



Edmundo Fraga

Technical support for Beamlines at ALBA

AMMW 2018

26 – 28 September 2018

Barcelona

- **INTRODUCTION**
 - Who are we?
 - Where are we in the organization?
 - Our mission
 - Our daily tasks
 - Who we give support to?
 - Which tools we have?
 - Proximity workshop
 - 3D printers room
 - General workshop

- **MANAGEMENT STRATEGIES**
 - Manpower distribution
 - Time Management
 - Loan pool and consumables database
 - 3D printers orders
 - Floor coordinators on shifts Elog

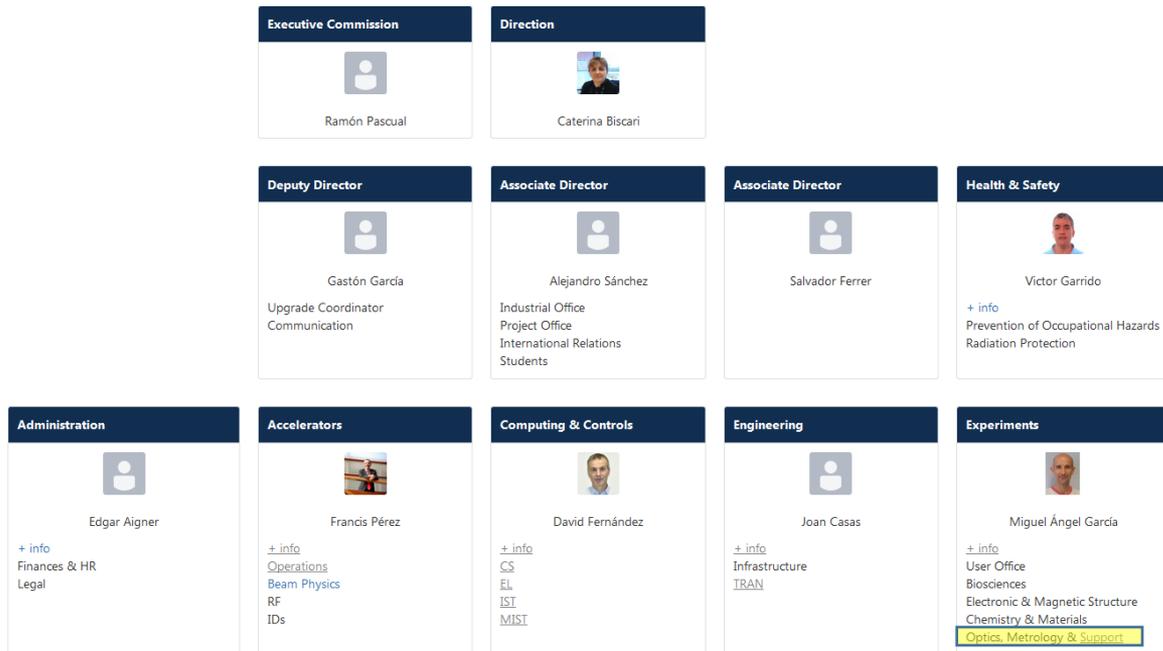
- Two groups in the section:
 - Beamline technicians (5 members + 2 students)
 - Floor coordinators (6 members)

- Beamline technicians give technical support to the experiments division
- They have several fields of expertise
 - Mechanical design
 - Mechanics
 - Vacuum
 - Electronics
 - Machining

- Floor coordinators work on shifts outside working hours, and only when there is beam for users.
- On shifts:
 - They support users on on-going experiments
 - They receive all the alarms at ALBA (control, vacuum)
 - They carry out survey activities within the Experimental Hall
 - They ensure that all the safety regulations are met in the on-going experiments.
 - The FC will support the operator in the ALBA control room.
- During non shift time they join the technical support to the experiments division
- Their profiles are more scientific than technical to give support to users, and they have expertise on control and vacuum

- Focused mainly on beamline technicians & no shift work for floor coordinators

Where are we in the ALBA organization?



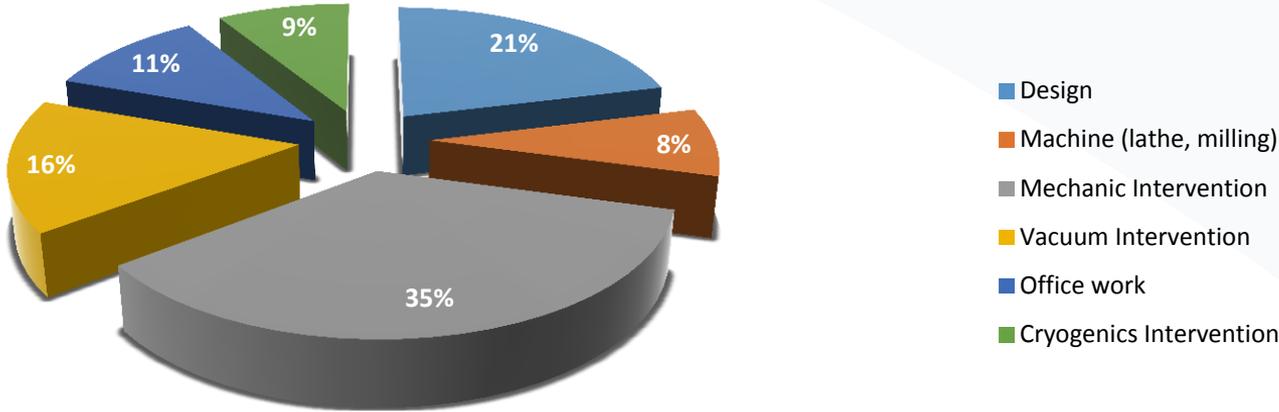
- We do not give support alone to beamlines (Controls & Engineering divisions)
- We are not the only one neither.
- Interventions with more than one division involved are normally organized by the beamline responsible
- Intervention with more than one division and one beamline is discuss in the operation meeting

- Beamline equipment corrective maintenance (most of the time)
 - Repair beamline equipment
- Help prepare experiments
 - Assembly experiments setups or designing and producing new setups
- Upgrade beamline equipment
 - Add mechanical components, create new sample environments
- Beamline equipment preventive maintenance (very little)
 - Grease mechanical components, change filters, clean equipment, do specific equipment maintenance, regularly pump detectors, change kapton or mica windows, etc....

We try to move from corrective to preventive but it's difficult in a everyday changing environment like beamline end station* however some improvement has been made (e.g.: kapton windows)

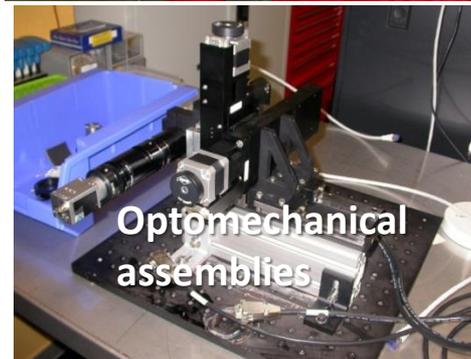
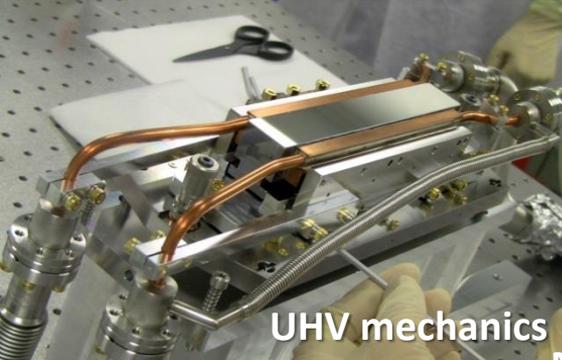
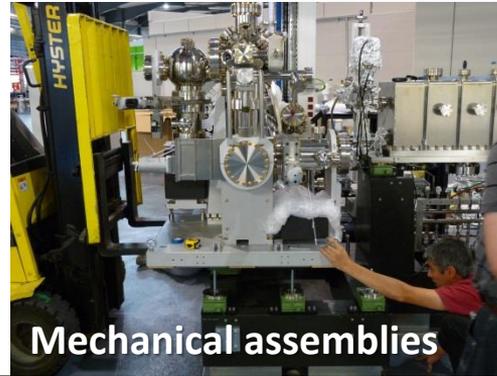
*Beamline end station is where experiments are carried out. An experiment is a procedure carried out to support, refute, or validate a hypothesis so the outcome is uncertain.

Based on a tool that I will talk after here is the distribution of time dedicated to our most common tasks



Time distribution on tasks made with timeDB

Mechanical intervention (~16% time)



Our daily tasks (II)

Vacuum intervention (~16% time)



Our daily tasks (III)

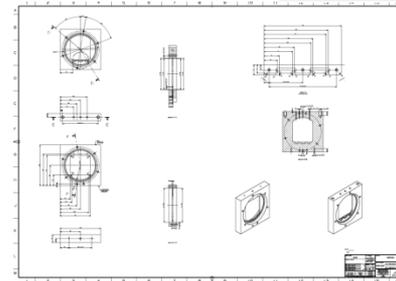
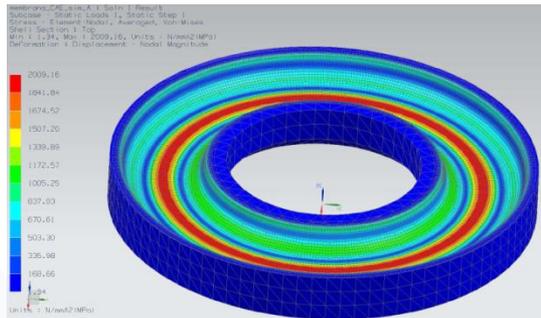
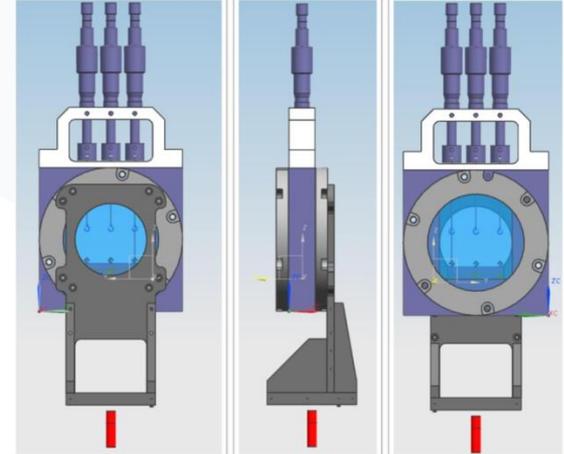
Cryogenics Intervention (~9% time)



Machining (~8% time)

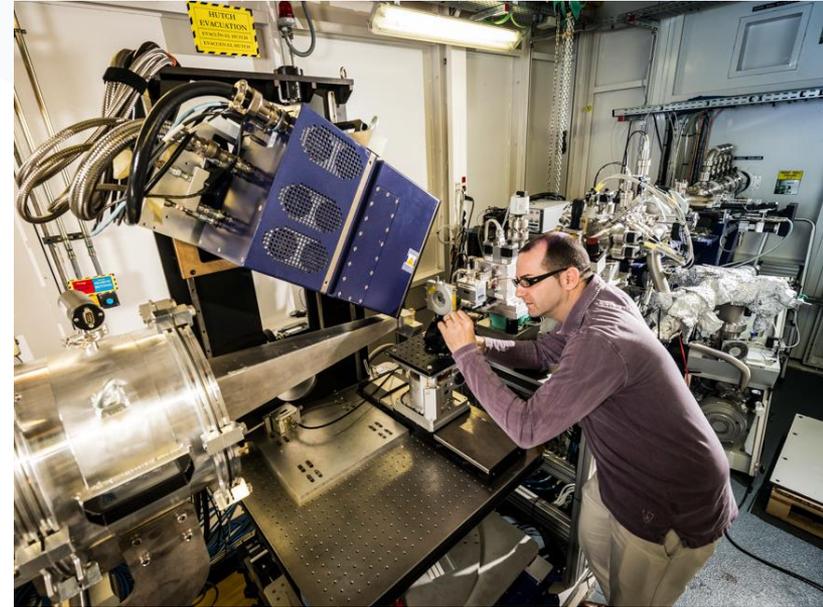
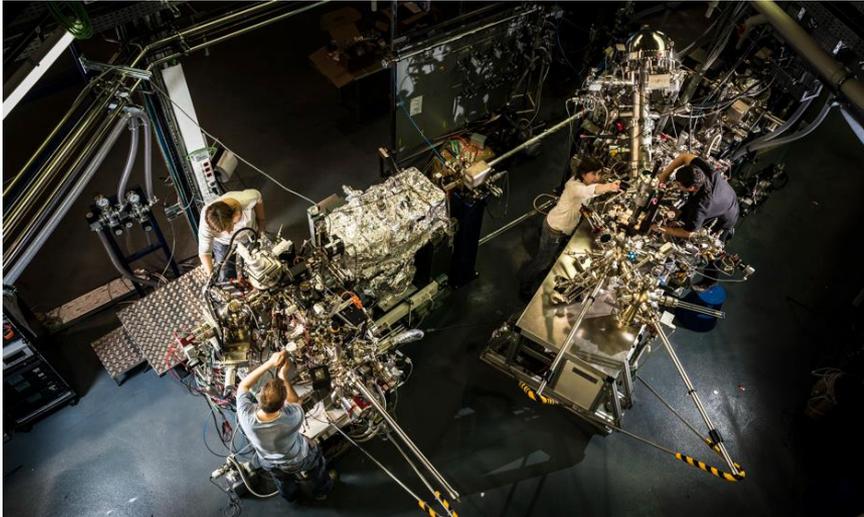


Design (~21% time)



Who we give support to?

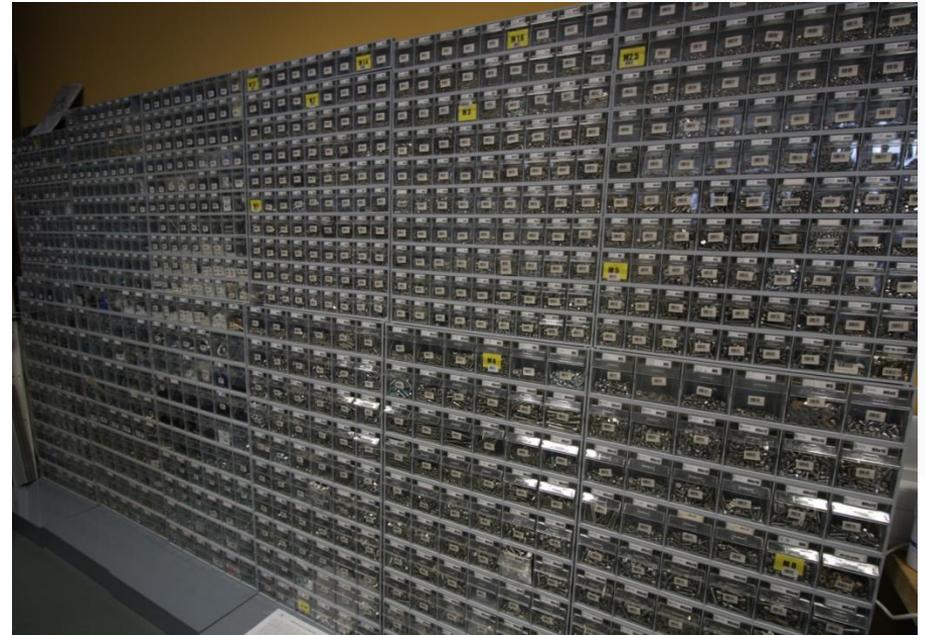
- 8 beamlines + 3 labs (all with different requirements)
 - Soft x-ray (UHV)
 - Hard x-ray
 - Changing sample environment
 - Static sample environment



- Tools and specific spare parts on every beamline
- Proximity workshops equipped with:
 - Small Milling machine
 - Small Lathe
 - Grinding and polishing tools
 - Hand tools
 - Fastener and other consumables
 - Place to storage on going projects
- 3D printer room equipped with:
 - 2 Stereolithographic 3D printers
 - 1 Fused deposition modeling 3D printer
- Room in the general workshop with:
 - A milling machine
 - A Lathe

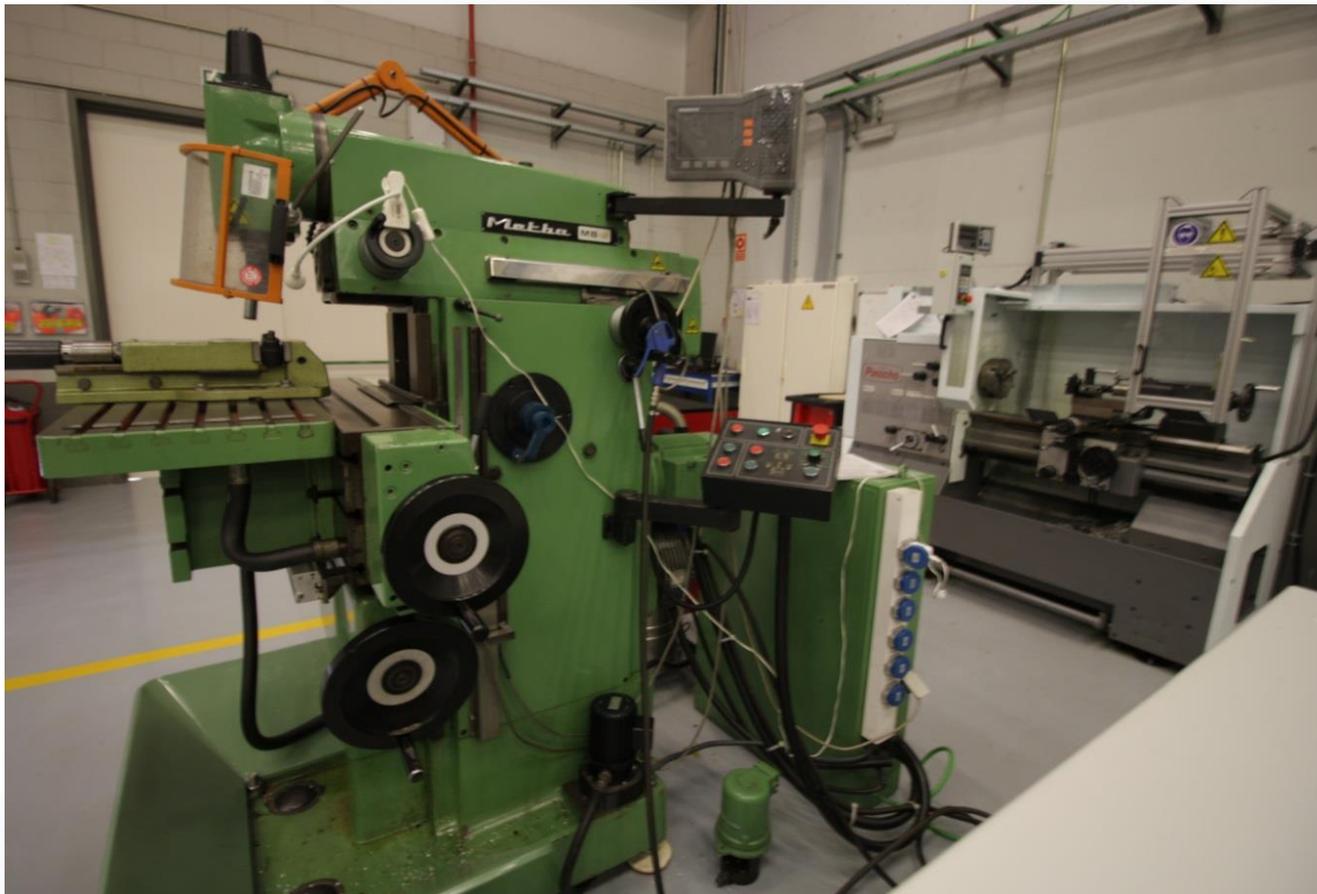


Everything properly label



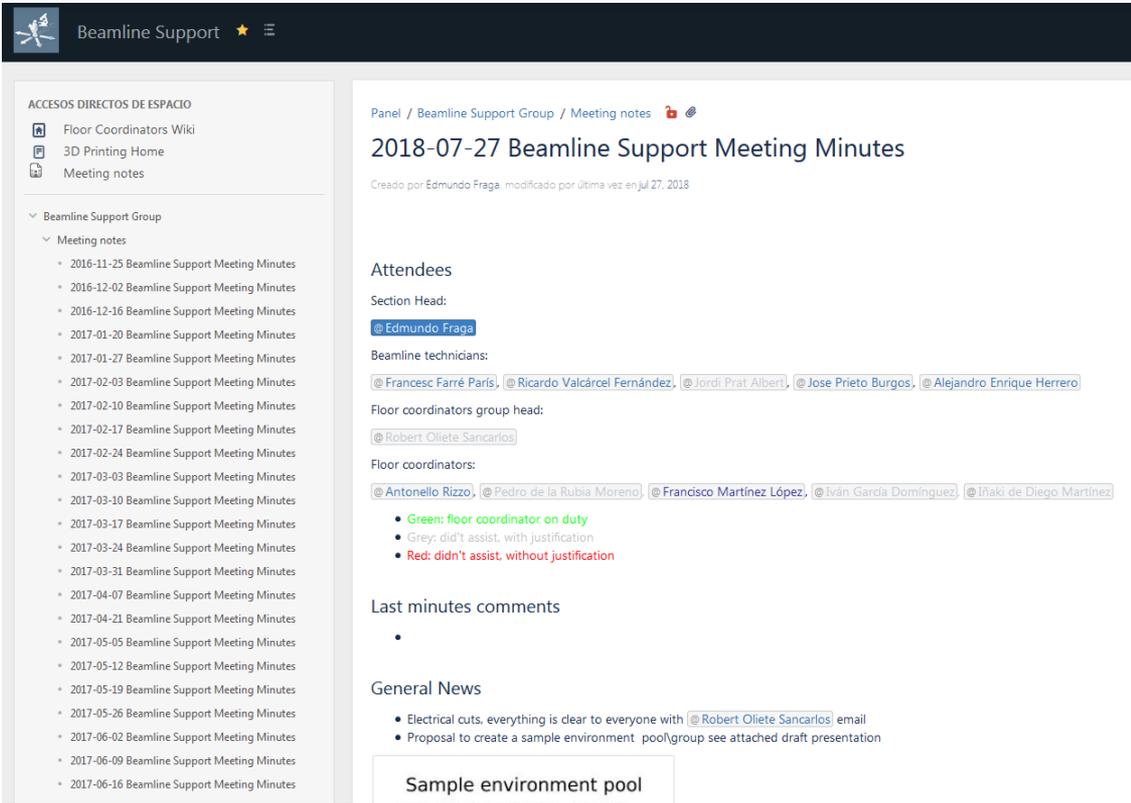
3D printer room





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 - 3D printers orders
 - Floor coordinators on shifts Elog

- Technicians are directly integrated in a beamline or two. They report daily to the beamline responsible that assign their tasks.
- They declare their tasks using the service desk JIRA that will be presented in the talk “ALBA Service Portfolio Management Tools” by Mrs. MARTIN, Malysa
- We hold a weekly meeting to discuss about any incident on the beamlines and to improve the tools managed by the group, group improvement and we exchange technical details about problems faced on the beamlines and possible solutions.
- This weekly meeting is online and tasks can be directly assigned from the text of the minutes, we use a collaboration software CONFLUENCE developed and published by Australian software company Atlassian and implemented at ALBA by the MIS section



The screenshot shows a Confluence page for the 'Beamline Support' group. The page title is '2018-07-27 Beamline Support Meeting Minutes', created by Edmundo Fraga. The page is organized into sections: Attendees, Section Head, Beamline technicians, Floor coordinators group head, Floor coordinators, Last minutes comments, and General News. A 'Sample environment pool' box is visible at the bottom.

Beamline Support ★ ☰

ACCESOS DIRECTOS DE ESPACIO

- Floor Coordinators Wiki
- 3D Printing Home
- Meeting notes

Beamline Support Group

Meeting notes

- 2016-11-25 Beamline Support Meeting Minutes
- 2016-12-02 Beamline Support Meeting Minutes
- 2016-12-16 Beamline Support Meeting Minutes
- 2017-01-20 Beamline Support Meeting Minutes
- 2017-01-27 Beamline Support Meeting Minutes
- 2017-02-03 Beamline Support Meeting Minutes
- 2017-02-10 Beamline Support Meeting Minutes
- 2017-02-17 Beamline Support Meeting Minutes
- 2017-02-24 Beamline Support Meeting Minutes
- 2017-03-03 Beamline Support Meeting Minutes
- 2017-03-10 Beamline Support Meeting Minutes
- 2017-03-17 Beamline Support Meeting Minutes
- 2017-03-24 Beamline Support Meeting Minutes
- 2017-03-31 Beamline Support Meeting Minutes
- 2017-04-07 Beamline Support Meeting Minutes
- 2017-04-21 Beamline Support Meeting Minutes
- 2017-05-05 Beamline Support Meeting Minutes
- 2017-05-12 Beamline Support Meeting Minutes
- 2017-05-19 Beamline Support Meeting Minutes
- 2017-05-26 Beamline Support Meeting Minutes
- 2017-06-02 Beamline Support Meeting Minutes
- 2017-06-09 Beamline Support Meeting Minutes
- 2017-06-16 Beamline Support Meeting Minutes

Panel / Beamline Support Group / Meeting notes

2018-07-27 Beamline Support Meeting Minutes

Creado por Edmundo Fraga, modificado por última vez en Jul 27, 2018

Attendees

Section Head:

@Edmundo Fraga

Beamline technicians:

@Francesc Farré París, @Ricardo Valcárcel Fernández, @Jordi Prat Albert, @Jose Prieto Burgos, @Alejandro Enrique Herrero

Floor coordinators group head:

@Robert Oliete Sancarlos

Floor coordinators:

@Antonello Rizzo, @Pedro de la Rubia Moreno, @Francisco Martínez López, @Iván García Domínguez, @Iñaki de Diego Martínez

- Green: floor coordinator on duty
- Grey: didn't assist, with justification
- Red: didn't assist, without justification

Last minutes comments

-

General News

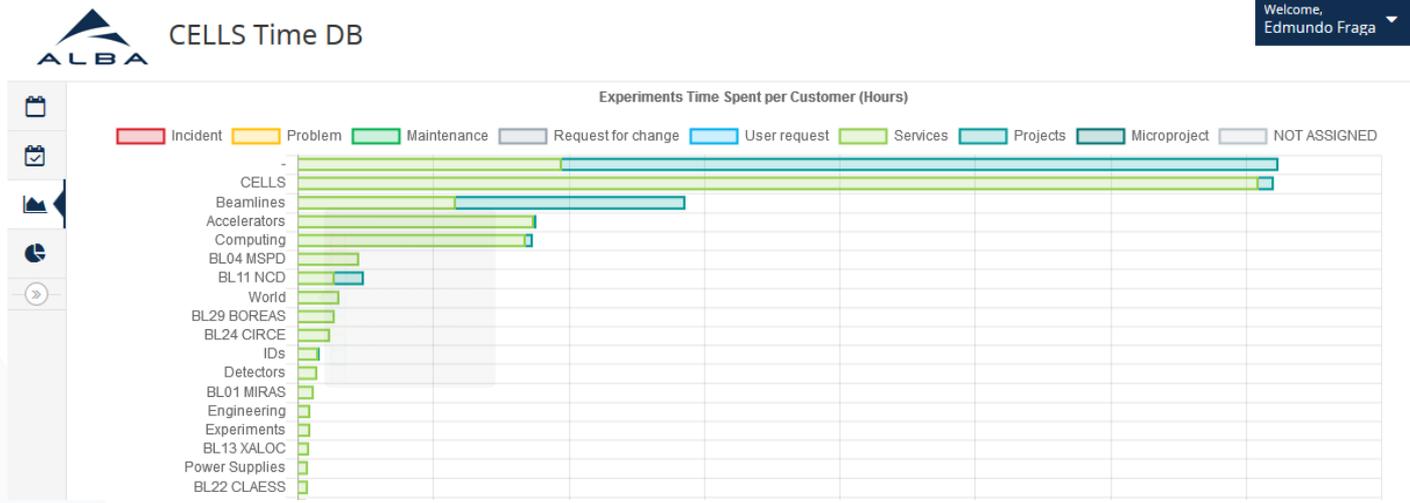
- Electrical cuts, everything is clear to everyone with @Robert Oliete Sancarlos email
- Proposal to create a sample environment pool/group see attached draft presentation

Sample environment pool

Time management



- We use the Time DB witch is a web service developed at ALBA by the MIS group in order to:
 - To insert time on the service desk
 - And allow us to get summary reports of JIRA issues and time worked on a given period
 - By activity
 - By costumer
 - We can get many statistics to see:
 - How efficient we are
 - How we share our time between costumers (very important for technicians shared)



Loan pool and consumables database



- We use a web service developed at ALBA by the MIS section
- Most powerful tool for us in terms of improvement
- We have a big database (over 1.000 entries) with all the material we have in stock
- It has been an amount of work to have everything in the database and labeled (but worthy)

ALBA CELLS Inventory Pools

Welcome, efraga

Bookings Home

Manage Pools

Manage Catalog

Manage Stocks

Help

Book an Item From an Inventory Pool

Proximity Workshop

Book Items My Bookings

From To

Category Metrology

Returnable

Catalog Item Select an item from the Catalo...

Information

Clear Search

	Catalog Item	Information	Location	Category	Quantity	Returnable	Delivered by a pool member	Next available	
	Thickness Gauge 7301	-	Proximity workshop/Workbench-2	Metrology	1	✘	✘	N/A	
	Height Gage H4-20	-	Proximity workshop/Workbench-2	Metrology	1	✘	✘	N/A	

Name

Description

URL

Manufacturer

Product Reference

Barcode

Is it returnable?

Category

Supplier

Minimum Stock

Critical Stock
Returnable stock: 1
Non-returnable stock: 0

Quantity Installed

Information

Attachments  0060.jpg.jpg
 Proxxon_PF400.pdf.pdf
 PW-OIS-002 fda.pdf

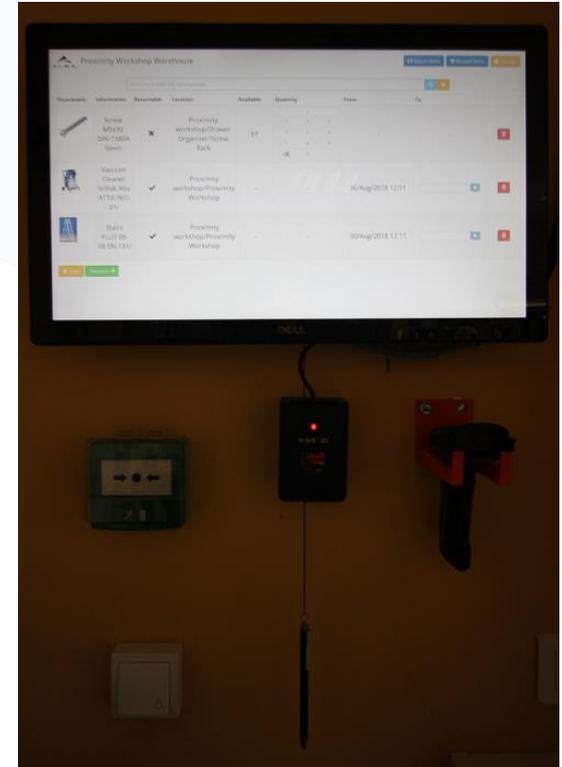


Main features:

- Perform search in order to:
 - Have physical location (for common tools or tools used years ago)
 - Characteristics
 - Order details
 - Safety sheets
- It can be checked if something is on loan, where it is and when it will come back
- It sends automatically messages with status reports (what consumables are missing or about to be finished)
- Users can book an item from the pool
- Return items when applicable

Very simple user interface

Click bar code and scan your card



3D printers orders



- A printing service is given to all ALBA staff
- We use the service desk to organize the queue base on AGILE (see talk “ALBA Service Portfolio Management Tools” by Mrs. MARTIN, Malysa)

ALBA Service Desk Requests

ALBA Service Desk / 3D Printing
3D Print

Raise this request on behalf of
Edmundo Fraga

Summary

Description

Attachment (optional)
Drag and drop files, paste screenshots, or browse

Customer Unit
Unassigned

Due Date (optional)

Priority (optional)
P3-COULD

Quantity

Please add a screenshot of the pieces to be printed. It will help us track the job more easily

Kanban board

QUICK FILTERS: BCN3D Sigma Form2 Only My Issues Recently Updated (1d) Recently Updated (1w) Recently Updated (1m)

To be Revised	To Do	On Queue	Printing	Curing	Waiting user verification	Done	Release...
BCN3D 11 issues							
			<p>PR...-223 Print Maqueta_LEGO_cnr 23:23 08/Oct/17 -1yr</p>			<p>PR...-595 Print LAB-BL-WTET-B012 10:14 None -1w 5d</p>	<p>PR...-639 Print LAB-BL-3DPR-S028 18:36 None -1w 5d</p>
			<p>PR...-335 Print Maqueta_LEGO_cnr 22:10 13/Oct/17 -1yr</p>			<p>PR...-640 Print LAB-BL-3DPR-S029 21:32 None 1w</p>	<p>PR...-646 S_soporte enchufe regleta 0:18 None 4d 25h</p>
						<p>PR...-662 Print Handle 12:56 None 21h 8m</p>	
Form2 17 issues							
			<p>PR...-001 Marc Garcia 30h - 30 min None 1w 1d</p>	<p>PR...-004 BL11-ME-CLLC-ADD1 19:51 20/Sep/18 1w 4d</p>		<p>PR...-055 Print Flat Shaft 11:21 None 3d 25h</p>	<p>PR...-067 LAB-CHEM-NMRtubes 22:50 None 1w 6d</p>
					<p>PR...-052 Print Chisel 03:52 None 3d 27h</p>	<p>PR...-048 20180330-TIRANTE_INF 14:41 None 1w 3d</p>	

Floor coordinators on shifts Elog



Floor_Coordinators 3D Printer

Floor Coordinator Actions, Page 1 of 160

Not logged in



Find | Login | Help

Full | Summary | Threaded

-- All entries -- -- Shift date -- -- Type -- -- Type Intervention --

6384 Entries

Goto page 1, 2, 3 ... 158, 159, 160 Next

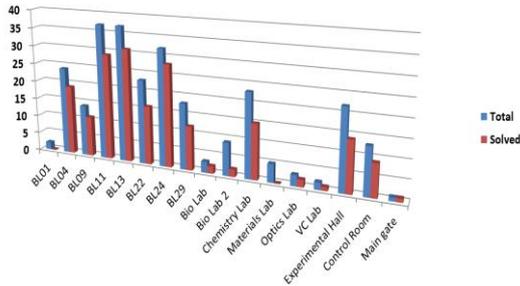
Id	Run	Shift	Shift date	Shift type	Team member	Type	Location	Type Intervention	With Incidence	Solved
6397	6	50	25 September (Tuesday) 2018, 14:45	T	Antonello Rizzo	Start Shift			No	
6396	6	48	23 September (Sunday) 2018, 06:48	N	Robert Oliete	End shift			No	
6395	6	48	23 September (Sunday) 2018, 06:23	N	Robert Oliete	Minor intervention	BL11	Vacuum	No	Yes
6394	6	48	23 September (Sunday) 2018, 04:30	N	Robert Oliete	Incidence	BL22	Controls		Yes
6393	6	48	23 September (Sunday) 2018, 04:00	N	Robert Oliete	3h Patrol			No	
6392	6	48	23 September (Sunday) 2018, 00:10	N	Robert Oliete	23h patrol			No	
6391	4	48	22 September (Saturday) 2018, 22:48	N	Robert Oliete	Start Shift			No	
6390	4	47	22 September (Saturday) 2018, 22:47	T	Antonello Rizzo	End shift			No	
6389	4	47	22 September (Saturday) 2018, 20:03	T	Antonello Rizzo	19h patrol			No	
6388	4	47	22 September (Saturday) 2018, 17:23	T	Antonello Rizzo	Notification	BL11	Vacuum	No	Yes
6387	4	47	22 September (Saturday) 2018, 17:06	T	Antonello Rizzo	Notification	BL11	Vacuum	No	Yes
6386	4	47	22 September (Saturday) 2018, 16:15	T	Antonello Rizzo	15h patrol			No	
6385	4	47	22 September (Saturday) 2018, 14:55	T	Antonello Rizzo	Start Shift			No	

ELOG witch is a Web application written by Stefan Ritt developed at the Paul Scherrer Institute.

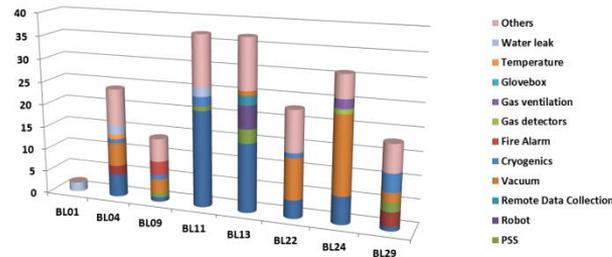
Characteristics:

- Automatic email notifications to people involved
- Easy to make arbitrary attributes adapt to the interventions or repeated tasks
- Chronological order
- Public to all staff
- Easy access to the data to extract statistics

Incidences/Site



Incidences/Beamline



Thank you for your attention

Questions and suggestions are welcome