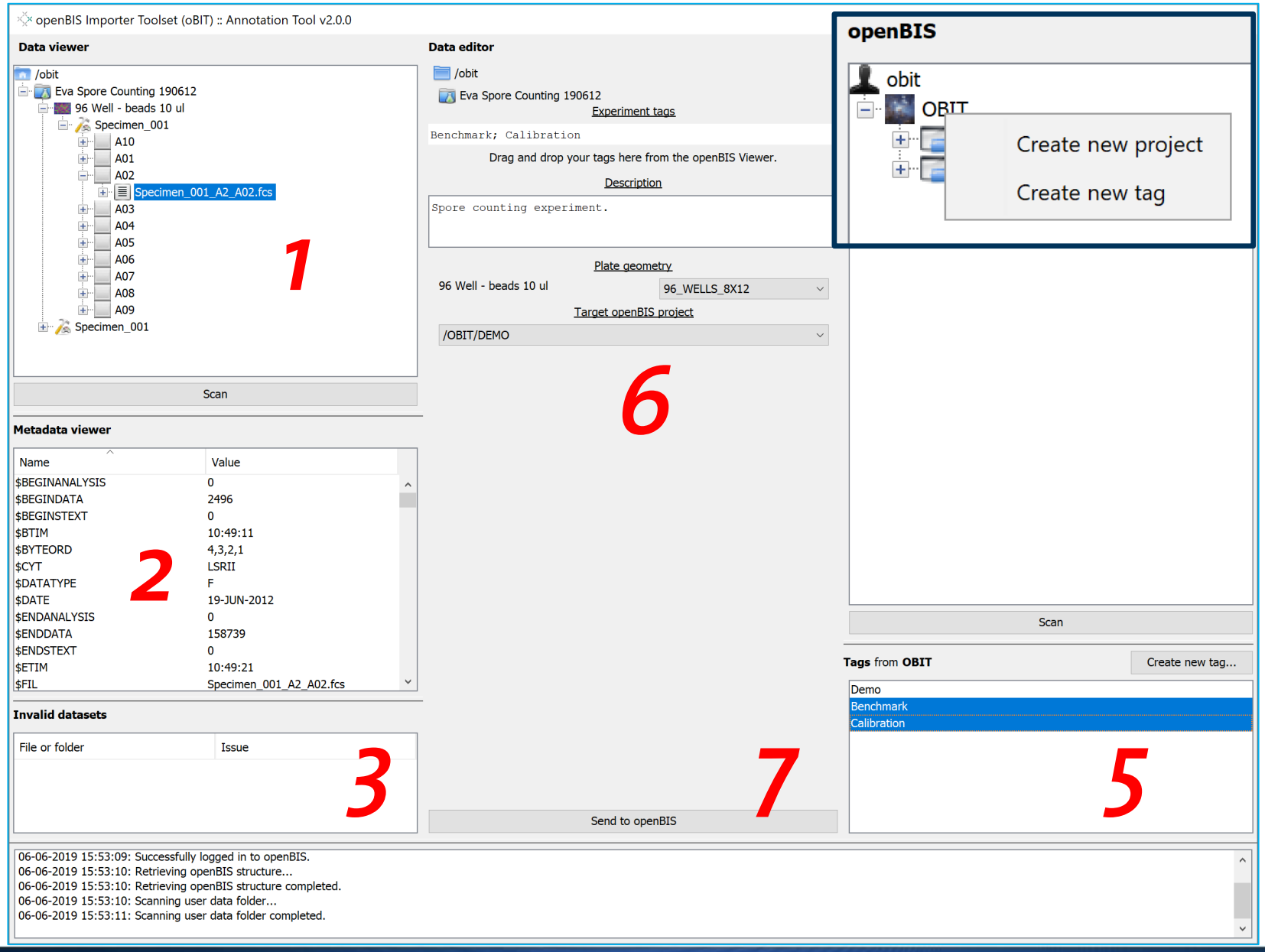

https://openbis-scu.ethz.ch/openbis
...
oBIT
Please choose the openBIS server you want to use:
https://bs-openbis05-dev.ethz.ch/openbis
https://openbis-scu.ethz.ch/openbis
https://bs-openbis05-dev.ethz.ch/openbis
Select
Cancel
Basel)
Password
Login

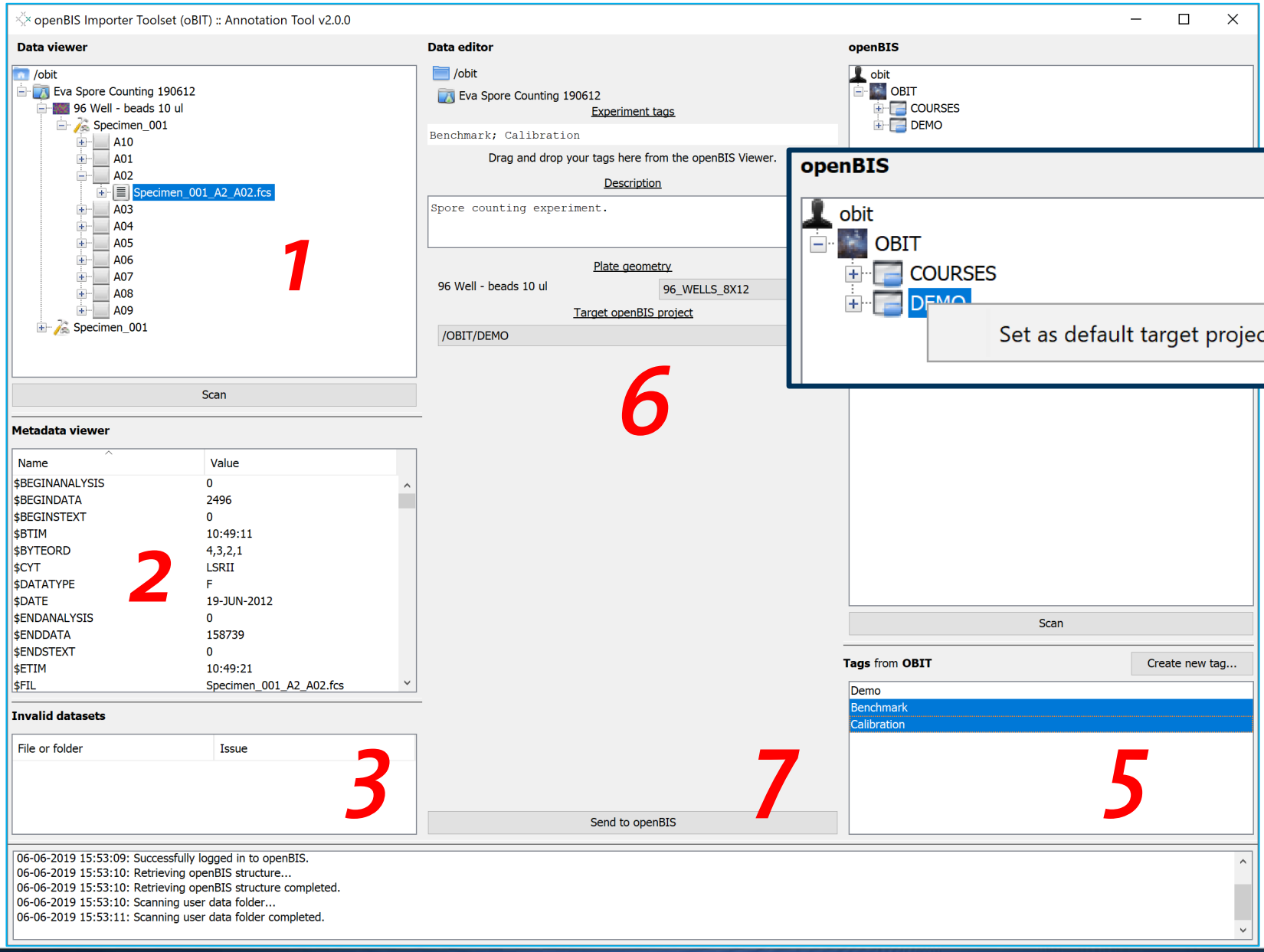

https://openbis-scu.ethz.ch/openbis
...
oBIT
Please choose the openBIS server you want to use:
https://bs-openbis05-dev.ethz.ch/openbis
Set selected as default server
Select
Cancel
Password
Login

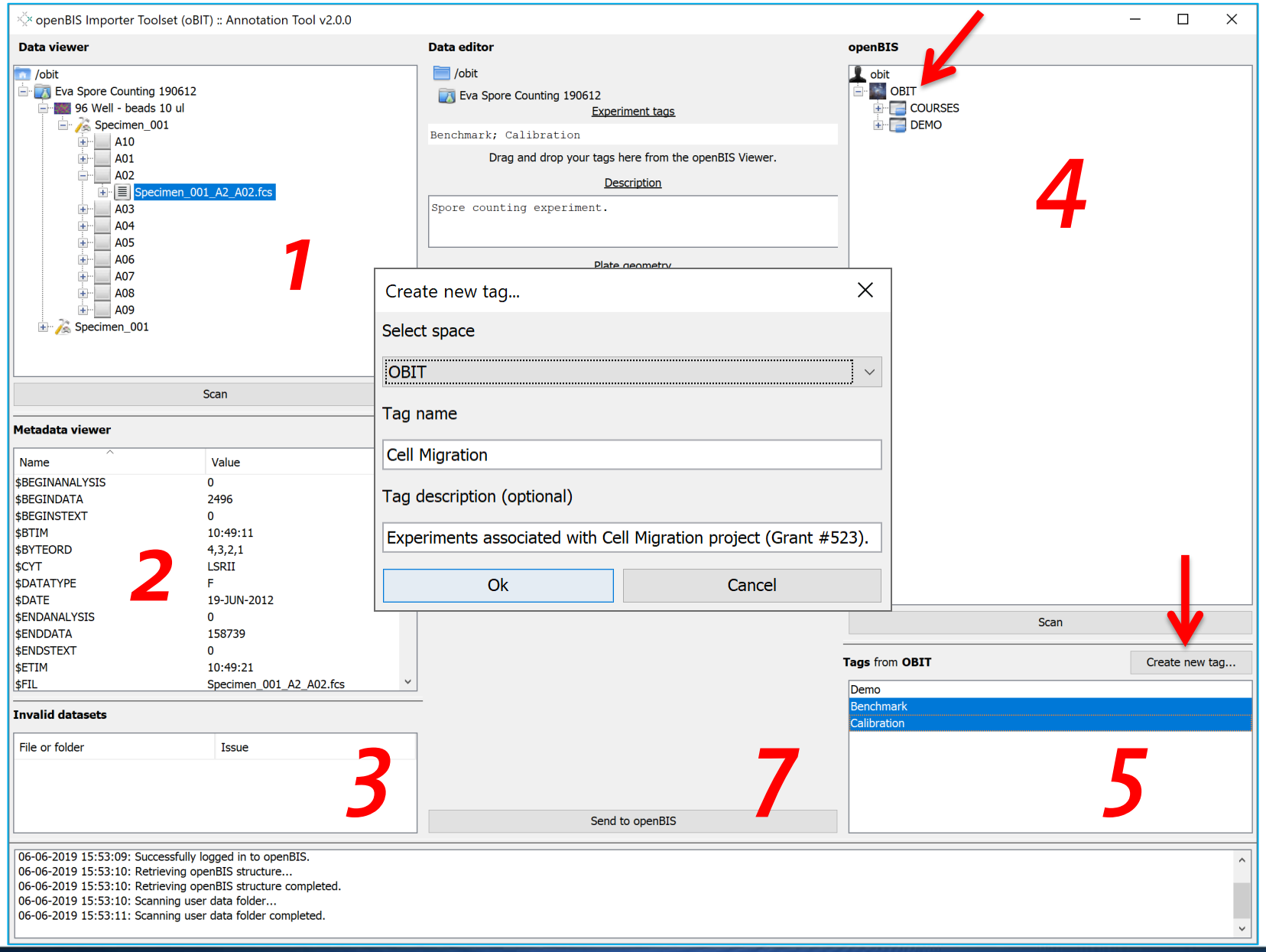

https://openbis-scu.ethz.ch/openbis
...
oBIT
openBIS
Biology Information System
Version 2.0.0 (Java 11). Copyright © 2012 - 2019, Single Cell Unit, D-BSSE, ETH Zurich (Basel)
User name
obit
Password
Login

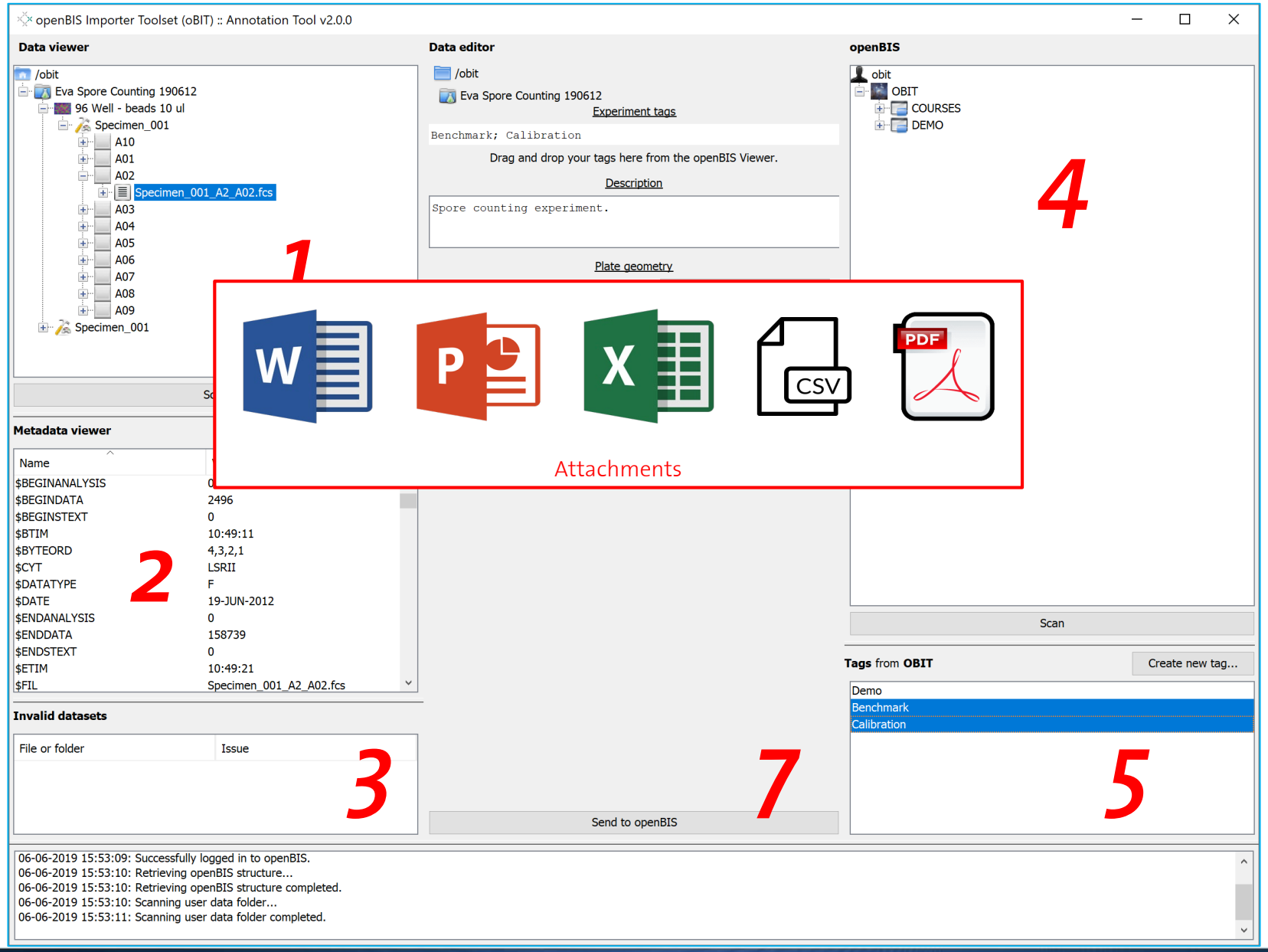

openBIS Importer Toolset (oBIT) :: Annotation Tool v2.0.0
Data viewer
/obit
Eva Spore Counting 190612
96 Well - beads 10 ul
Specimen_001
A10
A01
A02
Specimen_001_A2_A02.fcs
A03
A04
A05
A06
A07
A08
A09
Specimen_001
1
Scan
Metadata viewer
Name
Value
$BEGINANALYSIS 0
$BEGINDATA 2496
$BEGINSTEXT 0
$BTIM 10:49:11
$BYTEORD 4,3,2,1
$CYT LSRII
$DATATYPE F
$DATE 19-JUN-2012
$ENDANALYSIS 0
$ENDDATA 158739
$ENDSTEXT 0
$ETIM 10:49:21
$FIL Specimen_001_A2_A02.fcs
2
Invalid datasets
File or folder
Issue
3
Data editor
/obit
Eva Spore Counting 190612
Experiment tags
Benchmark; Calibration
Drag and drop your tags here from the openBIS Viewer.
Description
Spore counting experiment.
Plate geometry
96 Well - beads 10 ul
96_WELLS_8X12
Target openBIS project
/OBIT/DEMO
6
7
Send to openBIS
openBIS
obit
OBIT
COURSES
DEMO
4
Scan
Tags from OBIT
Create new tag...
Demo
Benchmark
Calibration
5
06-06-2019 15:53:09: Successfully logged in to openBIS.
06-06-2019 15:53:10: Retrieving openBIS structure...
06-06-2019 15:53:10: Retrieving openBIS structure completed.
06-06-2019 15:53:10: Scanning user data folder...
06-06-2019 15:53:11: Scanning user data folder completed.

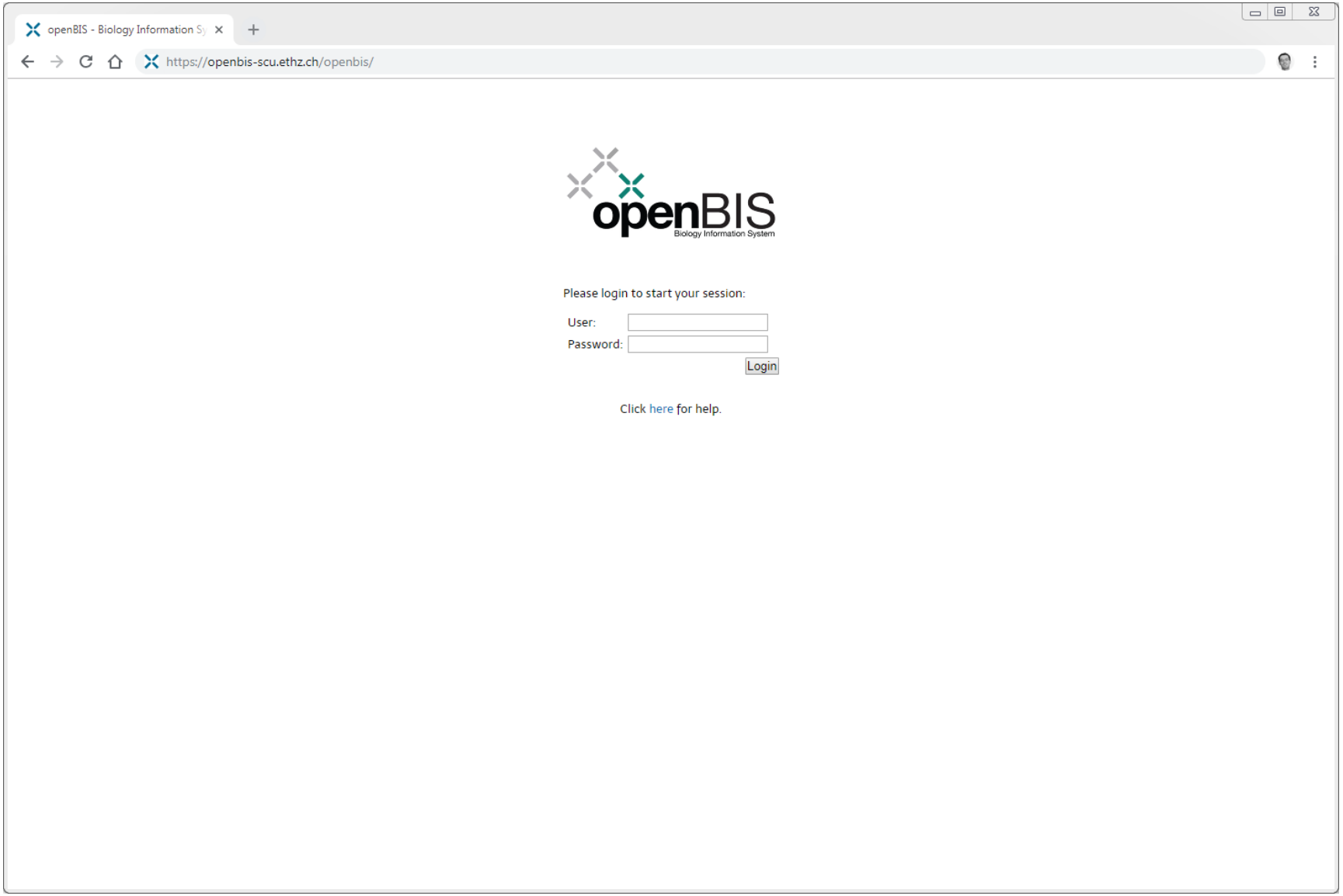

openBIS Importer Toolset (oBIT) :: Annotation Tool v2.0.0
Data viewer
/obit
Eva Spore Counting 190612
96 Well - beads 10 ul
Specimen_001
A10
A01
A02
Specimen_001_A2_A02.fcs
A03
A04
A05
A06
A07
A08
A09
Specimen_001
1
Scan
Metadata viewer
Name
Value
$BEGINANALYSIS 0
$BEGINDATA 2496
$BEGINSTEXT 0
$BTIM 10:49:11
$BYTEORD 4,3,2,1
Data editor
/obit
Eva Spore Counting 190612
Experiment tags
Benchmark; Calibration
Drag and drop your tags here from the openBIS Viewer.
Description
Spore counting experiment.
Plate geometry
96 Well - beads 10 ul
96_WELLS_8X12
Target openBIS project
/OBIT/DEMO
6
openBIS
obit
OBIT
COURSES
DEMO
4
Scan
Tags from OBIT
Create new tag...
Demo
Benchmark
Calibration
5
Invalid datasets
File or folder
Issue
obit\Experiment 2\protocol.zip
Invalid file type.
Show in Windows Explorer
Move to...
Delete
7
14-08-2018 14:06:19: Retrieving
14-08-2018 14:06:22: Scanning user data folder...
14-08-2018 14:06:23: Error: Please fix the invalid datasets to continue!
14-08-2018 14:06:23: Scanning user data folder completed.

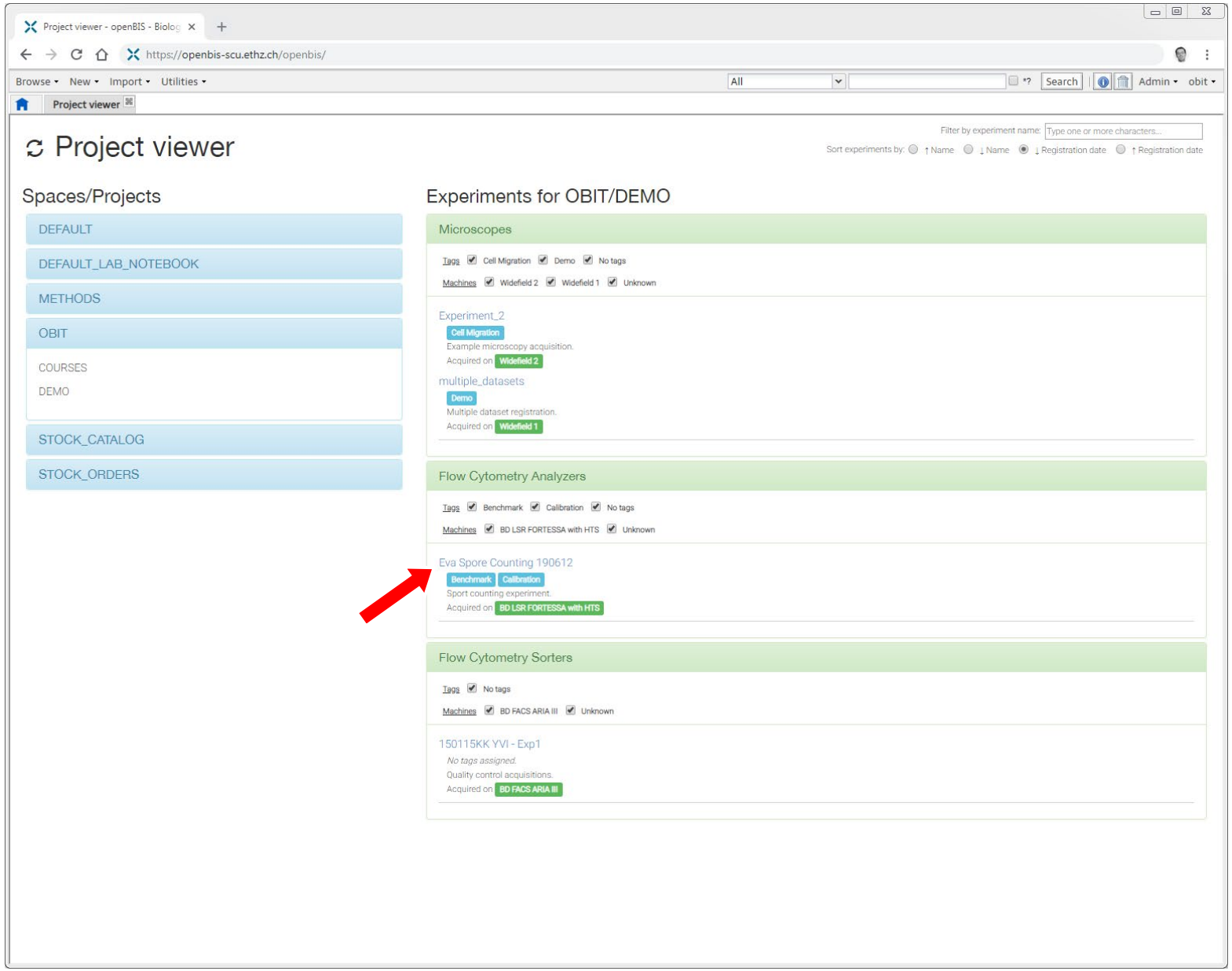

openBIS Importer Toolset (oBIT) :: Annotation Tool v2.0.0
Data viewer
/obit
Eva Spore Counting 190612
96 Well - beads 10 ul
Specimen_001
A10
A01
A02
Specimen_001_A2_A02.fcs
A03
A04
A05
A06
A07
A08
A09
Specimen_001
1
Scan
Metadata viewer
Name
Value
$BEGINANALYSIS 0
$BEGINDATA 2496
$BEGINSTEXT 0
$BTIM 10:49:11
$BYTEORD 4,3,2,1
$CYT LSRII
$DATATYPE F
$DATE 19-JUN-2012
$ENDANALYSIS 0
$ENDDATA 158739
$ENDSTEXT 0
$ETIM 10:49:21
$FIL Specimen_001_A2_A02.fcs
2
Invalid datasets
File or folder
Issue
3
Data editor
/obit
Eva Spore Counting 190612
Experiment tags
Benchmark; Calibration
Drag and drop your tags here from the openBIS Viewer.
Description
Spore counting experiment.
Plate geometry
96 Well - beads 10 ul
96_WELLS_8X12
Target openBIS project
/OBIT/DEMO
6
7
Send to openBIS
openBIS
obit
OBIT
Create new project
Create new tag
Scan
Tags from OBIT
Create new tag...
Demo
Benchmark
Calibration
5
06-06-2019 15:53:09: Successfully logged in to openBIS.
06-06-2019 15:53:10: Retrieving openBIS structure...
06-06-2019 15:53:10: Retrieving openBIS structure completed.
06-06-2019 15:53:10: Scanning user data folder...
06-06-2019 15:53:11: Scanning user data folder completed.

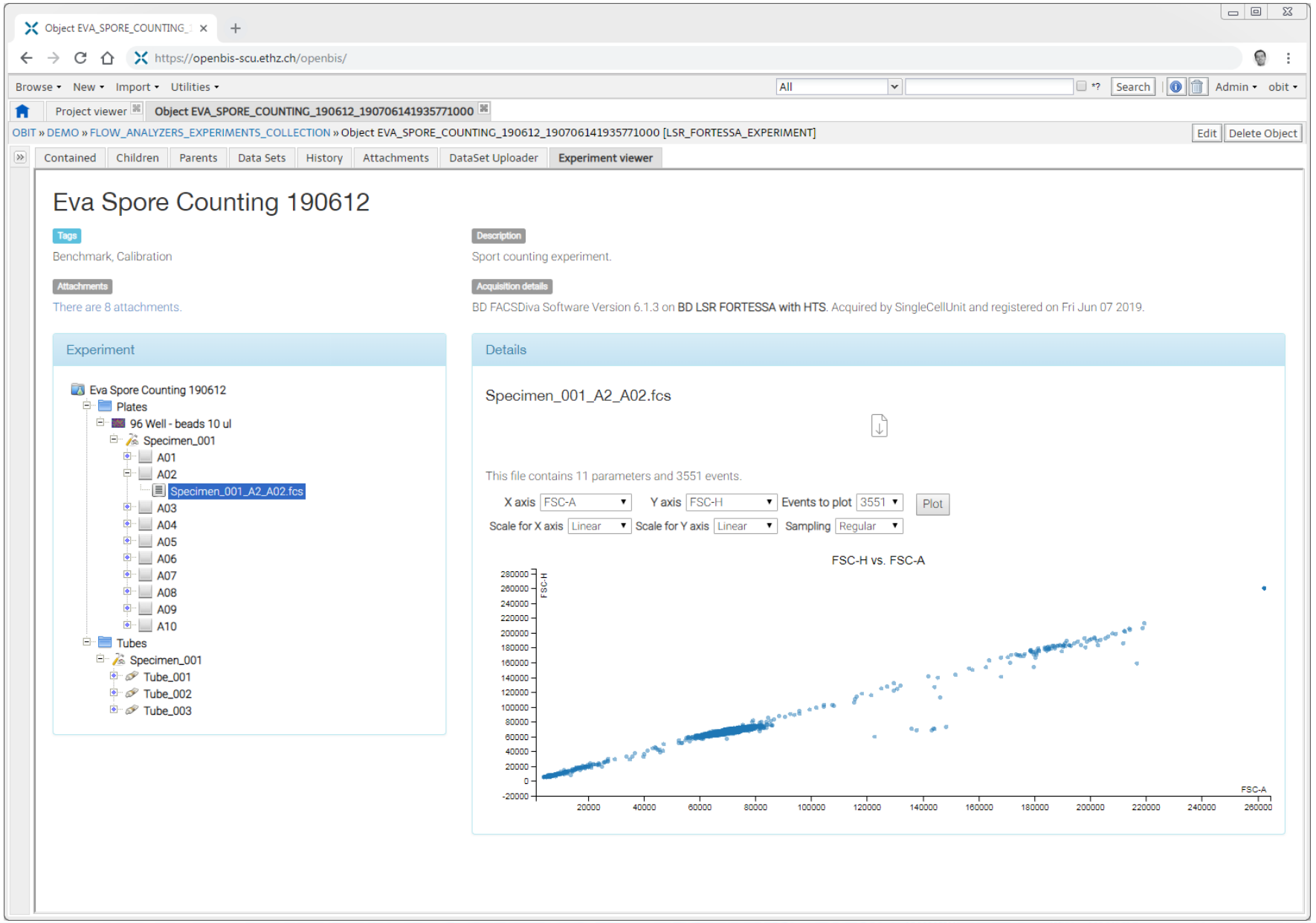

openBIS Importer Toolset (oBIT) :: Annotation Tool v2.0.0
Data viewer
/obit
Eva Spore Counting 190612
96 Well - beads 10 ul
Specimen_001
A10
A01
A02
Specimen_001_A2_A02.fcs
A03
A04
A05
A06
A07
A08
A09
Specimen_001
1
Scan
Metadata viewer
Name
Value
$BEGINANALYSIS 0
$BEGINDATA 2496
$BEGINSTEXT 0
$BTIM 10:49:11
$BYTEORD 4,3,2,1
$CYT LSRII
$DATATYPE F
$DATE 19-JUN-2012
$ENDANALYSIS 0
$ENDDATA 158739
$ENDSTEXT 0
$ETIM 10:49:21
$FIL Specimen_001_A2_A02.fcs
2
Invalid datasets
File or folder
Issue
3
Data editor
/obit
Eva Spore Counting 190612
Experiment tags
Benchmark; Calibration
Drag and drop your tags here from the openBIS Viewer.
Description
Spore counting experiment.
Plate geometry
96 Well - beads 10 ul
96_WELLS_8X12
Target openBIS project
/OBIT/DEMO
6
7
Send to openBIS
openBIS
obit
OBIT
COURSES
DEMO
Scan
Tags from OBIT
Create new tag...
Demo
Benchmark
Calibration
5
openBIS
obit
OBIT
COURSES
DEMO
Set as default target project
06-06-2019 15:53:09: Successfully logged in to openBIS.
06-06-2019 15:53:10: Retrieving openBIS structure...
06-06-2019 15:53:10: Retrieving openBIS structure completed.
06-06-2019 15:53:10: Scanning user data folder...
06-06-2019 15:53:11: Scanning user data folder completed.

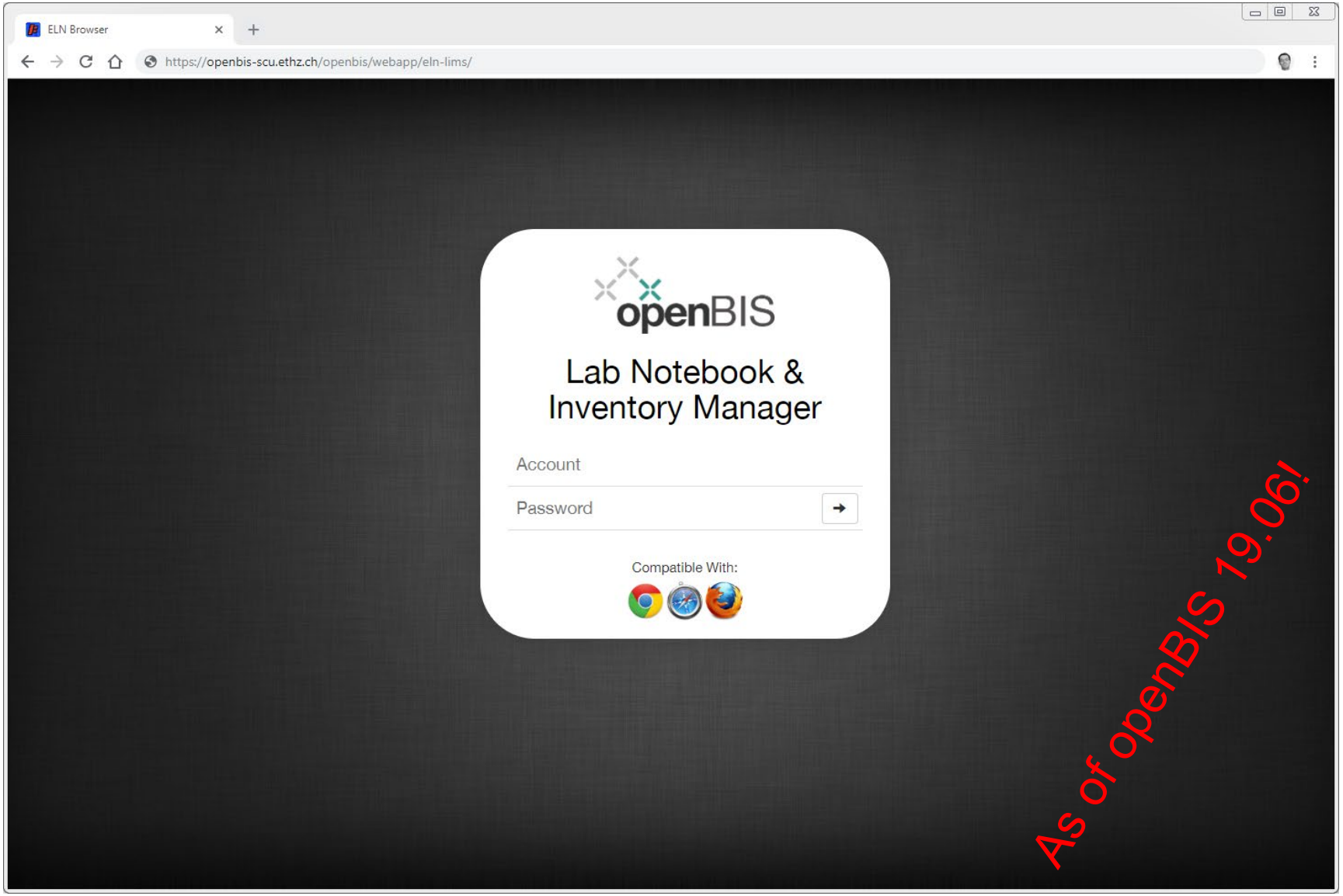

openBIS Importer Toolset (oBIT) :: Annotation Tool v2.0.0
Data viewer
/obit
Eva Spore Counting 190612
96 Well - beads 10 ul
Specimen_001
A10
A01
A02
Specimen_001_A2_A02.fcs
A03
A04
A05
A06
A07
A08
A09
Specimen_001
1
Scan
Metadata viewer
Name
Value
$BEGINANALYSIS 0
$BEGINDATA 2496
$BEGINSTEXT 0
$BTIM 10:49:11
$BYTEORD 4,3,2,1
$CYT LSRII
$DATATYPE F
$DATE 19-JUN-2012
$ENDANALYSIS 0
$ENDDATA 158739
$ENDSTEXT 0
$ETIM 10:49:21
$FIL Specimen_001_A2_A02.fcs
2
Invalid datasets
File or folder
Issue
3
Data editor
/obit
Eva Spore Counting 190612
Experiment tags
Benchmark; Calibration
Drag and drop your tags here from the openBIS Viewer.
Description
Spore counting experiment.
Plate geometry
Send to openBIS
7
Create new tag...
Select space
OBIT
Tag name
Cell Migration
Tag description (optional)
Experiments associated with Cell Migration project (Grant #523).
Ok
Cancel
openBIS
obit
OBIT
COURSES
DEMO
4
Scan
Tags from OBIT
Create new tag...
Demo
Benchmark
Calibration
5
06-06-2019 15:53:09: Successfully logged in to openBIS.
06-06-2019 15:53:10: Retrieving openBIS structure...
06-06-2019 15:53:10: Retrieving openBIS structure completed.
06-06-2019 15:53:10: Scanning user data folder...
06-06-2019 15:53:11: Scanning user data folder completed.

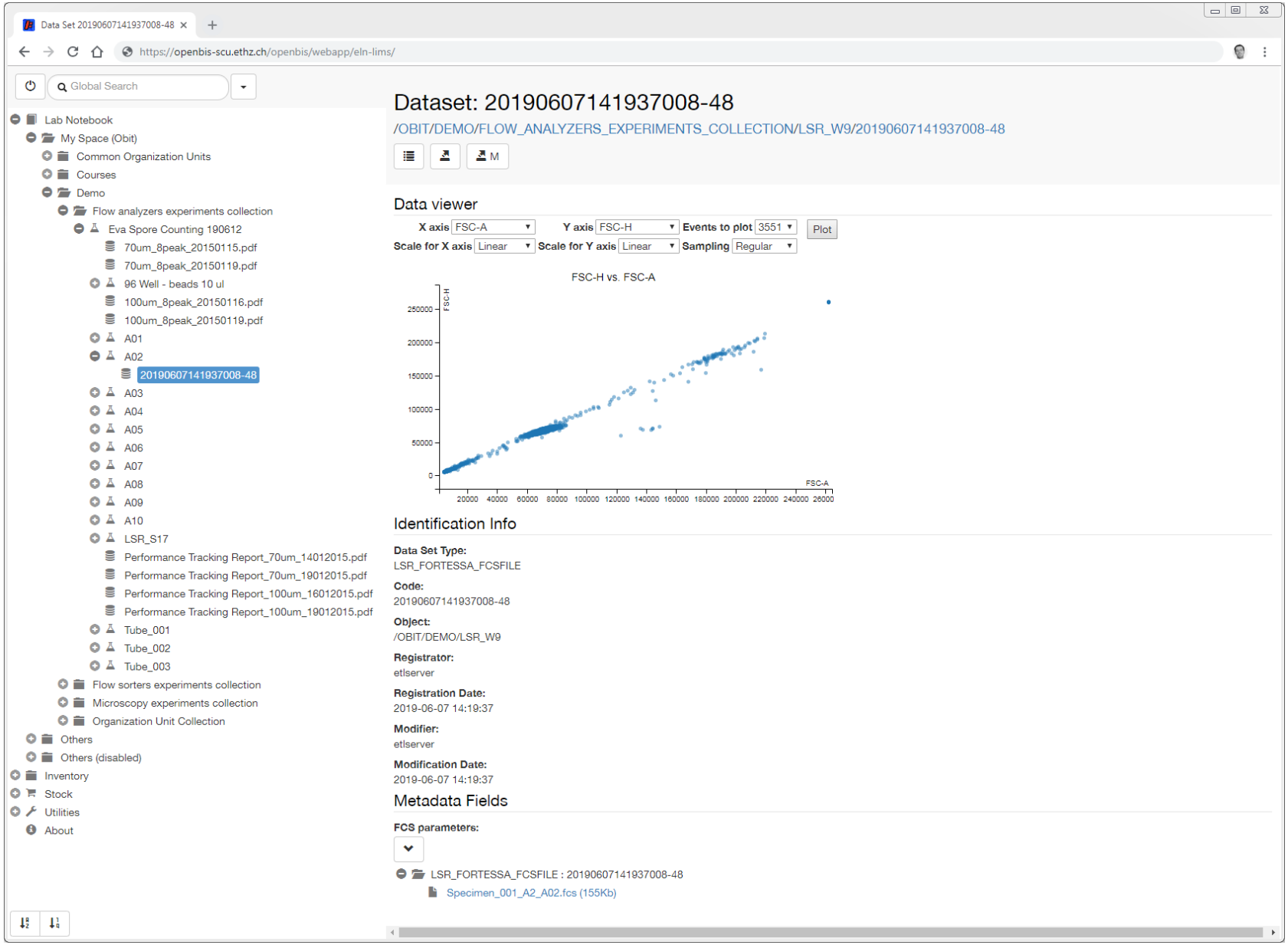

openBIS Importer Toolset (oBIT) :: Annotation Tool v2.0.0
Data viewer
/obit
Eva Spore Counting 190612
96 Well - beads 10 ul
Specimen_001
A10
A01
A02
Specimen_001_A2_A02.fcs
A03
A04
A05
A06
A07
A08
A09
Specimen_001
1
Data editor
/obit
Eva Spore Counting 190612
Experiment tags
Benchmark; Calibration
Drag and drop your tags here from the openBIS Viewer.
Description
Spore counting experiment.
Plate geometry
openBIS
obit
OBIT
COURSES
DEMO
4
Attachments
Metadata viewer
Name
$BEGINANALYSIS
$BEGINDATA 2496
$BEGINSTEXT 0
$BTIM 10:49:11
$BYTEORD 4,3,2,1
$CYT LSRII
$DATATYPE F
$DATE 19-JUN-2012
$ENDANALYSIS 0
$ENDDATA 158739
$ENDSTEXT 0
$ETIM 10:49:21
$FIL Specimen_001_A2_A02.fcs
2
Scan
Tags from OBIT
Create new tag...
Demo
Benchmark
Calibration
5
Invalid datasets
File or folder
Issue
3
Send to openBIS
7
06-06-2019 15:53:09: Successfully logged in to openBIS.
06-06-2019 15:53:10: Retrieving openBIS structure...
06-06-2019 15:53:10: Retrieving openBIS structure completed.
06-06-2019 15:53:10: Scanning user data folder...
06-06-2019 15:53:11: Scanning user data folder completed.


openBIS - Biology Information Sy
https://openbis-scu.ethz.ch/openbis/
openBIS
Biology Information System
Please login to start your session:
User:
Password:
Login
Click here for help.


Project viewer - openBIS - Biolog
https://openbis-scu.ethz.ch/openbis/
Browse
New
Import
Utilities
All
Search
Admin
obit
Project viewer
Project viewer
Filter by experiment name:
Type one or more characters...
Sort experiments by:
↑ Name
↓ Name
↓ Registration date
↑ Registration date
Spaces/Projects
DEFAULT
DEFAULT_LAB_NOTEBOOK
METHODS
OBIT
COURSES
DEMO
STOCK_CATALOG
STOCK_ORDERS
Experiments for OBIT/DEMO
Microscopes
Tags
Cell Migration
Demo
No tags
Machines
Widefield 2
Widefield 1
Unknown
Experiment_2
Cell Migration
Example microscopy acquisition.
Acquired on
Widefield 2
multiple_datasets
Demo
Multiple dataset registration.
Acquired on
Widefield 1
Flow Cytometry Analyzers
Tags
Benchmark
Calibration
No tags
Machines
BD LSR FORTESSA with HTS
Unknown
Eva Spore Counting 190612
Benchmark
Calibration
Sport counting experiment.
Acquired on
BD LSR FORTESSA with HTS
Flow Cytometry Sorters
Tags
No tags
Machines
BD FACS ARIA III
Unknown
150115KK YVI - Exp1
No tags assigned.
Quality control acquisitions.
Acquired on
BD FACS ARIA III

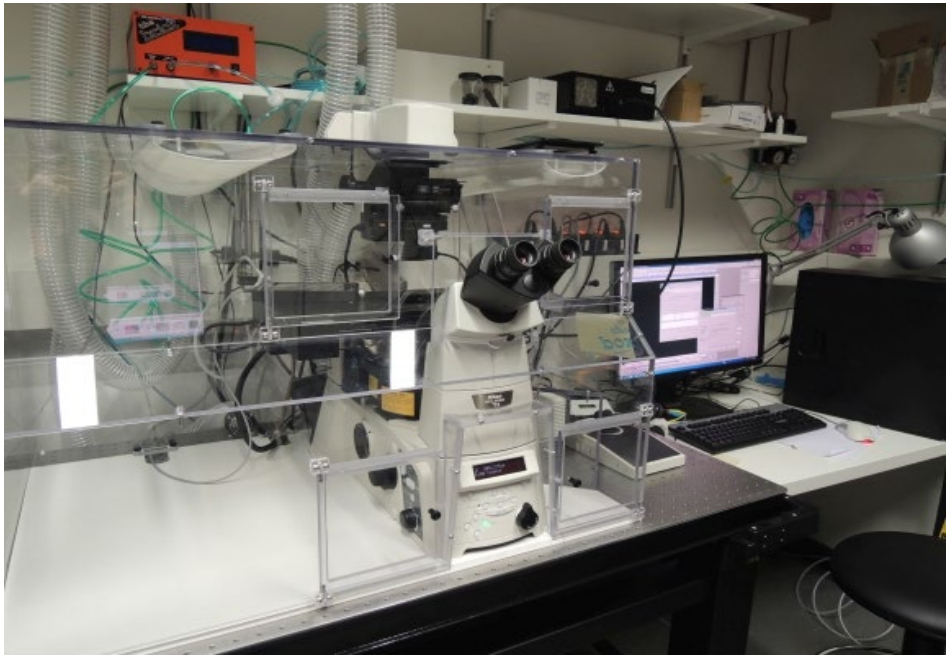

Object EVA_SPORE_COUNTING_
https://openbis-scu.ethz.ch/openbis/
Browse
New
Import
Utilities
All
Search
Admin
obit
Project viewer
Object EVA_SPORE_COUNTING_190612_190706141935771000
OBIT » DEMO » FLOW_ANALYZERS_EXPERIMENTS_COLLECTION » Object EVA_SPORE_COUNTING_190612_190706141935771000 [LSR_FORTESSA_EXPERIMENT]
Edit
Delete Object
Contained
Children
Parents
Data Sets
History
Attachments
DataSet Uploader
Experiment viewer
Eva Spore Counting 190612
Tags
Benchmark, Calibration
Description
Sport counting experiment.
Attachments
There are 8 attachments.
Acquisition details
BD FACSDiva Software Version 6.1.3 on BD LSR FORTESSA with HTS. Acquired by SingleCellUnit and registered on Fri Jun 07 2019.
Experiment
Eva Spore Counting 190612
Plates
96 Well - beads 10 ul
Specimen_001
A01
A02
Specimen_001_A2_A02.fcs
A03
A04
A05
A06
A07
A08
A09
A10
Tubes
Specimen_001
Tube_001
Tube_002
Tube_003
Details
Specimen_001_A2_A02.fcs
This file contains 11 parameters and 3551 events.
X axis
FSC-A
Y axis
FSC-H
Events to plot
3551
Plot
Scale for X axis
Linear
Scale for Y axis
Linear
Sampling
Regular
FSC-H vs. FSC-A
FSC-H
FSC-A
280000
260000
240000
220000
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
-20000
20000
40000
60000
80000
100000
120000
140000
160000
180000
200000
220000
240000
260000


ELN Browser
https://openbis-scu.ethz.ch/openbis/webapp/eln-lims/
openBIS
Lab Notebook &
Inventory Manager
Account
Password
Compatible With:
As of openBIS 19.06!

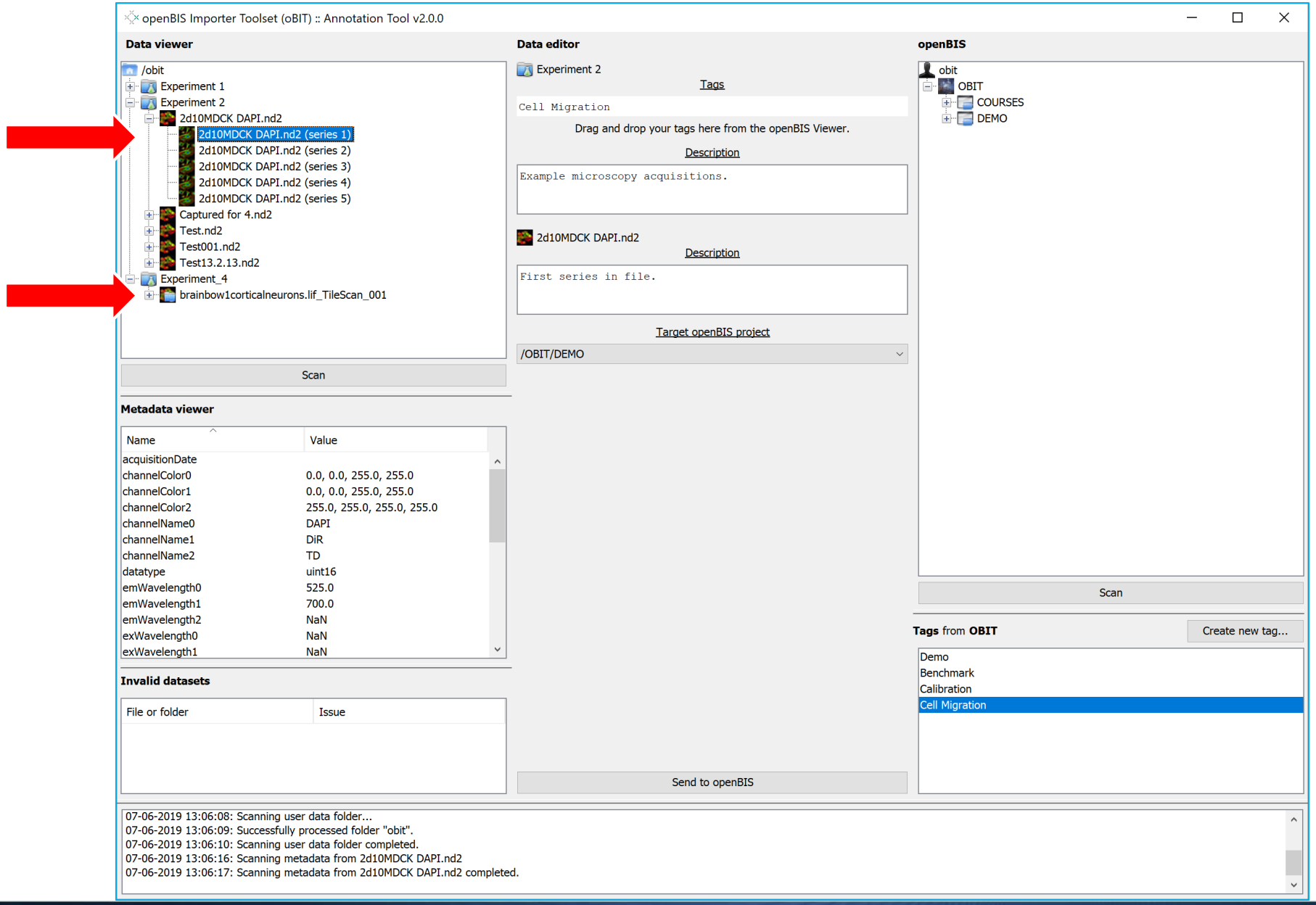

Data Set 20190607141937008-48
https://openbis-scu.ethz.ch/openbis/webapp/eln-lims/
Global Search
Lab Notebook
My Space (Obit)
Common Organization Units
Courses
Demo
Flow analyzers experiments collection
Eva Spore Counting 190612
70um_8peak_20150115.pdf
70um_8peak_20150119.pdf
96 Well - beads 10 ul
100um_8peak_20150116.pdf
100um_8peak_20150119.pdf
A01
A02
20190607141937008-48
A03
A04
A05
A06
A07
A08
A09
A10
LSR_S17
Performance Tracking Report_70um_14012015.pdf
Performance Tracking Report_70um_19012015.pdf
Performance Tracking Report_100um_16012015.pdf
Performance Tracking Report_100um_19012015.pdf
Tube_001
Tube_002
Tube_003
Flow sorters experiments collection
Microscopy experiments collection
Organization Unit Collection
Others
Others (disabled)
Inventory
Stock
Utilities
About
Dataset: 20190607141937008-48
/OBIT/DEMO/FLOW_ANALYZERS_EXPERIMENTS_COLLECTION/LSR_W9/20190607141937008-48
M
Data viewer
X axis FSC-A
Y axis FSC-H
Events to plot 3551
Plot
Scale for X axis Linear
Scale for Y axis Linear
Sampling Regular
FSC-H vs. FSC-A
FSC-H
FSC-A
Identification Info
Data Set Type:
LSR_FORTESSA_FCSFILE
Code:
20190607141937008-48
Object:
/OBIT/DEMO/LSR_W9
Registrator:
etlserver
Registration Date:
2019-06-07 14:19:37
Modifier:
etlserver
Modification Date:
2019-06-07 14:19:37
Metadata Fields
FCS parameters:
LSR_FORTESSA_FCSFILE : 20190607141937008-48
Specimen_001_A2_A02.fcs (155Kb)

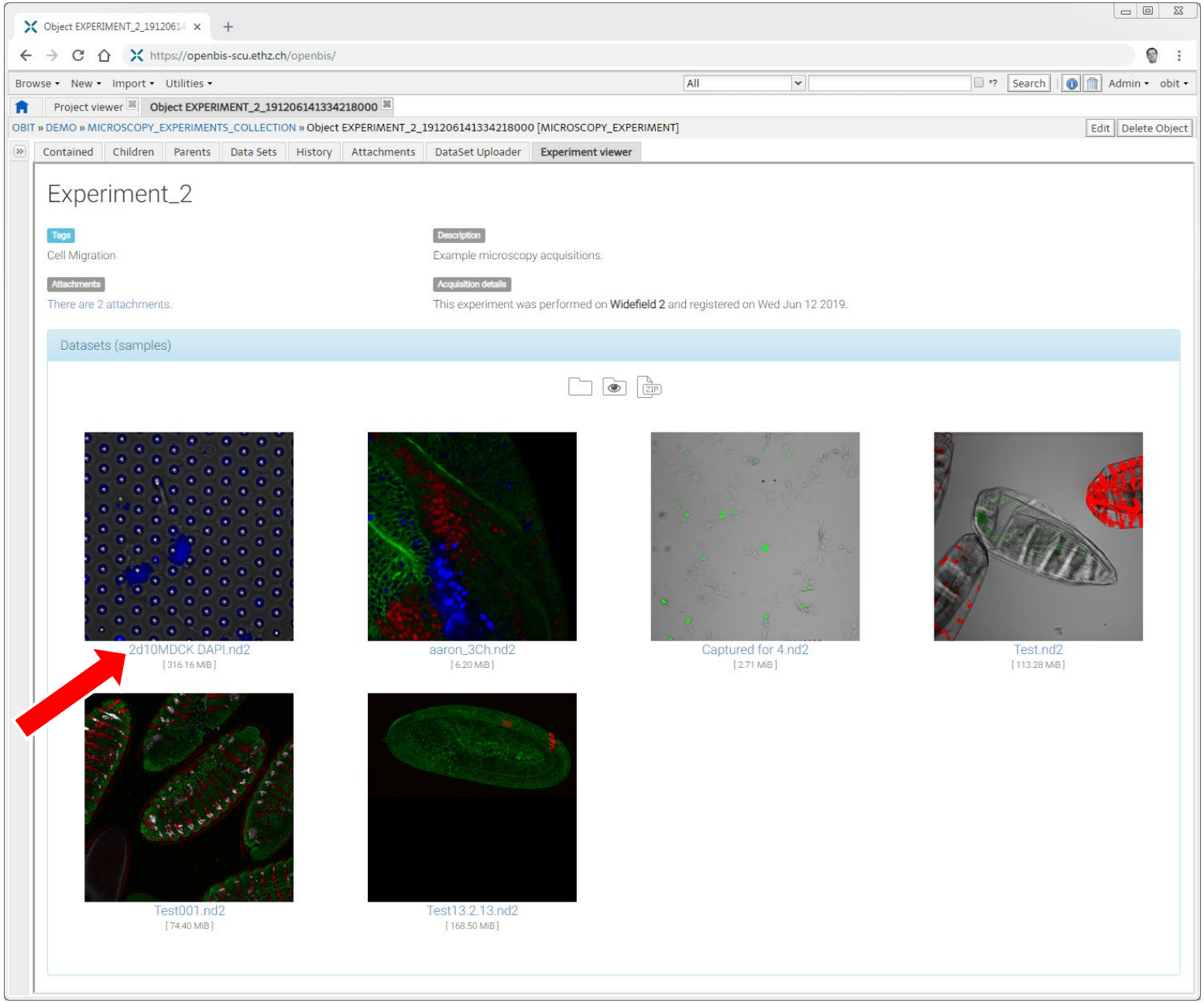
Light microscopes

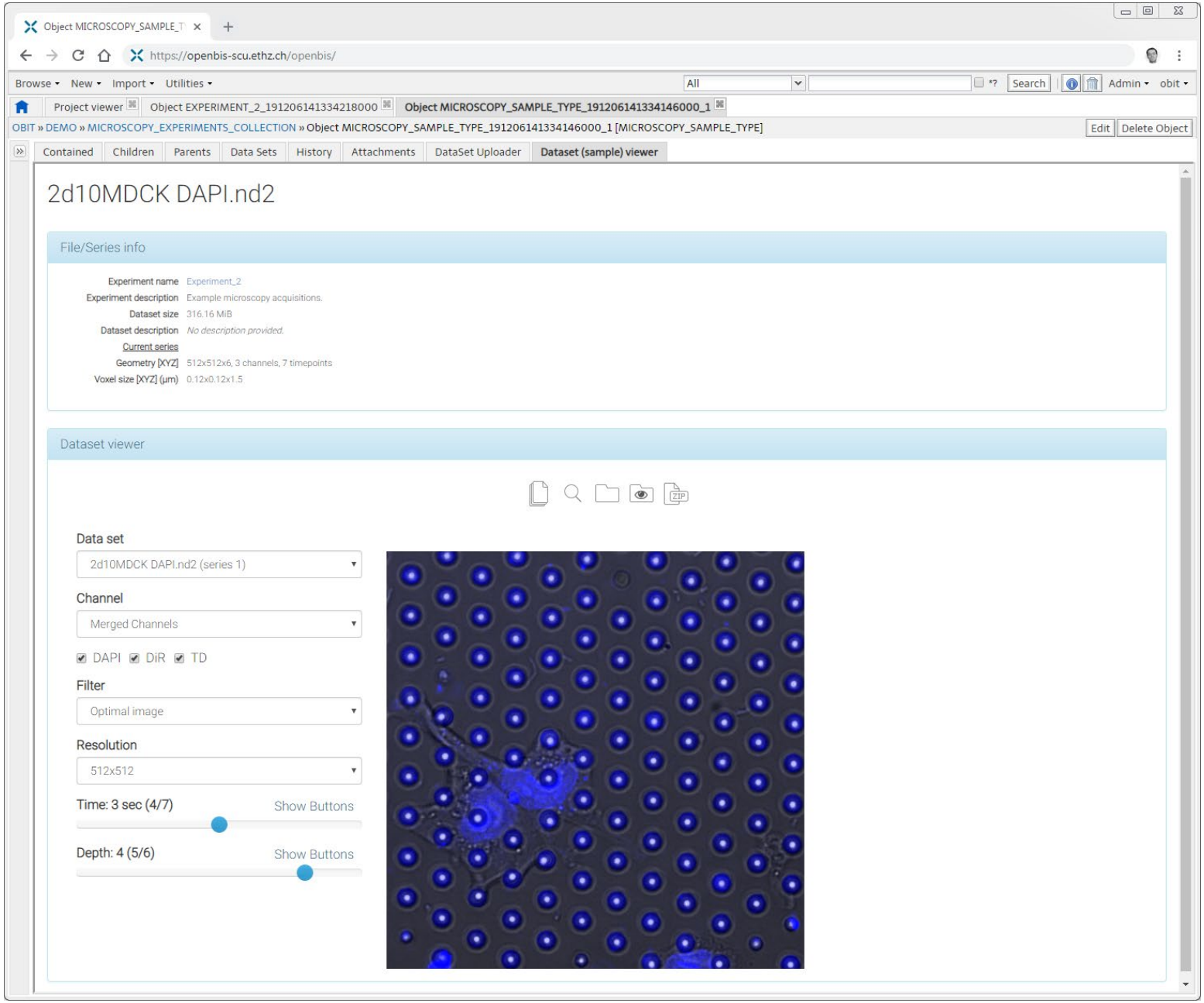
bio-formats

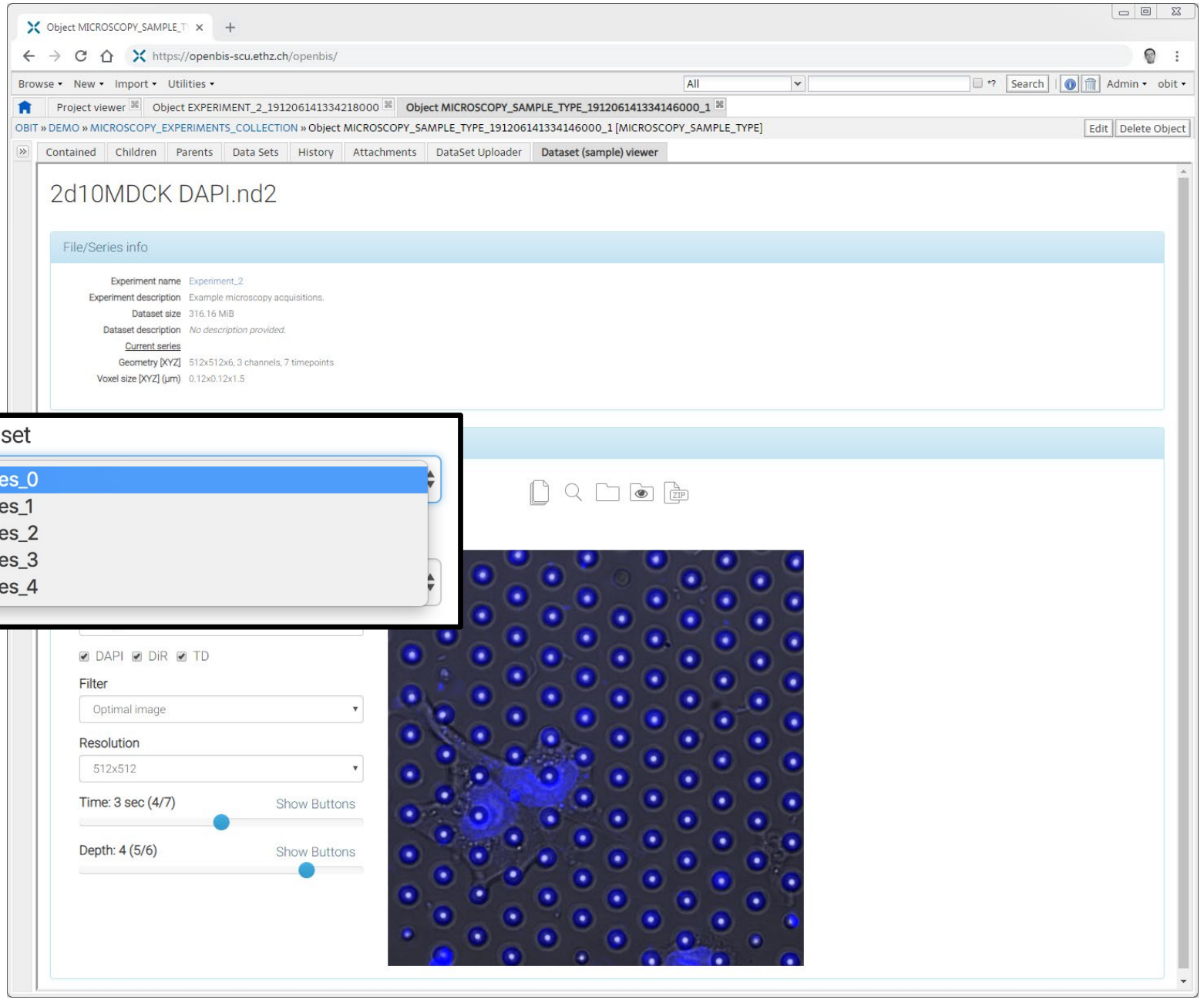


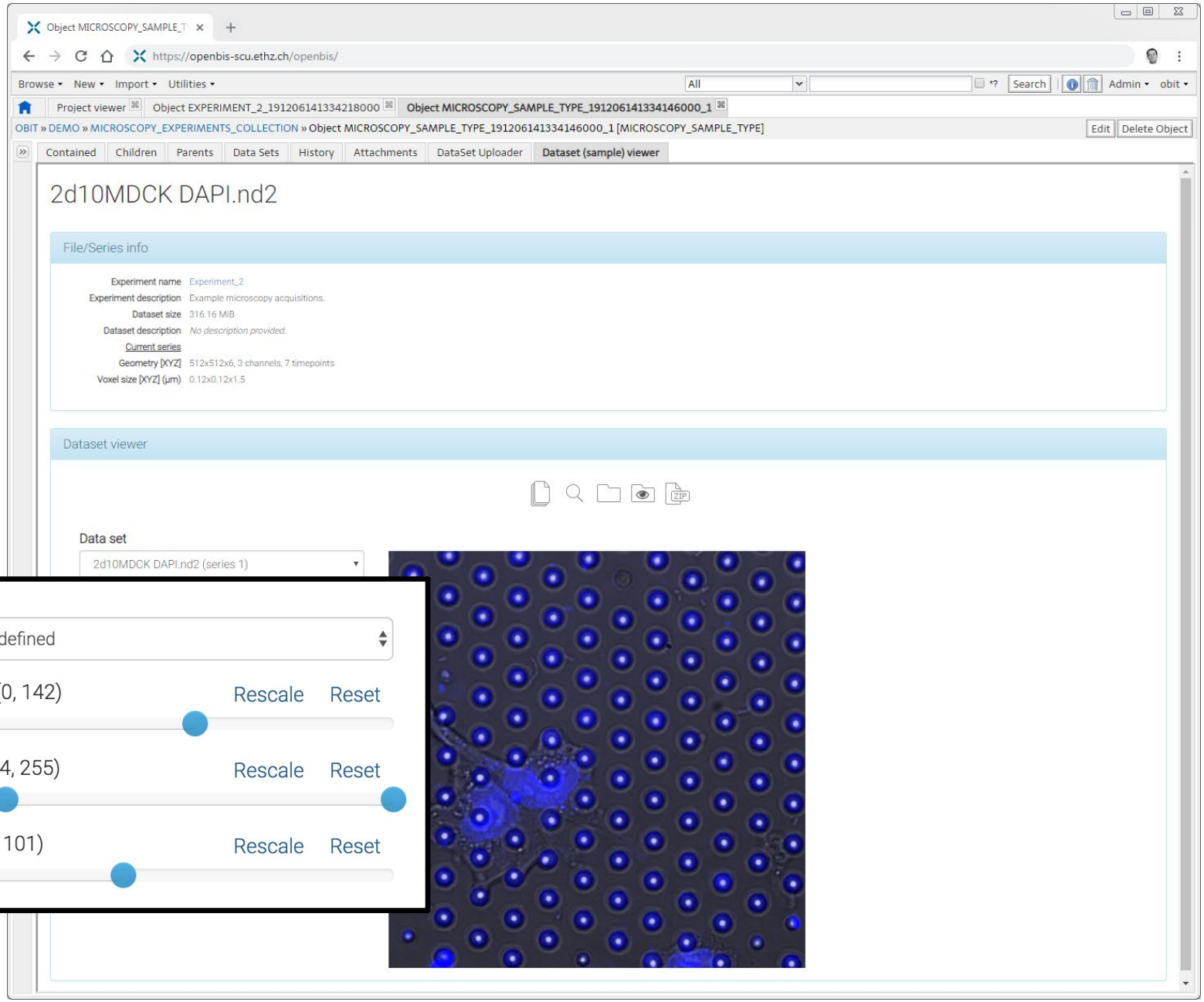
OME

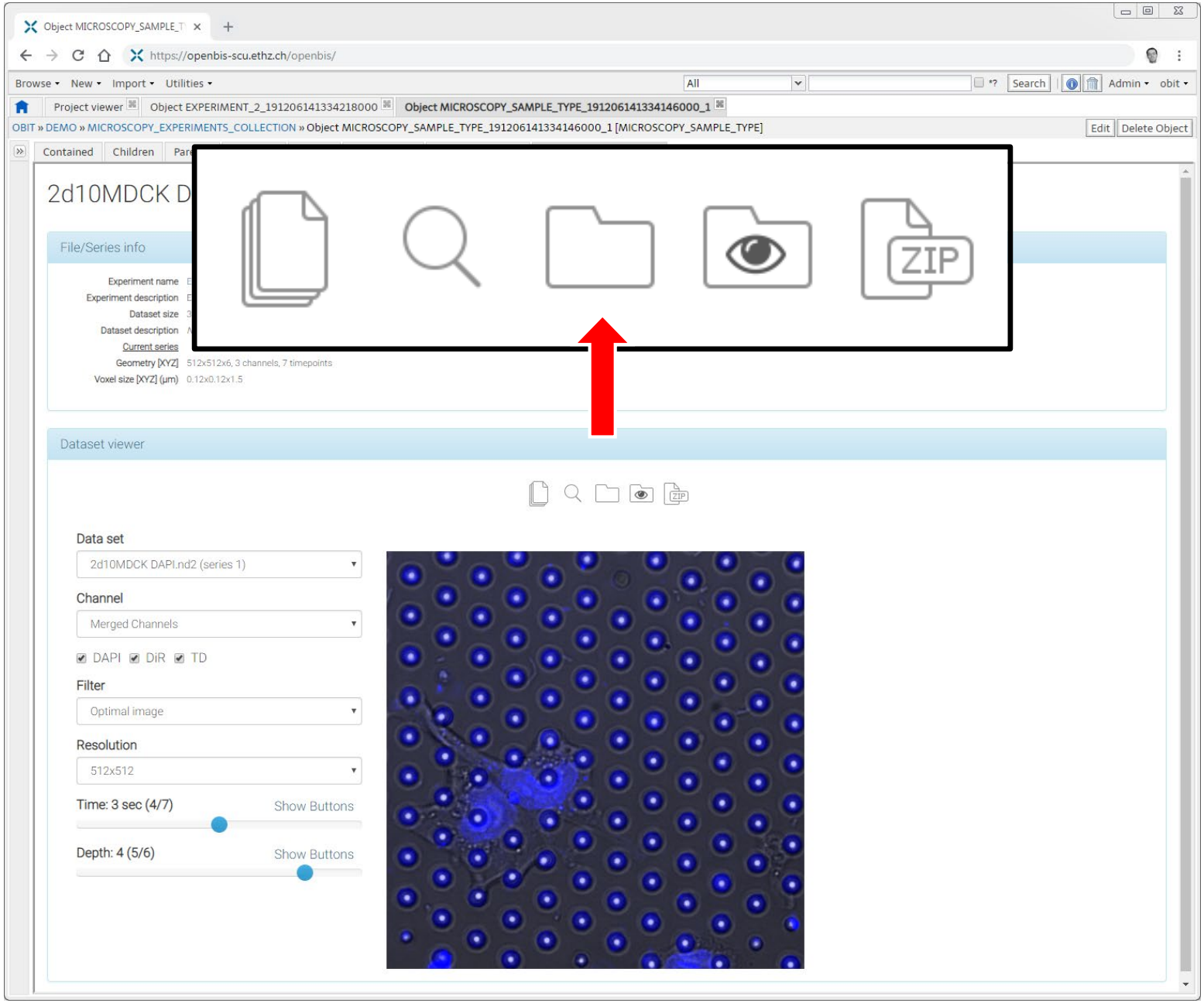

openBIS Importer Toolset (oBIT) :: Annotation Tool v2.0.0
Data viewer
/obit
Experiment 1
Experiment 2
2d10MDCK DAPI.nd2
2d10MDCK DAPI.nd2 (series 1)
2d10MDCK DAPI.nd2 (series 2)
2d10MDCK DAPI.nd2 (series 3)
2d10MDCK DAPI.nd2 (series 4)
2d10MDCK DAPI.nd2 (series 5)
Captured for 4.nd2
Test.nd2
Test001.nd2
Test13.2.13.nd2
Experiment_4
brainbow1corticalneurons.lif_TileScan_001
Scan
Metadata viewer
Name
Value
acquisitionDate
channelColor0 0.0, 0.0, 255.0, 255.0
channelColor1 0.0, 0.0, 255.0, 255.0
channelColor2 255.0, 255.0, 255.0, 255.0
channelName0 DAPI
channelName1 DiR
channelName2 TD
datatype uint16
emWavelength0 525.0
emWavelength1 700.0
emWavelength2 NaN
exWavelength0 NaN
exWavelength1 NaN
Invalid datasets
File or folder
Issue
Data editor
Experiment 2
Tags
Cell Migration
Drag and drop your tags here from the openBIS Viewer.
Description
Example microscopy acquisitions.
2d10MDCK DAPI.nd2
Description
First series in file.
Target openBIS project
/OBIT/DEMO
Send to openBIS
openBIS
obit
OBIT
COURSES
DEMO
Scan
Tags from OBIT
Create new tag...
Demo
Benchmark
Calibration
Cell Migration
07-06-2019 13:06:08: Scanning user data folder...
07-06-2019 13:06:09: Successfully processed folder "obit".
07-06-2019 13:06:10: Scanning user data folder completed.
07-06-2019 13:06:16: Scanning metadata from 2d10MDCK DAPI.nd2
07-06-2019 13:06:17: Scanning metadata from 2d10MDCK DAPI.nd2 completed.


Object EXPERIMENT_2_19120614
https://openbis-scu.ethz.ch/openbis/
Browse
New
Import
Utilities
All
Search
Admin
obit
Project viewer
Object EXPERIMENT_2_191206141334218000
OBIT » DEMO » MICROSCOPY_EXPERIMENTS_COLLECTION » Object EXPERIMENT_2_191206141334218000 [MICROSCOPY_EXPERIMENT]
Edit
Delete Object
Contained
Children
Parents
Data Sets
History
Attachments
DataSet Uploader
Experiment viewer
Experiment_2
Tags
Cell Migration
Description
Example microscopy acquisitions.
Attachments
There are 2 attachments.
Acquisition details
This experiment was performed on Widefield 2 and registered on Wed Jun 12 2019.
Datasets (samples)
2d10MDCK DAPI.nd2
[316.16 MiB]
aaron_3Ch.nd2
[6.20 MiB]
Captured for 4.nd2
[2.71 MiB]
Test.nd2
[113.28 MiB]
Test001.nd2
[74.40 MiB]
Test13.2.13.nd2
[168.50 MiB]

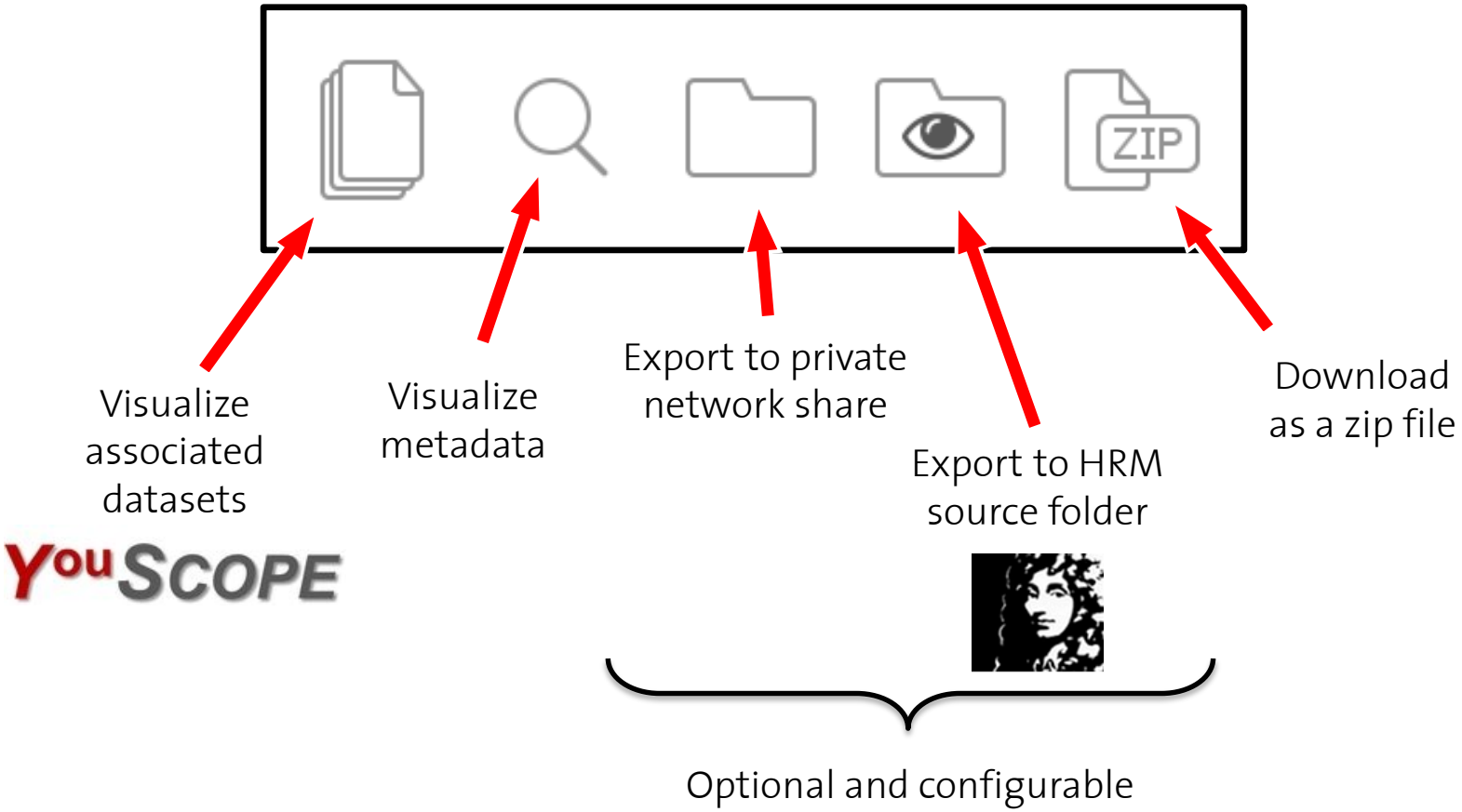

Object MICROSCOPY_SAMPLE_T
https://openbis-scu.ethz.ch/openbis/
Browse
New
Import
Utilities
All
Search
Admin
obit
Project viewer
Object EXPERIMENT_2_191206141334218000
Object MICROSCOPY_SAMPLE_TYPE_191206141334146000_1
OBIT » DEMO » MICROSCOPY_EXPERIMENTS_COLLECTION » Object MICROSCOPY_SAMPLE_TYPE_191206141334146000_1 [MICROSCOPY_SAMPLE_TYPE]
Edit
Delete Object
Contained
Children
Parents
Data Sets
History
Attachments
DataSet Uploader
Dataset (sample) viewer
2d10MDCK DAPI.nd2
File/Series info
Experiment name Experiment_2
Experiment description Example microscopy acquisitions.
Dataset size 316.16 MiB
Dataset description No description provided.
Current series
Geometry [XYZ] 512x512x6, 3 channels, 7 timepoints
Voxel size [XYZ] (µm) 0.12x0.12x1.5
Dataset viewer
Data set
2d10MDCK DAPI.nd2 (series 1)
Channel
Merged Channels
DAPI DiR TD
Filter
Optimal image
Resolution
512x512
Time: 3 sec (4/7)
Show Buttons
Depth: 4 (5/6)
Show Buttons


Object MICROSCOPY_SAMPLE_T
https://openbis-scu.ethz.ch/openbis/
Browse
New
Import
Utilities
All
Search
Admin
obit
Project viewer
Object EXPERIMENT_2_191206141334218000
Object MICROSCOPY_SAMPLE_TYPE_191206141334146000_1
OBIT » DEMO » MICROSCOPY_EXPERIMENTS_COLLECTION » Object MICROSCOPY_SAMPLE_TYPE_191206141334146000_1 [MICROSCOPY_SAMPLE_TYPE]
Edit
Delete Object
Contained
Children
Parents
Data Sets
History
Attachments
DataSet Uploader
Dataset (sample) viewer
2d10MDCK DAPI.nd2
File/Series info
Experiment name Experiment_2
Experiment description Example microscopy acquisitions.
Dataset size 316.16 MiB
Dataset description No description provided.
Current series
Geometry [XYZ] 512x512x6, 3 channels, 7 timepoints
Voxel size [XYZ] (µm) 0.12x0.12x1.5
Data set
series_0
series_1
series_2
series_3
series_4
DAPI
DiR
TD
Filter
Optimal image
Resolution
512x512
Time: 3 sec (4/7)
Show Buttons
Depth: 4 (5/6)
Show Buttons


Object MICROSCOPY_SAMPLE_T
https://openbis-scu.ethz.ch/openbis/
Browse
New
Import
Utilities
All
Search
Admin
obit
Project viewer
Object EXPERIMENT_2_191206141334218000
Object MICROSCOPY_SAMPLE_TYPE_191206141334146000_1
OBIT » DEMO » MICROSCOPY_EXPERIMENTS_COLLECTION » Object MICROSCOPY_SAMPLE_TYPE_191206141334146000_1 [MICROSCOPY_SAMPLE_TYPE]
Edit
Delete Object
Contained
Children
Parents
Data Sets
History
Attachments
DataSet Uploader
Dataset (sample) viewer
2d10MDCK DAPI.nd2
File/Series info
Experiment name Experiment_2
Experiment description Example microscopy acquisitions.
Dataset size 316.16 MiB
Dataset description No description provided.
Current series
Geometry [XYZ] 512x512x6, 3 channels, 7 timepoints
Voxel size [XYZ] (µm) 0.12x0.12x1.5
Dataset viewer
Data set
2d10MDCK DAPI.nd2 (series 1)
Filter
User defined
DAPI (0, 142)
Rescale
Reset
DiR (34, 255)
Rescale
Reset
TD (0, 101)
Rescale
Reset


Object MICROSCOPY_SAMPLE_T
https://openbis-scu.ethz.ch/openbis/
Browse
New
Import
Utilities
All
Search
Admin
obit
Project viewer
Object EXPERIMENT_2_191206141334218000
Object MICROSCOPY_SAMPLE_TYPE_191206141334146000_1
OBIT » DEMO » MICROSCOPY_EXPERIMENTS_COLLECTION » Object MICROSCOPY_SAMPLE_TYPE_191206141334146000_1 [MICROSCOPY_SAMPLE_TYPE]
Edit
Delete Object
Contained
Children
2d10MDCK D
File/Series info
Experiment name
Experiment description
Dataset size
Dataset description
Current series
Geometry [XYZ]
512x512x6, 3 channels, 7 timepoints
Voxel size [XYZ] (µm)
0.12x0.12x1.5
ZIP
Dataset viewer
Data set
2d10MDCK DAPI.nd2 (series 1)
Channel
Merged Channels
DAPI
DiR
TD
Filter
Optimal image
Resolution
512x512
Time: 3 sec (4/7)
Show Buttons
Depth: 4 (5/6)
Show Buttons

Experiment/dataset actions



http://www.huygens-rm.org/

Huygens Remote Manager

Help

Results pontia Home

Raw images

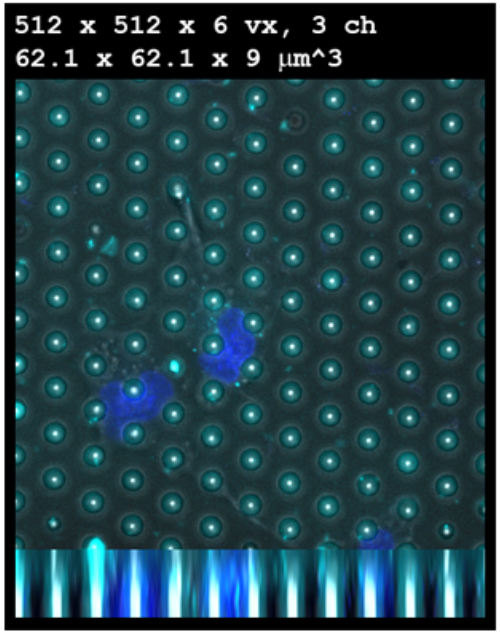
Preview

Your raw files

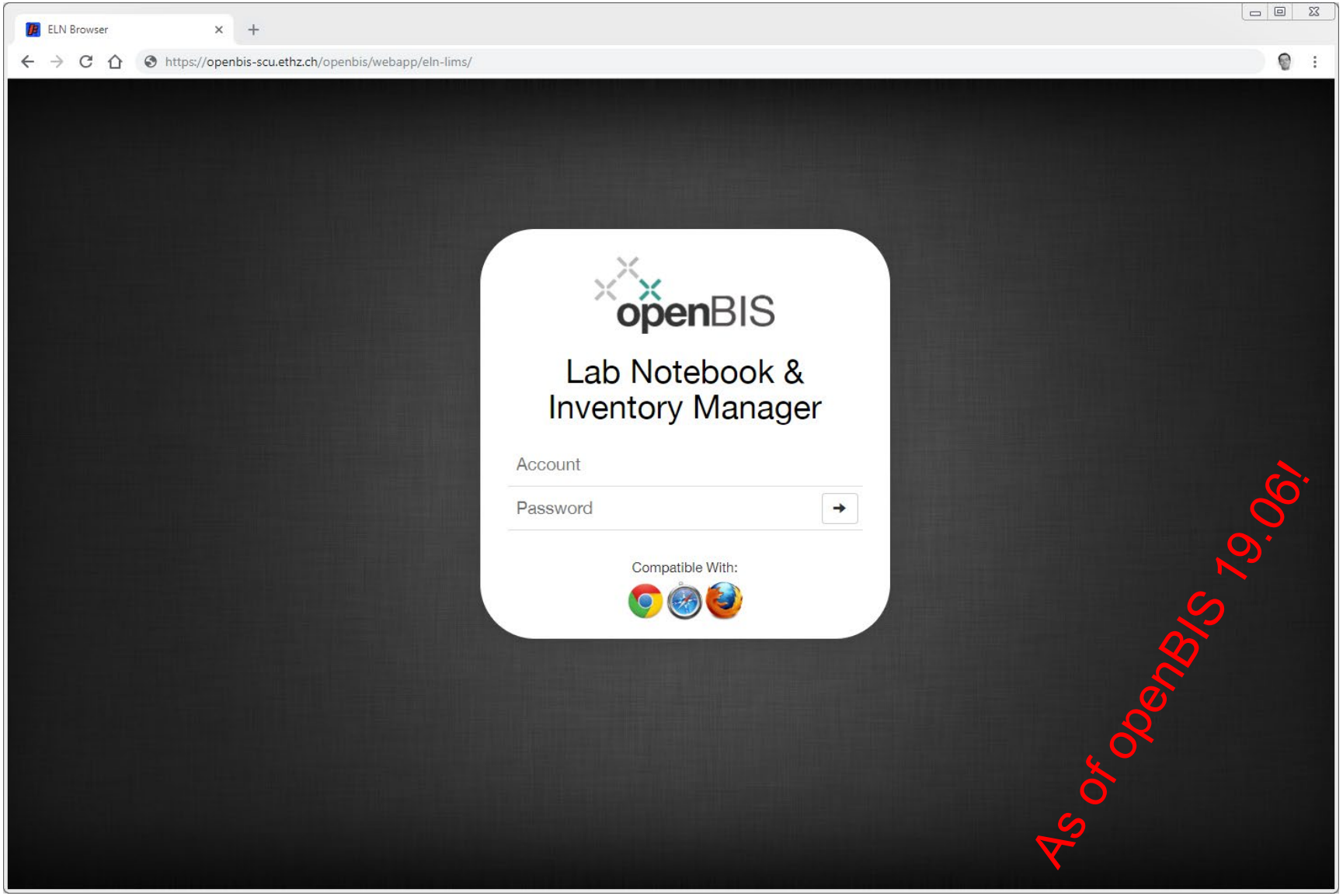
These are the original image files currently in your file area.

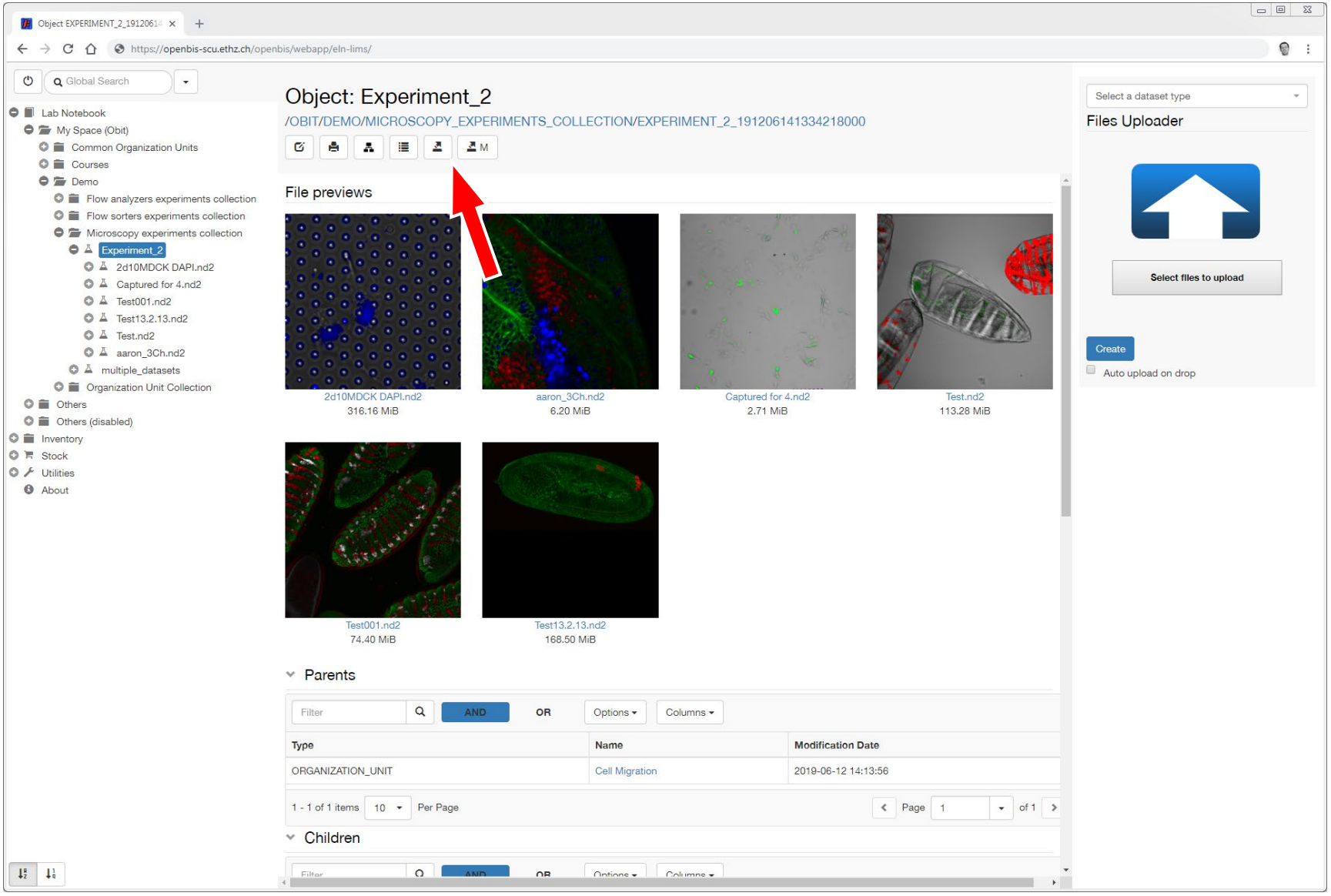
- Crop40-original_crop.h5
- Embryo.ics
- Experiment 2/2d10MDCK DAPI.nd2
- HeLa_2D_tubulin.ics
- HeLa_3D.ics
- HeLa_coloc.ics
- OG488_Dinoflagellate_2_raw_confocal.h5
- OG488_Dinoflagellate_2_raw_joined.h5
- Pombe.ics
- U2OS_dataset_02_R3D_original.h5
- bad.lsm
- good.lsm
- test tl002.nd2
- widefieldTimeSeries.h5

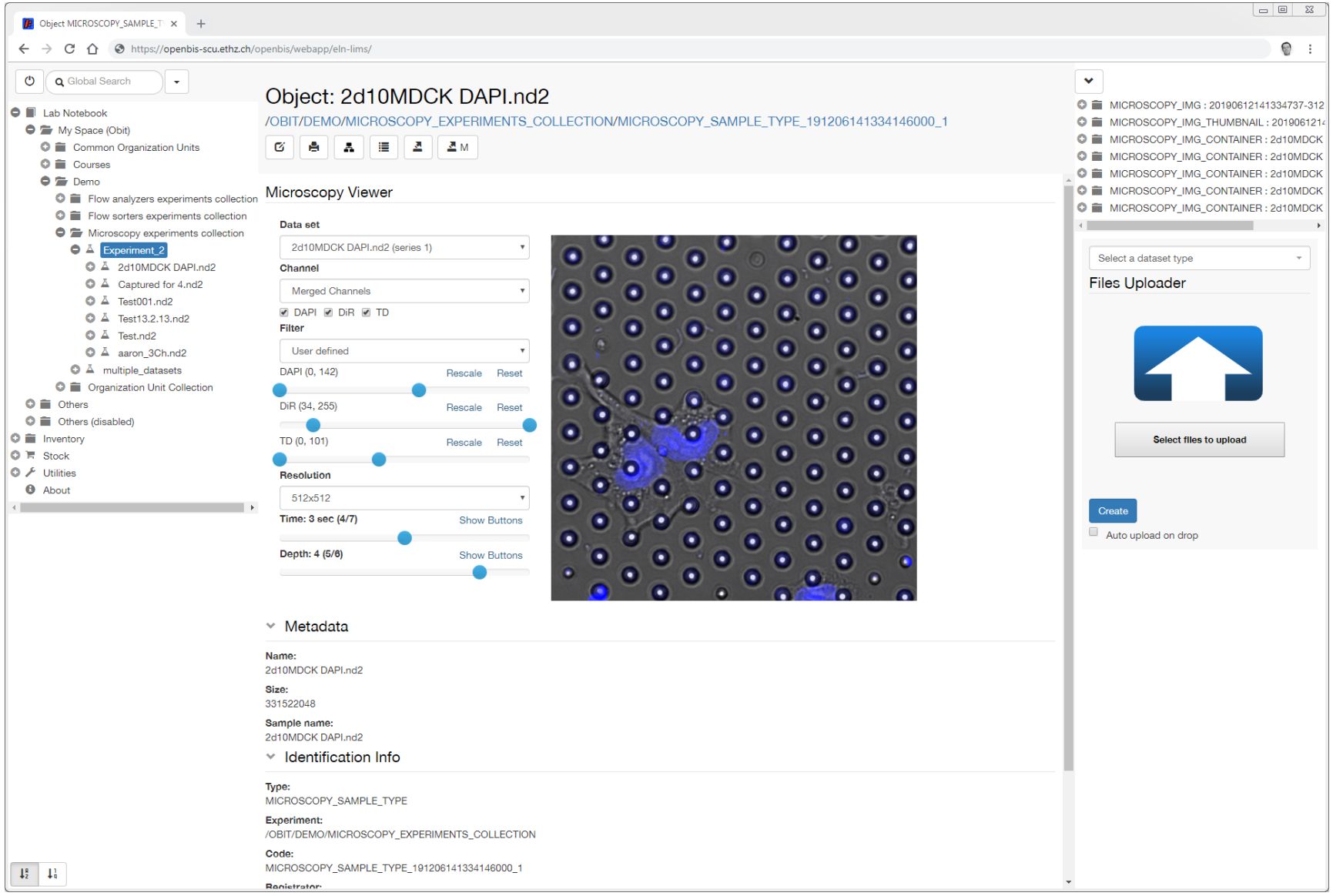
Re-create preview



Huygens Remote Manager v3.5


ELN Browser
https://openbis-scu.ethz.ch/openbis/webapp/eln-lims/
openBIS
Lab Notebook &
Inventory Manager
Account
Password
Compatible With:
As of openBIS 19.06!


Object EXPERIMENT_2_19120614
https://openbis-scu.ethz.ch/openbis/webapp/eln-lims/
Global Search
Lab Notebook
My Space (Obit)
Common Organization Units
Courses
Demo
Flow analyzers experiments collection
Flow sorters experiments collection
Microscopy experiments collection
Experiment_2
2d10MDCK DAPI.nd2
Captured for 4.nd2
Test001.nd2
Test13.2.13.nd2
Test.nd2
aaron_3Ch.nd2
multiple_datasets
Organization Unit Collection
Others
Others (disabled)
Inventory
Stock
Utilities
About
Object: Experiment_2
/OBIT/DEMO/MICROSCOPY_EXPERIMENTS_COLLECTION/EXPERIMENT_2_191206141334218000
File previews
2d10MDCK DAPI.nd2
316.16 MiB
aaron_3Ch.nd2
6.20 MiB
Captured for 4.nd2
2.71 MiB
Test.nd2
113.28 MiB
Test001.nd2
74.40 MiB
Test13.2.13.nd2
168.50 MiB
Parents
Filter
AND
OR
Options
Columns
Type
Name
Modification Date
ORGANIZATION_UNIT
Cell Migration
2019-06-12 14:13:56
1 - 1 of 1 items
10
Per Page
Page
1
of 1
Children
Select a dataset type
Files Uploader
Select files to upload
Create
Auto upload on drop


Object MICROSCOPY_SAMPLE_T
https://openbis-scu.ethz.ch/openbis/webapp/eln-lims/
Global Search
Lab Notebook
My Space (Obit)
Common Organization Units
Courses
Demo
Flow analyzers experiments collection
Flow sorters experiments collection
Microscopy experiments collection
Experiment_2
2d10MDCK DAPI.nd2
Captured for 4.nd2
Test001.nd2
Test13.2.13.nd2
Test.nd2
aaron_3Ch.nd2
multiple_datasets
Organization Unit Collection
Others
Others (disabled)
Inventory
Stock
Utilities
About
Object: 2d10MDCK DAPI.nd2
/OBIT/DEMO/MICROSCOPY_EXPERIMENTS_COLLECTION/MICROSCOPY_SAMPLE_TYPE_191206141334146000_1
Microscopy Viewer
Data set
2d10MDCK DAPI.nd2 (series 1)
Channel
Merged Channels
DAPI DiR TD
Filter
User defined
DAPI (0, 142) Rescale Reset
DiR (34, 255) Rescale Reset
TD (0, 101) Rescale Reset
Resolution
512x512
Time: 3 sec (4/7) Show Buttons
Depth: 4 (5/6) Show Buttons
Metadata
Name:
2d10MDCK DAPI.nd2
Size:
331522048
Sample name:
2d10MDCK DAPI.nd2
Identification Info
Type:
MICROSCOPY_SAMPLE_TYPE
Experiment:
/OBIT/DEMO/MICROSCOPY_EXPERIMENTS_COLLECTION
Code:
MICROSCOPY_SAMPLE_TYPE_191206141334146000_1
MICROSCOPY_IMG : 2019061214133473 7-312
MICROSCOPY_IMG_THUMBNAIL : 201906121
MICROSCOPY_IMG_CONTAINER : 2d10MDCK
MICROSCOPY_IMG_CONTAINER : 2d10MDCK
MICROSCOPY_IMG_CONTAINER : 2d10MDCK
MICROSCOPY_IMG_CONTAINER : 2d10MDCK
MICROSCOPY_IMG_CONTAINER : 2d10MDCK
Select a dataset type
Files Uploader
Select files to upload
Create
Auto upload on drop

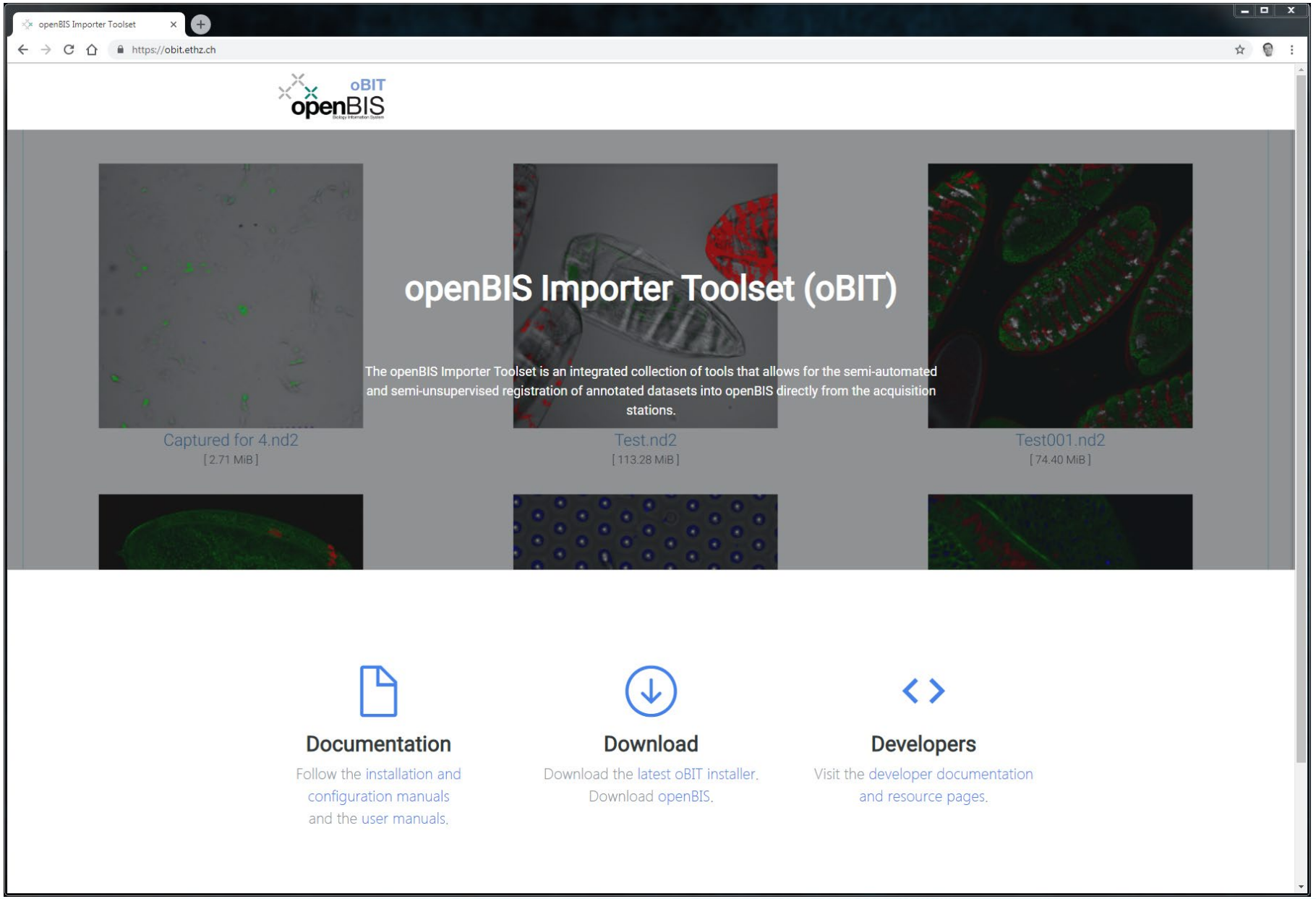
oBIT documentation

The oBIT website has documentation for everyone.

New official project website (migration in process):

https://obit.ethz.ch

https://obit.ethz.ch



https://wiki-bsse.ethz.ch/display/oBIT

openBIS Importer Toolset - open

https://wiki-bsse.ethz.ch/display/oBIT

D-BSSE Wiki | Spaces | People | Calendars | Create | Search

Dashboard

Edit | Save for later | Watch | Share

openBIS Importer Toolset

Created by Ponti Aaron, last modified a minute ago

Abstract

The **openBIS Importer Toolset** is a set of tools to streamline registration of acquired data and metadata into openBIS and extend openBIS via custom views and apps for working with data.

Quick links

Downloads

- openBIS
- oBIT installer

openBIS

- openBIS installation and administration guides

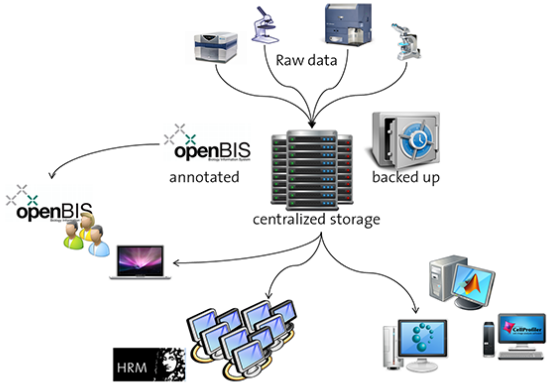
openBIS Importer Toolset

- oBIT installation and administration guides
- oBIT user manual
- oBIT developer documentation
- oBIT support
- oBIT FAQ
- oBIT supported hardware

Description

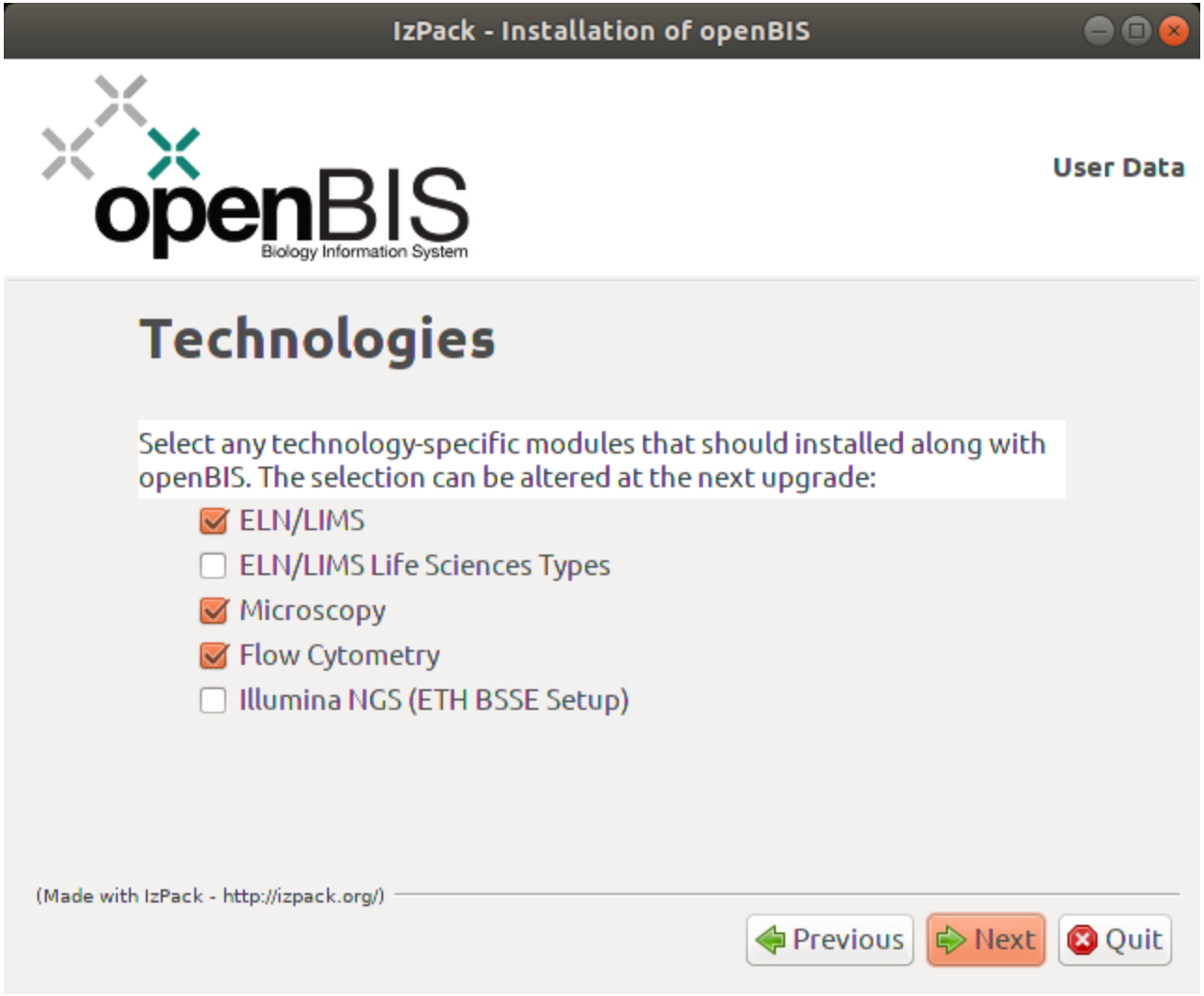
openBIS is an extensible, open source software framework for constructing user-friendly, scalable and powerful information systems for data and metadata acquired in biological experiments. It enables users to collect, integrate, share, publish data and to connect to data processing pipelines.

The **openBIS Importer Toolset** is a tightly integrated collection of tools that allows for the semi-automated, semi-unsupervised registration of annotated datasets into openBIS **directly from the acquisition stations**.



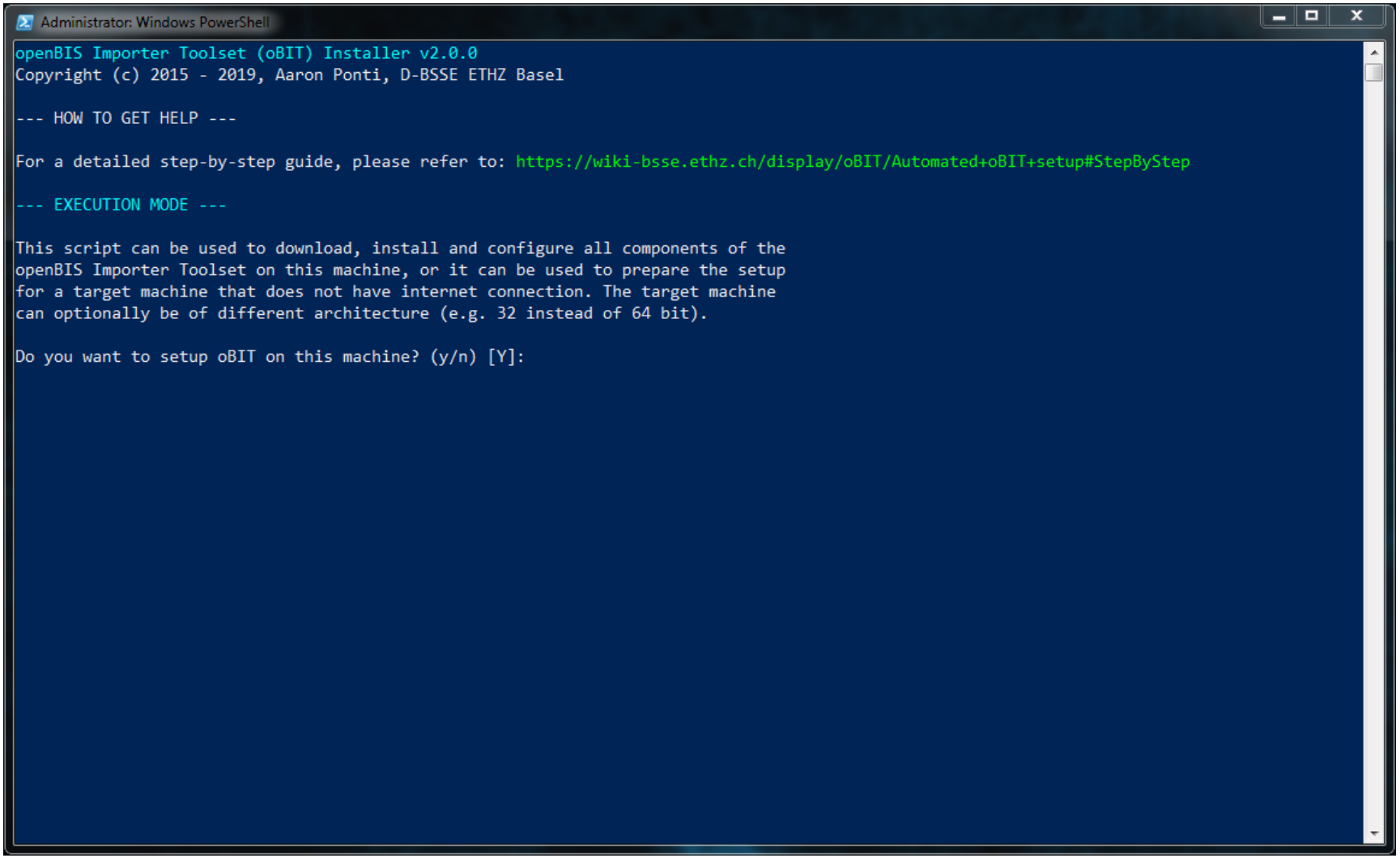
The openBIS Importer Toolset is being developed at the Single Cell Unit (SCU) of the D-BSSE in collaboration with Scientific IT Services (SIS) of the ETH Zurich.

Installation :: openBIS and core technologies



openBIS 19.06

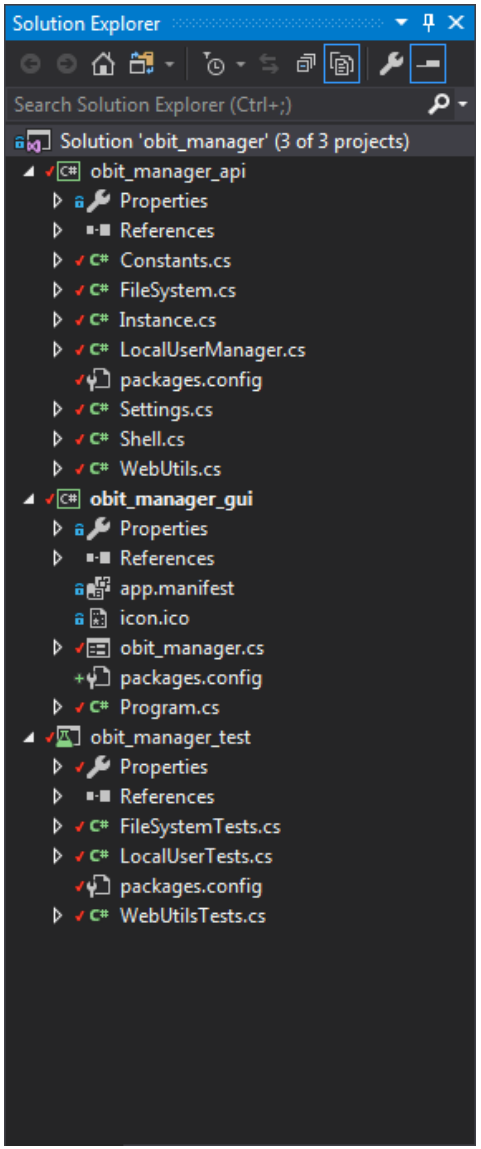
Installation :: openBIS Importer Toolset



Coming soon: oBIT Manager

- oBIT installation
- oBIT configuration
- oBIT upgrade

- oBIT components:
  - Annotation Tool
  - Datamover as a Windows Service
  - (OpenJDK) Java Runtime



Development :: code repositories

- Core technologies (server-side):
  - https://github.com/aarpon/obit_microscopy_core_technology
  - https://github.com/aarpon/obit_flow_core_technology
  - https://github.com/aarpon/obit_shared_core_technology

- openBIS Importer Toolset (client-side)
  - https://github.com/aarpon/obit_annotation_tool
  - https://github.com/aarpon/obit_datamover_jsl
  - https://github.com/aarpon/obit_installer

Summary

- The openBIS/openBIS Importer Toolset synergy aims to:
  - offer a powerful and scalable data and metadata management system
  - streamline data registration directly from shared acquisition machines
  - support multiple acquisition hardware classes
  - offer a reasonably simple way for third parties to add support for new hardware classes

Acknowledgments

SIS

Bernd Rinn
Chandrasekhar Ramakrishnan
Juan Fuentes Serna
Franz-Josef Elmer
Piotr Kupczyk
Antti Luomi
Jakub Straszewski
Caterina Barillari
Manuel Kohler

D-BSSE
Department of Biosystems
Science and Engineering

ITSC

Vernon Bailey
John Ryan
Vincenzo Spanò
Martin Fox

OME

https://obit.ethz.ch