



CONSTRUCTIONDB



# Construction Database for AGATA

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# Outline

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- Introduction
- Principles of new developments
- Illustration
- Conclusion

# Reminders

3

- A tool to track the construction and configuration of AGATA
- An Oracle Database, hosted at the Computer Center of IN2P3 and a Graphical User Interface in Java
- Objects are identified by barcodes and structured by [ObjectName/type/version]

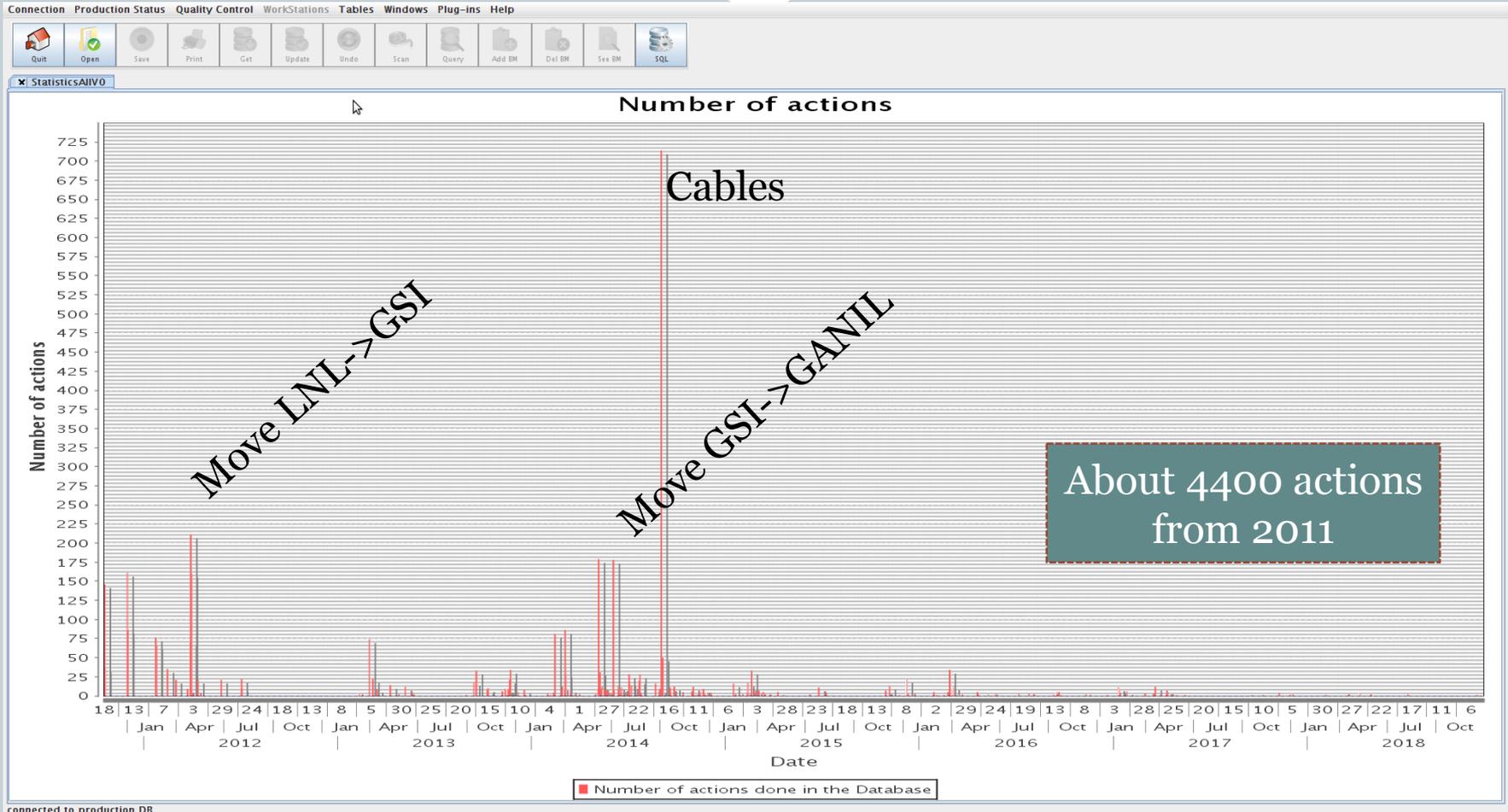


Ex: DET\_CRYO\_AT\_001 is a [CRYOSTAT/AT/1]

Another similar object which differs by its type is for instance a [CRYOSTAT/S/1]

# Usage of DB from 2011

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# Usage of DB

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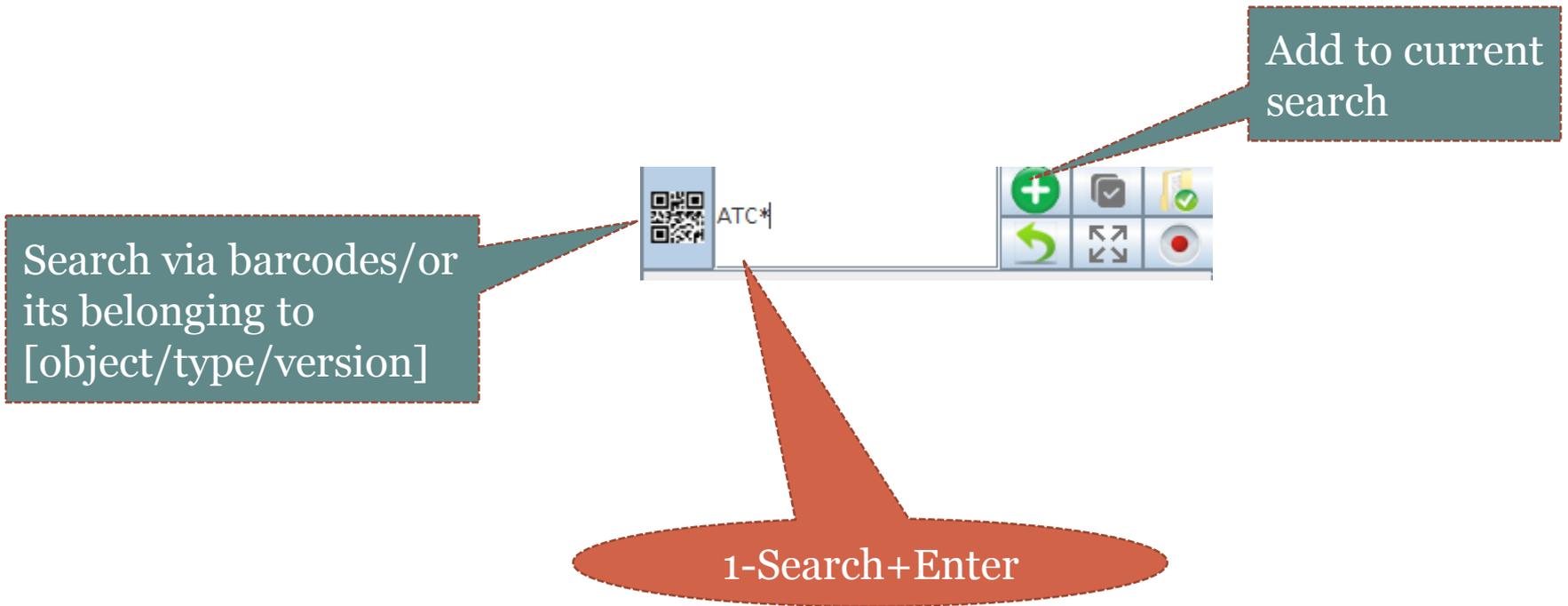
- This tool is important for the move of AGATA, it has been proven by the past:
  1. Database should be up to date before the move to anticipate it
  2. It improves the move, facilitates the inventory of objects transferred : a barcode reader could be used to scan barcodes stuck on them

# New developments : principles

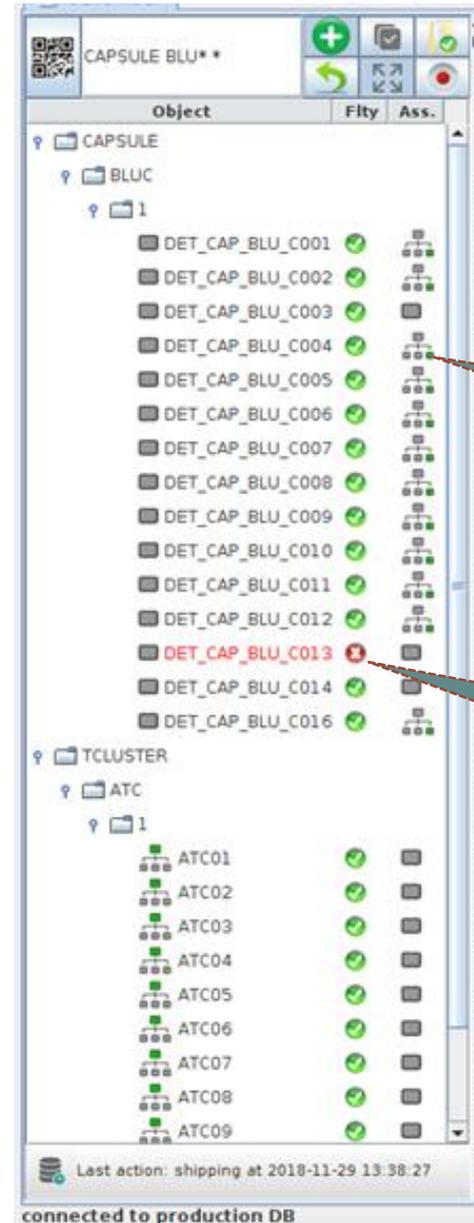
6

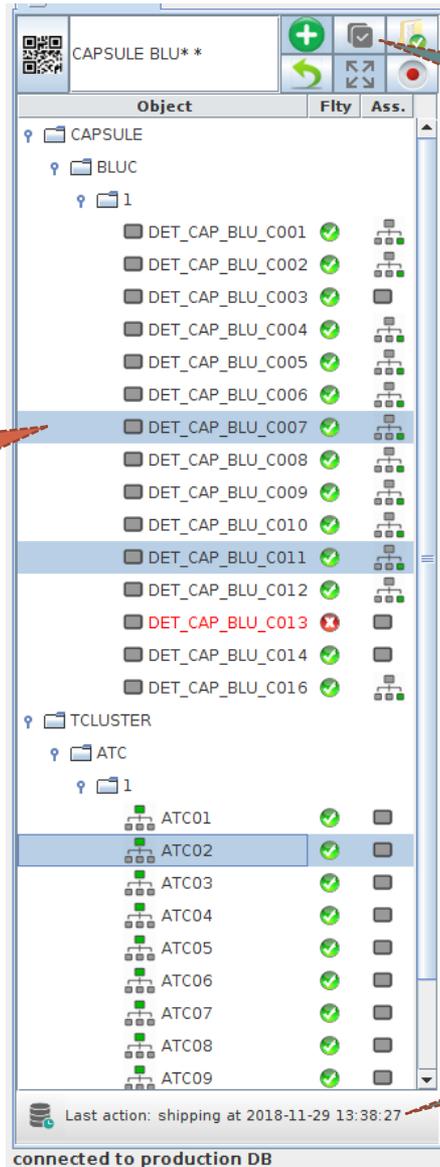
- After feedbacks from AGATA collaboration, we decided to add some more user-friendly panels to the interface
- These panels are based on existing fonctionnalités but we tried to improve the interaction with the user
- These panels are more oriented on objects stored in the DB:

1. For each panel, you can search within objects like « google search »



2. The result of the search is displayed in a rich tree structured by object/type/version and the list of corresponding barcodes



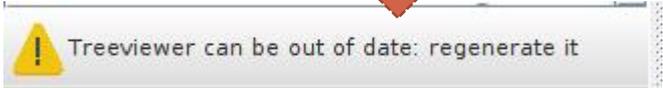


Select All barcodes

2-Select some barcodes

3. You can now « work » on this selected objects in new panels

A taskbar: DB is living, other users can update the DB



# New developments: Principle

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- Based on this tree, 3 new panels have been developed:
  1. An object browser panel which displays various informations on objects
  2. An object history panel which gives details on actions done in time on these objects
  3. An object move panel which manage the transfers of different objects between centers

# Illustration

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**OBJECT BROWSER PANEL:  
VARIOUS INFORMATIONS ON  
OBJECTS ARE DISPLAYED**

1-Select display mode

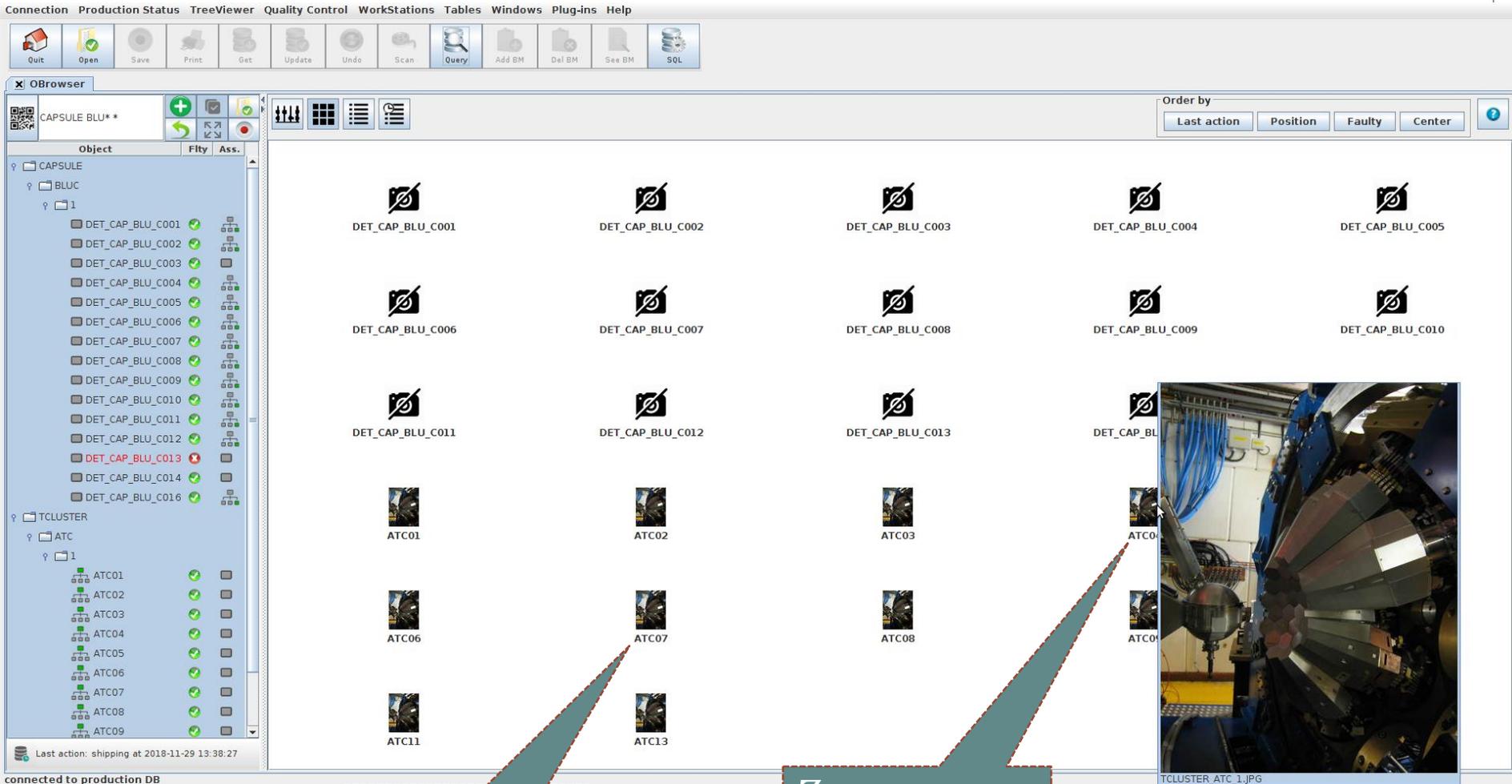
2-Query the DB

The screenshot shows a software interface with a menu bar (Connection, Production Status, TreeView, Quality Control, WorkStations, Tables, Windows, Plug-ins, Help) and a toolbar with icons for Quit, Open, Save, Print, Get, State, Undo, Scan, Query, Add BM, Del BM, See BM, and SQL. The 'Query' icon is circled in red. Below the toolbar is a tree view showing a hierarchy of objects: CAPSULE BLU\*\* (containing BLUC and TCLUSTER) and ATC. The main area displays a table with columns: COUNT(\*), OBJECT, LASTACTION, POSITION, FAULTY, and CURRENTCENTER. The table has 12 rows, with the first row highlighted in red. A green callout box points to the first row with the text: 'Count on objects: 12 ATC registered located at GANIL'. The status bar at the bottom indicates 'connected to production DB' and 'Last action: shipping at 2018-11-29 13:38:27'.

COUNT(*)	OBJECT	LASTACTION	POSITION	FAULTY	CURRENTCENTER
12	TCLUSTER	shipping	ready	valid	GANIL
8	CAPSULE	Assembly	ready	valid	? =>see its parent
1	CAPSULE	shipping	ready	valid	COLOGNE
4	CAPSULE	OWNER	ready	valid	? =>see its parent
1	CAPSULE	shipping	ready	faulty	SAGLAY
1	CAPSULE	shipping	shipping	valid	COLOGNE

Count on objects: 12 ATC registered located at GANIL

# Photos on objects can be displayed



Thumbnails

Zoom on an object

# More detailed informations on objects

Connection Production Status TreeViewer Quality Control WorkStations Tables Windows Plug-ins Help

Quit Open Save Print Get Update Undo Scan Query Add BM Del BM See BM SQL

OBrowser CAPSULE BLU\*\*

Order by: Last action Position Faulty Center

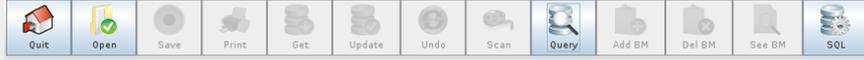
Object	Flty	Ass.	OBJECT_ID	OBJECT	LASTACTION	POSITION	WHEN	FAULTY	CURRENTCENTER	CURRENTASSEMBLYSTATUS
ATC01			ATC01	TCLUSTER	shipping	ready	2014-09-29 17:06:05	valid	GANIL	NotAssembled
ATC02			ATC02	TCLUSTER	shipping	ready	2015-02-16 10:49:42	valid	GANIL	NotAssembled
ATC03			ATC03	TCLUSTER	shipping	ready	2014-10-31 13:58:59	valid	GANIL	NotAssembled
ATC04			ATC04	TCLUSTER	shipping	ready	2014-10-31 13:58:59	valid	GANIL	NotAssembled
ATC05			ATC05	TCLUSTER	shipping	ready	2014-09-29 17:06:05	valid	GANIL	NotAssembled
ATC06			ATC06	TCLUSTER	shipping	ready	2015-01-19 14:19:48	valid	GANIL	NotAssembled
ATC07			ATC07	TCLUSTER	shipping	ready	2015-01-19 14:19:48	valid	GANIL	NotAssembled
ATC08			ATC08	TCLUSTER	shipping	ready	2015-02-16 10:49:42	valid	GANIL	NotAssembled
ATC09			ATC09	TCLUSTER	shipping	ready	2015-12-10 13:15:29	valid	GANIL	NotAssembled
ATC10			ATC10	TCLUSTER	shipping	ready	2015-12-10 13:15:29	valid	GANIL	NotAssembled
ATC11			ATC11	TCLUSTER	shipping	ready	2017-04-19 11:47:51	valid	GANIL	NotAssembled
ATC13			ATC13	TCLUSTER	shipping	ready	2017-04-10 11:05:47	valid	GANIL	NotAssembled
DET_CAP_BLU_C001			DET_CAP_BLU_C001	CAPSULE	OWNER	ready	2013-11-21 10:14:36	valid	? =>see its parent	In ATC03
DET_CAP_BLU_C002			DET_CAP_BLU_C002	CAPSULE	Assembly	ready	2017-04-12 11:14:29	valid	? =>see its parent	In ATC09
DET_CAP_BLU_C003			DET_CAP_BLU_C003	CAPSULE	shipping	ready	2017-04-12 10:33:29	valid	COLOGNE	NotAssembled
DET_CAP_BLU_C004			DET_CAP_BLU_C004	CAPSULE	Assembly	ready	2017-01-11 11:17:54	valid	? =>see its parent	In ATC01
DET_CAP_BLU_C005			DET_CAP_BLU_C005	CAPSULE	OWNER	ready	2013-11-21 10:16:54	valid	? =>see its parent	In ATC02
DET_CAP_BLU_C006			DET_CAP_BLU_C006	CAPSULE	Assembly	ready	2015-01-15 11:13:47	valid	? =>see its parent	In ATC07
DET_CAP_BLU_C007			DET_CAP_BLU_C007	CAPSULE	OWNER	ready	2013-11-21 10:17:54	valid	? =>see its parent	In ATC04
DET_CAP_BLU_C008			DET_CAP_BLU_C008	CAPSULE	Assembly	ready	2015-02-11 14:19:39	valid	? =>see its parent	In ATC08
DET_CAP_BLU_C009			DET_CAP_BLU_C009	CAPSULE	OWNER	ready	2013-11-21 10:18:58	valid	? =>see its parent	In ATC05
DET_CAP_BLU_C010			DET_CAP_BLU_C010	CAPSULE	Assembly	ready	2015-01-15 09:57:47	valid	? =>see its parent	In ATC06
DET_CAP_BLU_C011			DET_CAP_BLU_C011	CAPSULE	Assembly	ready	2015-03-25 10:35:11	valid	? =>see its parent	In ADC03
DET_CAP_BLU_C012			DET_CAP_BLU_C012	CAPSULE	Assembly	ready	2017-04-11 14:58:39	valid	? =>see its parent	In ATC11
DET_CAP_BLU_C013			DET_CAP_BLU_C013	CAPSULE	shipping	ready	2017-04-10 10:22:28	faulty	SACLAY	NotAssembled
DET_CAP_BLU_C014			DET_CAP_BLU_C014	CAPSULE	shipping	shipping	2018-11-29 13:38:27	valid	COLOGNE	NotAssembled
DET_CAP_BLU_C016			DET_CAP_BLU_C016	CAPSULE	Assembly	ready	2017-03-20 15:40:06	valid	? =>see its parent	In ATC13

Last action: shipping at 2018-11-29 13:38:27

connected to production DB

# We can go through history of objects

Connection Production Status TreeViewer Quality Control WorkStations Tables Windows Plug-ins Help



OBrowser CAPSULE BLU \*\*

Order by: Last action Position Faulty Center

Object	OBJECTID	OBJECT	LASTACTION	POSITION	WHEN	FAULTY	CENTER	ASSEMBLYSTATUS
DETCAP_BLU_C001	DETCAP_BLU_C001	CAPSULE	shipping	ready	2016-01-28 15:19:17	valid	GANIL	Notassembled
DETCAP_BLU_C002	DETCAP_BLU_C002	CAPSULE	shipping	ready	2016-01-28 15:23:26	valid	CONVEYOR	Notassembled
DETCAP_BLU_C012	DETCAP_BLU_C012	CAPSULE	shipping	ready	2016-01-28 15:25:29	valid	COLOGNE	Notassembled
DETCAP_BLU_C014	DETCAP_BLU_C014	CAPSULE	shipping	ready	2016-01-28 15:27:44	valid	CONVEYOR	Notassembled
DETCAP_BLU_C014	DETCAP_BLU_C014	CAPSULE	shipping	ready	2016-01-28 15:28:42	valid	GANIL	Notassembled
DETCAP_BLU_C014	DETCAP_BLU_C014	CAPSULE	Assembly	ready	2016-01-28 15:32:05	valid	? =>see its parent	In ATC10
DETCAP_BLU_C002	DETCAP_BLU_C002	CAPSULE	OWNER	shipping	2016-07-06 13:39:43	faulty	CONVEYOR	Notassembled
DETCAP_BLU_C002	DETCAP_BLU_C002	CAPSULE	shipping	ready	2016-07-06 13:41:20	faulty	SACLAY	Notassembled
DETCAP_BLU_C002	DETCAP_BLU_C002	CAPSULE	REPAIR	ready	2016-07-06 13:47:53	valid	SACLAY	Notassembled
DETCAP_BLU_C002	DETCAP_BLU_C002	CAPSULE	CAT	ready	2016-07-06 16:57:18	valid	SACLAY	Notassembled
DETCAP_BLU_C002	DETCAP_BLU_C002	CAPSULE	CAT	shipping	2016-07-07 16:10:34	valid	CONVEYOR	Notassembled
DETCAP_BLU_C002	DETCAP_BLU_C002	CAPSULE	shipping	ready	2016-07-25 14:24:20	valid	COLOGNE	Notassembled
DETCAP_BLU_C004	DETCAP_BLU_C004	CAPSULE	OWNER	shipping	2017-01-09 14:59:16	faulty	CONVEYOR	Notassembled
DETCAP_BLU_C004	DETCAP_BLU_C004	CAPSULE	shipping	ready	2017-01-09 15:01:21	faulty	GANIL	Notassembled
DETCAP_BLU_C004	DETCAP_BLU_C004	CAPSULE	REPAIR	ready	2017-01-09 16:01:19	valid	GANIL	Notassembled
DETCAP_BLU_C004	DETCAP_BLU_C004	CAPSULE	OWNER	ready	2017-01-09 16:04:40	valid	GANIL	Notassembled
DETCAP_BLU_C012	DETCAP_BLU_C012	CAPSULE	shipping	shipping	2017-01-09 16:24:46	valid	CONVEYOR	Notassembled
DETCAP_BLU_C012	DETCAP_BLU_C012	CAPSULE	shipping	ready	2017-01-09 16:25:50	valid	GANIL	Notassembled
DETCAP_BLU_C003	DETCAP_BLU_C003	CAPSULE	De-Assembly	ready	2017-01-11 11:16:17	valid	GANIL	Notassembled
DETCAP_BLU_C004	DETCAP_BLU_C004	CAPSULE	Assembly	ready	2017-01-11 11:17:54	valid	? =>see its parent	In ATC01
DETCAP_BLU_C003	DETCAP_BLU_C003	CAPSULE	De-Assembly	shipping	2017-01-11 11:25:32	valid	CONVEYOR	Notassembled
DETCAP_BLU_C012	DETCAP_BLU_C012	CAPSULE	shipping	shipping	2017-01-11 14:01:01	valid	CONVEYOR	Notassembled
ATC11	ATC11	TCLUSTER	Registration	ready	2017-01-25 11:28:25	valid	COLOGNE	Notassembled
DETCAP_BLU_C012	DETCAP_BLU_C012	CAPSULE	shipping	ready	2017-01-25 12:12:27	valid	COLOGNE	Notassembled
DETCAP_BLU_C003	DETCAP_BLU_C003	CAPSULE	shipping	ready	2017-01-25 12:13:42	valid	COLOGNE	Notassembled
DETCAP_BLU_C016	DETCAP_BLU_C016	CAPSULE	Registration	ready	2017-03-20 15:24:14	valid	COLOGNE	Notassembled
ATC13	ATC13	TCLUSTER	Registration	ready	2017-03-20 15:37:54	valid	COLOGNE	Notassembled
DETCAP_BLU_C016	DETCAP_BLU_C016	CAPSULE	Assembly	ready	2017-03-20 15:40:06	valid	? =>see its parent	In ATC13
ATC13	ATC13	TCLUSTER	Registration	shipping	2017-03-20 15:43:24	valid	COLOGNE	Notassembled
DETCAP_BLU_C013	DETCAP_BLU_C013	CAPSULE	De-Assembly	ready	2017-03-31 15:56:52	valid	GANIL	Notassembled
DETCAP_BLU_C013	DETCAP_BLU_C013	CAPSULE	FREEACTION	faulty	2017-03-31 16:00:47	faulty	GANIL	Notassembled
DETCAP_BLU_C013	DETCAP_BLU_C013	CAPSULE	shipping	shipping	2017-03-31 16:02:08	faulty	CONVEYOR	Notassembled
DETCAP_BLU_C013	DETCAP_BLU_C013	CAPSULE	shipping	ready	2017-04-10 10:22:28	faulty	SACLAY	Notassembled
ATC13	ATC13	TCLUSTER	shipping	ready	2017-04-10 11:05:47	valid	GANIL	Notassembled
DETCAP_BLU_C012	DETCAP_BLU_C012	CAPSULE	Assembly	ready	2017-04-11 14:58:39	valid	? =>see its parent	In ATC11
DETCAP_BLU_C003	DETCAP_BLU_C003	CAPSULE	shipping	shipping	2017-04-11 15:15:30	valid	COLOGNE	Notassembled
DETCAP_BLU_C002	DETCAP_BLU_C002	CAPSULE	shipping	shipping	2017-04-11 16:57:25	valid	COLOGNE	Notassembled
DETCAP_BLU_C003	DETCAP_BLU_C003	CAPSULE	shipping	ready	2017-04-12 10:28:15	valid	GANIL	Notassembled
DETCAP_BLU_C003	DETCAP_BLU_C003	CAPSULE	shipping	shipping	2017-04-12 10:31:56	valid	CONVEYOR	Notassembled
DETCAP_BLU_C003	DETCAP_BLU_C003	CAPSULE	shipping	ready	2017-04-12 10:33:29	valid	COLOGNE	Notassembled
DETCAP_BLU_C002	DETCAP_BLU_C002	CAPSULE	shipping	ready	2017-04-12 11:12:04	valid	GANIL	Notassembled
DETCAP_BLU_C002	DETCAP_BLU_C002	CAPSULE	Assembly	ready	2017-04-12 11:14:29	valid	? =>see its parent	In ATC09
ATC11	ATC11	TCLUSTER	Registration	shipping	2017-04-19 11:46:37	valid	CONVEYOR	Notassembled
ATC11	ATC11	TCLUSTER	shipping	ready	2017-04-19 11:47:51	valid	GANIL	Notassembled
DETCAP_BLU_C014	DETCAP_BLU_C014	CAPSULE	FREEACTION	ready	2018-11-16 13:17:26	valid	? =>see its parent	In ATC10
DETCAP_BLU_C014	DETCAP_BLU_C014	CAPSULE	De-Assembly	ready	2018-11-29 11:23:58	valid	GANIL	Notassembled
DETCAP_BLU_C014	DETCAP_BLU_C014	CAPSULE	De-Assembly	shipping	2018-11-29 12:44:10	valid	CONVEYOR	Notassembled
DETCAP_BLU_C014	DETCAP_BLU_C014	CAPSULE	shipping	ready	2018-11-29 13:36:57	valid	SACLAY	Notassembled
DETCAP_BLU_C014	DETCAP_BLU_C014	CAPSULE	shipping	shipping	2018-11-29 13:38:27	valid	COLOGNE	Notassembled

Last action: shipping at 2018-11-29 13:38:27

connected to production DB

# Illustration

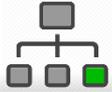
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**OBJECT HISTORY PANEL:  
ACCESS TO THE DETAILS OF  
DIFFERENT ACTIONS DONE ON  
OBJECTS IN TIME**

1-Query the DB

Coverflow: each item is an action done on one object

Other possible items



Connection Production Status TreeViewer Quality Control Workspaces Tables Windows Plug-ins Help



OHISTORY

CAPSULE BLU\*\*

Object Fly Ass.

- CAPSULE
  - BLUC
    - 1
      - DET\_CAP\_BLU\_C001 ✓
      - DET\_CAP\_BLU\_C002 ✓
      - DET\_CAP\_BLU\_C003 ✓
      - DET\_CAP\_BLU\_C004 ✓
      - DET\_CAP\_BLU\_C005 ✓
      - DET\_CAP\_BLU\_C006 ✓
      - DET\_CAP\_BLU\_C007 ✓
      - DET\_CAP\_BLU\_C008 ✓
      - DET\_CAP\_BLU\_C009 ✓
      - DET\_CAP\_BLU\_C010 ✓
      - DET\_CAP\_BLU\_C011 ✓
      - DET\_CAP\_BLU\_C012 ✓
      - DET\_CAP\_BLU\_C013 ✗
      - DET\_CAP\_BLU\_C014 ✓
      - DET\_CAP\_BLU\_C016 ✓
  - TCLUSTER
    - ATC
      - 1
        - ATC01 ✓
        - ATC02 ✓
        - ATC03 ✓
        - ATC04 ✓
        - ATC05 ✓
        - ATC06 ✓
        - ATC07 ✓
        - ATC08 ✓
        - ATC09 ✓

Last action: shipping at 2018-11-29 13:38:27

OBJECT ATC13: date 2017-03-20

First date 2011-11-30 51 101 151 201 Last date 2018-11-29

Click on a picture to display the default panel for the action/Right-click on a picture to display other available panels

OBJECT: ATC13

=>REGISTRATION in the center of COLOGNE

at: 2017-03-20 15:37:54 : 903 days ago (about 2 years, 5 months)

Object valid

2-Display log

Log area: here the registration of the ATC13

Slider: details the date of each action in the coverflow

connected to production DB

# Another example

Connection Production Status TreeViewer Quality Control WorkStations Tables Windows Plug-ins Help

Quit Open Save Print Get Update Undo Scan Query Add BM Del BM See BM SQL

**X OHistory**

Object Flty Ass.

- CAPSULE
  - BLUC
    - 1
      - DET\_CAP\_BLU\_C001 ✓
      - DET\_CAP\_BLU\_C002 ✓**
      - DET\_CAP\_BLU\_C003 ✓
      - DET\_CAP\_BLU\_C004 ✓
      - DET\_CAP\_BLU\_C005 ✓
      - DET\_CAP\_BLU\_C006 ✓
      - DET\_CAP\_BLU\_C007 ✓
      - DET\_CAP\_BLU\_C008 ✓
      - DET\_CAP\_BLU\_C009 ✓
      - DET\_CAP\_BLU\_C010 ✓
      - DET\_CAP\_BLU\_C011 ✓
      - DET\_CAP\_BLU\_C012 ✓
      - DET\_CAP\_BLU\_C013 ✗**
      - DET\_CAP\_BLU\_C014 ✓
      - DET\_CAP\_BLU\_C016 ✓
- TCLUSTER
  - ATC
    - 1
      - ATC01 ✓
      - ATC02 ✓
      - ATC03 ✓
      - ATC04 ✓
      - ATC05 ✓
      - ATC06 ✓
      - ATC07 ✓
      - ATC08 ✓
      - ATC09 ✓

Last action: shipping at 2018-11-29 13:38:27

connected to production DB



OBJECT DET\_CAP\_BLU\_C002: date 2017-04-12

First date: 2011-11-30 | Last date: 21 2017-04-12

Click on a picture to display the default panel for the action/Right-click on a picture to display other available panels

OBJECT: DET\_CAP\_BLU\_C002

=>ASSEMBLY:  
The object has been assembled at 2017-04-12 11:14:29 in ATC09 in the center of GANIL

Assembly of  
DET\_CAP\_BLU\_Coo2 in  
ATC09

# More details on this assembly

3-Right click

The screenshot shows the ConstructionDB software interface. On the left is a tree view with 'Object' and 'Fly' tabs. Under 'Object', 'CAPSULE' is expanded to show 'BLUC' and '1'. Under '1', a list of components like 'DET\_CAP\_BLU\_C001' through 'DET\_CAP\_BLU\_C016' is shown. Under 'Fly', 'TCLUSTER' is expanded to show 'ATC' and '1'. Under '1', a list of components like 'ATC01' through 'ATC09' is shown. The main area displays 'OBJECT DET\_CAP\_BLU\_C002: date 2017-04-12' with a timeline from 2011-11-30 to 2017-04-12. Below the timeline, there are two panels for 'Composition of ATC09'. The left panel is for the reference date '2017-04-12 11:14:29' and the right panel is for the date of assembly '2017-04-12 11:14:29'. Both panels show a list of components and their assembly dates. A red circle highlights the date '2017-04-12 11:14:29' in the right panel. A red speech bubble points to a right-click icon in the main area. A red arrow points from the 'ATC09' component in the tree view to the left panel.

Choose the panel to display in the bottom area :

- Assembly History Navigator
- Assembly Log Area
- Assembly History Navigator
- Common Log Area

Object ID : ATC09    Ref. date chosen (YYYY-MM-DD HH24:MI.SS): 2017-04-12 11:14:29    Date of assembly or de-assembly: 2017-04-12 11:14:29

Composition of ATC09 at the reference date chosen (2017-04-12 11:14:29):

- DET\_CAP\_BLU\_C002 : CAPSULE Blue (C) v. 1 =>Assembled at 2017-04-12 11:14:29
- DET\_CAP\_GRE\_B008 : CAPSULE Green (B) v. 1 =>Assembled at 2015-12-07 16:33:41
- DET\_CAP\_RED\_A004 : CAPSULE Red (A) v. 1 =>Assembled at 2015-12-07 16:33:41
- DET\_CRVO\_AT\_009 : CRVOSTAT Asymmetric Triple v. 1 =>Assembled at 2015-12-07 16:34:42
- DET\_ECP\_AT\_010 : ENDCAP Asymmetric Triple v. 1 =>Assembled at 2015-12-07 16:34:42
- DET\_PABO\_016 : PATCHBOX Low Voltage v. 1 =>Assembled at 2015-12-07 16:36:00

Composition of ATC09 at the above date (2017-04-12 11:14:29, date of assembly or de-assembly):

- DET\_CAP\_BLU\_C002 : CAPSULE Blue (C) v. 1 =>Assembled at 2017-04-12 11:14:29
- DET\_CAP\_GRE\_B008 : CAPSULE Green (B) v. 1 =>Assembled at 2015-12-07 16:33:41
- DET\_CAP\_RED\_A004 : CAPSULE Red (A) v. 1 =>Assembled at 2015-12-07 16:33:41
- DET\_CRVO\_AT\_009 : CRVOSTAT Asymmetric Triple v. 1 =>Assembled at 2015-12-07 16:34:42
- DET\_ECP\_AT\_010 : ENDCAP Asymmetric Triple v. 1 =>Assembled at 2015-12-07 16:34:42
- DET\_PABO\_016 : PATCHBOX Low Voltage v. 1 =>Assembled at 2015-12-07 16:36:00

Max. number of components displayed: 100

Display all assemblies in ATC09 at that date

# Comparison of assemblies in time

The screenshot displays a software interface for assembly management. The top menu bar includes: Connection, Production Status, TreeViewer, Quality Control, WorkStations, Tables, Windows, Plug-ins, Help. The toolbar contains icons for Quit, Open, Save, Print, Get, Update, Undo, Scan, Query, Add BM, Del BM, See BM, and SQL.

The left-hand pane shows a tree view of objects:

- CAPSULE
  - BLUC
    - 1
      - DET\_CAP\_BLU\_C001 ✓
      - DET\_CAP\_BLU\_C002 ✓
      - DET\_CAP\_BLU\_C003 ✓
      - DET\_CAP\_BLU\_C004 ✓
      - DET\_CAP\_BLU\_C005 ✓
      - DET\_CAP\_BLU\_C006 ✓
      - DET\_CAP\_BLU\_C007 ✓
      - DET\_CAP\_BLU\_C008 ✓
      - DET\_CAP\_BLU\_C009 ✓
      - DET\_CAP\_BLU\_C010 ✓
      - DET\_CAP\_BLU\_C011 ✓
      - DET\_CAP\_BLU\_C012 ✓
      - DET\_CAP\_BLU\_C013 ✗
      - DET\_CAP\_BLU\_C014 ✓
      - DET\_CAP\_BLU\_C016 ✓
- TCLUSTER
  - ATC
    - 1
      - ATC01 ✓
      - ATC02 ✓
      - ATC03 ✓
      - ATC04 ✓
      - ATC05 ✓
      - ATC06 ✓
      - ATC07 ✓
      - ATC08 ✓
      - ATC09 ✓

The main content area shows the assembly history for object **DET\_CAP\_BLU\_C002** as of **2017-04-12**. The timeline shows dates from 2011-11-30 to 2017-04-12. A callout box points to the assembly date **2015-12-07 16:24:56**.

The assembly details for **ATC09** at the reference date (2017-04-12 11:14:29) are:

- ATC09 : TCLUSTER Asymmetric Triple Cluster v. 1
  - DET\_CAP\_BLU\_C002 : CAPSULE Blue (C) v. 1 =>Assembled at 2017-04-12 11:14:29
  - DET\_CAP\_GRE\_B008 : CAPSULE Green (B) v. 1 =>Assembled at 2015-12-07 16:33:41
  - DET\_CAP\_RED\_A004 : CAPSULE Red (A) v. 1 =>Assembled at 2015-12-07 16:33:41
  - DET\_CRYO\_AT\_009 : CRYOSTAT Asymmetric Triple v. 1 =>Assembled at 2015-12-07 16:34:42
  - DET\_ECP\_AT\_010 : ENDCAP Asymmetric Triple v. 1 =>Assembled at 2015-12-07 16:34:42
  - DET\_PABO\_016 : PATCHBOX Low Voltage v. 1 =>Assembled at 2015-12-07 16:36:00

The assembly details for **ATC09** at the assembly date (2015-12-07 16:24:56) are:

- ATC09 : TCLUSTER Asymmetric Triple Cluster v. 1
  - DET\_CAP\_BLU\_C013 : CAPSULE Blue (C) v. 1 =>Assembled at 2015-12-07 16:24:56

Navigation buttons at the bottom include: First assembly/de-assembly in this object.

Composition of ATC09 at another date

4-Move in history of ATC09

# Search in history to find why an object became faulty

Connection Production Status TreeViewer Quality Control WorkStations Tables Windows Plug-ins Help

Quit Open Save Print Get Update Undo Scan Query Add BM Del BM See BM SQL

**OHISTORY**

Object Flty Ass.

- CAPSULE
  - BLUC
    - 1
      - DET\_CAP\_BLU\_C001 ✓
      - DET\_CAP\_BLU\_C002 ✓
      - DET\_CAP\_BLU\_C003 ✓
      - DET\_CAP\_BLU\_C004 ✓
      - DET\_CAP\_BLU\_C005 ✓
      - DET\_CAP\_BLU\_C006 ✓
      - DET\_CAP\_BLU\_C007 ✓
      - DET\_CAP\_BLU\_C008 ✓
      - DET\_CAP\_BLU\_C009 ✓
      - DET\_CAP\_BLU\_C010 ✓
      - DET\_CAP\_BLU\_C011 ✓
      - DET\_CAP\_BLU\_C012 ✓
      - DET\_CAP\_BLU\_C013 ✗**
      - DET\_CAP\_BLU\_C014 ✓
      - DET\_CAP\_BLU\_C016 ✓
- TCLUSTER
  - ATC
    - 1
      - ATC01 ✓
      - ATC02 ✓
      - ATC03 ✓
      - ATC04 ✓
      - ATC05 ✓
      - ATC06 ✓
      - ATC07 ✓
      - ATC08 ✓
      - ATC09 ✓

OBJECT DET\_CAP\_BLU\_C013: date 2017-03-31

First date 2015-01-15 1 2 3 4 5 Last date 6 2017-04-10

Click on a picture to display the default panel for the action/Right-click on a picture to display other available panels

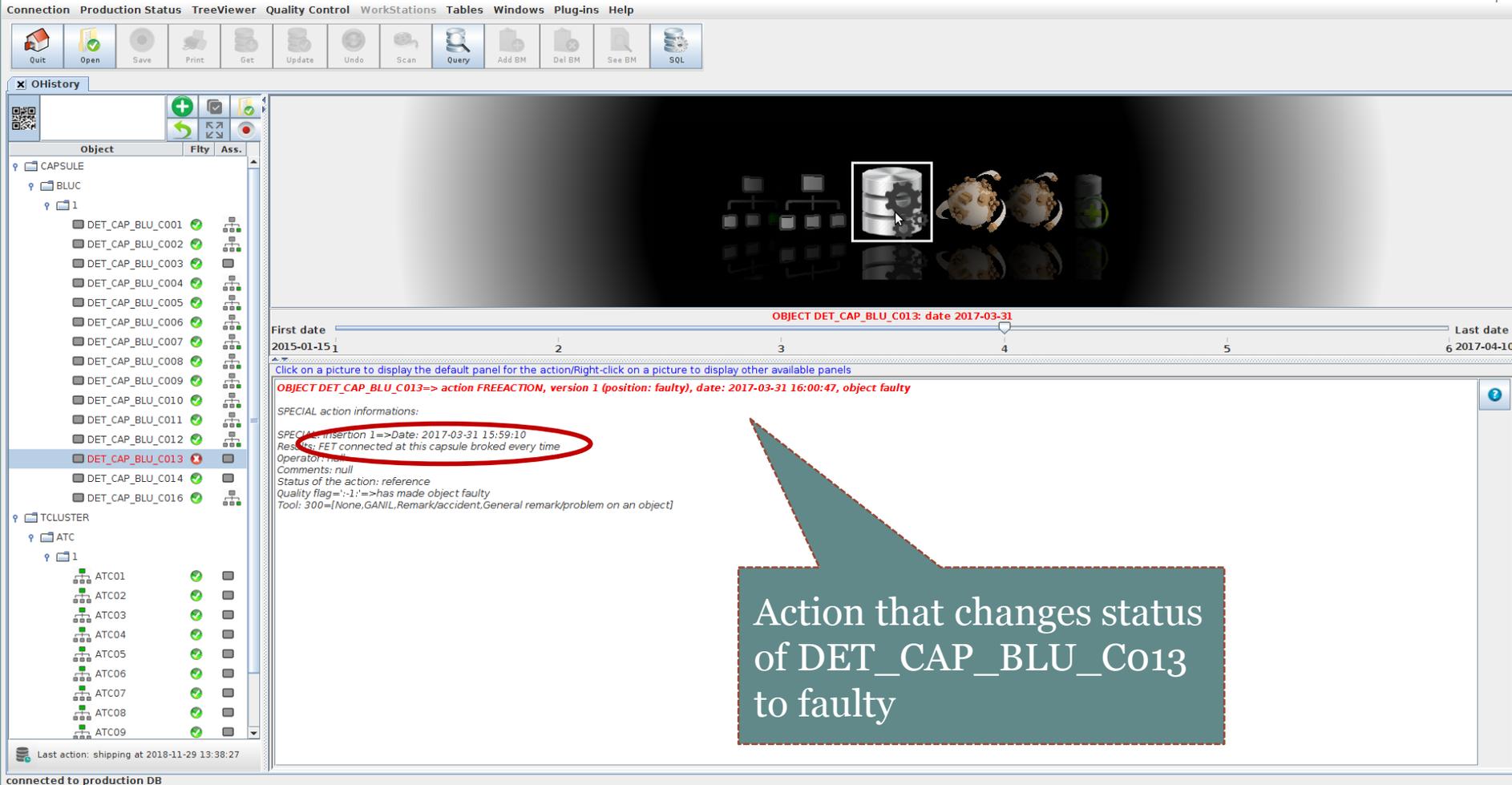
OBJECT DET\_CAP\_BLU\_C013=> action FREEACTION, version 1 (position: faulty), date: 2017-03-31 16:00:47, object faulty

SPECIAL action informations:

SPECIAL: insertion 1=>Date: 2017-03-31 15:59:10  
Results: FET connected at this capsule broke every time  
Operator: null  
Comments: null  
Status of the action: reference  
Quality flag='-1:1'=>has made object faulty  
Tool: 300=[None,GANIL,Remark/accident.General remark/problem on an object]

Last action: shipping at 2018-11-29 13:38:27

connected to production DB



# Illustration

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## **OBJECT MOVE PANEL: HOW TO MANAGE TRANSFERS BETWEEN CENTERS**

# Reminder: a transfer in DB

23



- A transfer has a barcode (stuck on the transfer box for instance)
- Contains objects to move
- Composed of 2 actions: sending and reception (2 persons involved)
- Update the location of objects in the DB

Global view of transfers for a center (one box/transfer)

Working box in the top panel

Connection Production Status TreeViewer Quality Control WorkStations Tables Windows Plug-ins Help

Quit Open Save Print Get Update Undo Scan Query Add BM Del BM See BM SQL

test\_0\*

Object	Flty	Ass.
test_002	✓	■
test_004	✓	■
test_005	✓	■
test_006	✗	■
test_007	✓	■
test_008	✓	■
test_009	✓	■
test_013	✓	■
test_015	✓	■
test_016	✗	■
test_020	✓	■
test_021	✓	■
test_022	✓	■
test_023	✓	■
2		
test_014	✓	■
test_017	✓	■
test_018	✓	■
test_019	✓	■
GRE		
1		
test_011	✓	■
test_012	✓	■
RED		
1		
test_003	✗	■
TESTASCITT		
TESTASCITYPE		
TESTASCII		
test_010	✓	■

TRANSFERID=TR\_088  
FROM: LYON TO: COLOGNE, BY:CONVEYOR  
Sending date: 2019-09-11T14:54:57  
Comment:  
Nb of objects: 0

SENDING

TRANSFERID=TR\_087  
FROM: LYON TO: COLOGNE, BY:CONVEYOR  
Sending date: 2019-09-11T14:53:27  
Comment:  
Nb of objects: 1

SENDING

test\_019

TRANSFERID=TR\_086  
FROM: COLOGNE TO: LYON, BY:CONVEYOR  
Sent on: 2019-09-06T14:41:41, reception date will  
Comment: Test  
Nb of objects: 2

RECEPTION

test\_016  
DET\_CRYOST\_T\_0001

Last action: shipping at 2019-09-06 16:46:35  
connected to dev DB

Other waiting transfers

Drag & Drop selected items in the working box

Enter directly barcode (or scan it)

Checks are done during the insertion of objects in the box

Remove objects from top box

Connection Production Status Tree Error WorkStations Tables Windows Plug-ins Help

Quit Open Save Print Date Undo Scan Query Add BM Del BM See BM SQL

Object

- test\_002
- test\_004
- test\_005
- test\_006
- test\_007
- test\_008
- test\_009
- test\_010
- test\_011
- test\_012
- test\_013
- test\_014
- test\_017
- test\_018
- test\_019

GRE

- 1

RED

- 1

TESTASCIIT

- TESTASCIITYPE
- TESTASCII
- test\_010

TRANSFERID=TR\_088  
FROM: LYON TO: COLOGNE, BY: CONVEYOR  
Sending date: 2019-09-11T14:54:57  
Comment:  
Nb of objects: 1

SENDING  
test\_014  
CAPSULE type BLU version 2 / Contains no object

TRANSFERID=TR\_086  
FROM: COLOGNE TO: LYON, BY: CONVEYOR  
Sent on: 2019-09-06T14:41:41, reception date will  
Comment: Test  
Nb of objects: 2

RECEPTION  
test\_016  
DET\_CRYOST\_T\_0001

Enter Barcode of object to add:

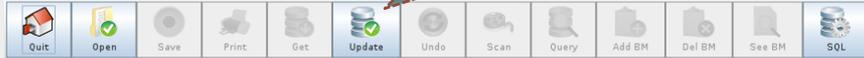
Last action: shipping at 2019-09-06 16:46:35

connected to dev DB

Update the top transfer box only

Add a new transfer box

Connection Production Status TreeViewer Quality Control WorkStations Tables Windows Plug-ins Help



X OMove X OBrowser

Object	Flty	Ass.
test_002	✓	☐
test_004	✓	☐
test_005	✓	☐
test_006	✗	☐
test_007	✓	☐
test_008	✓	☐
test_009	✓	☐
test_013	✓	☐
test_015	✓	☐
test_016	✗	☐
test_020	✓	☐
test_021	✓	☐
test_022	✓	☐
test_023	✓	☐
2		
test_014	✓	☐
test_017	✓	☐
test_018	✓	☐
test_019	✓	☐
GRE		
1		
test_011	✓	☐
test_012	✓	☐
RED		
1		
test_003	✗	☐
TESTASCIIT		
TESTASCITYPE		
TESTASCII		
test_010	✓	☐

**TRANSFERID=TR\_087**  
FROM: LYON TO: COLOGNE, BY:CONVEYOR  
Sending date: 2019-09-11T14:53:27  
Comment:  
Nb of objects: 1

**SENDING**  
test\_019  
CAPSULE type: BLU version 2 / Contains no object

+ - ✎

Enter Barcode of object to add:

**TRANSFERID=TR\_086**  
FROM: COLOGNE TO: LYON, BY:CONVEYOR  
Sent on: 2019-09-06T14:41:41, reception date will  
Comment: Test  
Nb of objects: 2

**RECEPTION**  
test\_016  
DET\_CRYOST\_T\_0001

**TRANSFERID=TR\_088**  
FROM: LYON TO: COLOGNE, BY:CONVEYOR  
Sending date: 2019-09-11T14:54:57  
Comment:  
Nb of objects: 1

**SENDING**  
test\_014

Double click on a box to swap it with working box

Drag & Drop boxes in the waiting list to change order

Prepared sending transfers are kept stored in file



The main interface of the software is displayed. On the left is a tree view of objects, including folders like GRE, RED, and TESTASCIIT, and individual objects like test\_002 through test\_023. The central area shows a 3D rendering of several cardboard boxes on a light-colored floor. Overlaid on this are three information panels: 1. Top panel: 'TRANSFERID=TR\_087' with details for a sending transfer from LYON to COLOGNE. 2. Middle-left panel: 'TRANSFERID=TR\_086' with details for a reception transfer from COLOGNE to LYON. 3. Middle-right panel: 'TRANSFERID=TR\_088' with details for a sending transfer from LYON to COLOGNE. On the right side, there is a control panel with a '+' button, a '-' button, and a document icon. Below these is a text input field labeled 'Enter Barcode of object to add:' and a '?' help button.

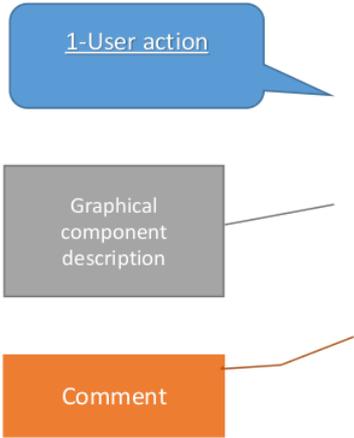
Ongoing transfer are automatically loaded

Load documentation on this panel (open pdf file)

Documentation guides step by step users for each new panel

## Legend

1-User action



Graphical  
component  
description

Comment

# Example of documentation

Welcome to the AGATA DataBase Navigator

Connection Production Status TreeViewer Quality Control WorkStations Tables Windows Plug-ins Help

Quit Open Save Print Get Update Undo Scan Query Add BM Del BM See BM SQL

OMove

TRANSFERID=TR\_086  
FROM: COLOGNE TO: LYON, BY:CONVEYOR  
Sent on: 2019-09-06T14:41:41, reception date will be: 2019-09-06T14:43:41  
Comment: Test: OK  
Nb of objects: 2

RECEPTION  
test\_016  
CAPSULE type BLU version 1 / Contains no object  
DET\_CRYOST\_T\_0001  
CRYOSTAT type TC version 1 / Contains 1 object

TRANSFERID=TR\_085  
FROM: COLOGNE TO: LYON, BY:CONVEYOR  
Sent on: 2019-09-05T14:37:02, reception date will  
Comment:  
Nb of objects: 1

RECEPTION  
test\_014

Enter transfer id  
enter barcode (or scan it) TR\_087  
OK Cancel

2-You can add a new sending transfer box

Add a new sending transfer box

Enter Barcode of object to add:

3-Enter a barcode for this new transfer

If this functionality is enabled for this DB, a barcode is automatically proposed (you can change the type/format of transfer proposition in the Preferences Panel)

Generate the TreeView

connected to dev DB

# Conclusion

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- We tried to render the interface more user-friendly
- To use it, contact us: **agatadb\_at\_ipnl.in2p3.fr**
- Any other propositions are welcome
- An up to date Database would facilitate the move of AGATA
- Our goal is to maintain this tool and continue developments, other collaborations use it or will use it (NEDA, SIRIUS?)

*Thank you for your attention*