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?
  - Witch 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

Who are we?

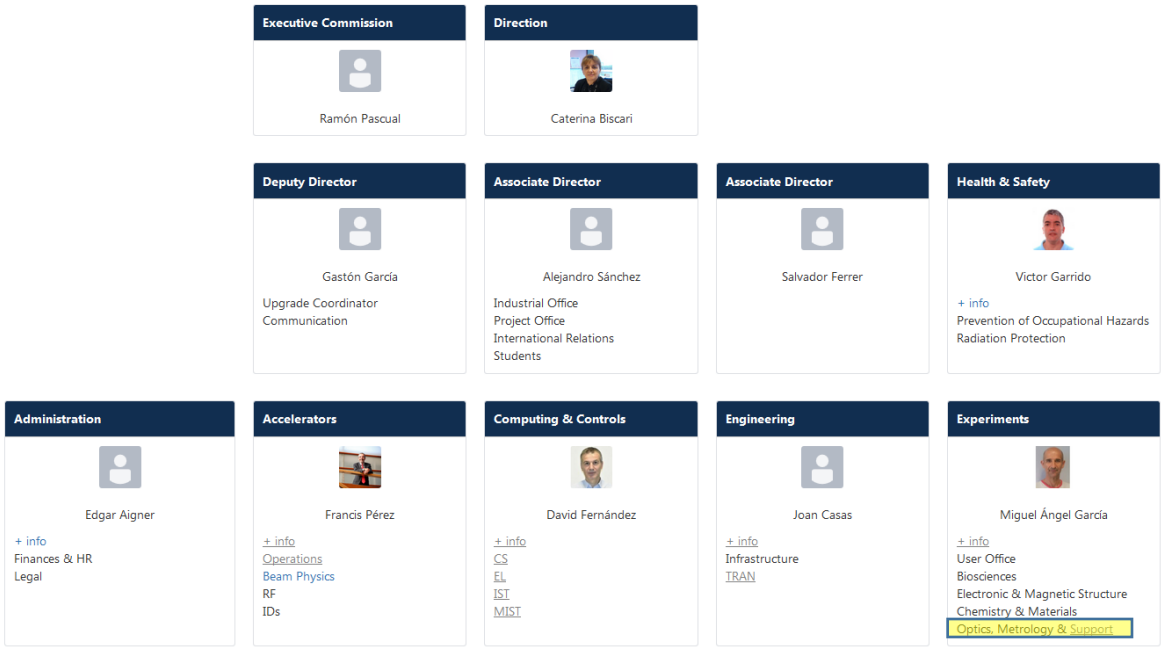
- Two groups in the section:
  - Beamline technicians (5 members + 2 students)
  - Floor coordinators (6 members)

- 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

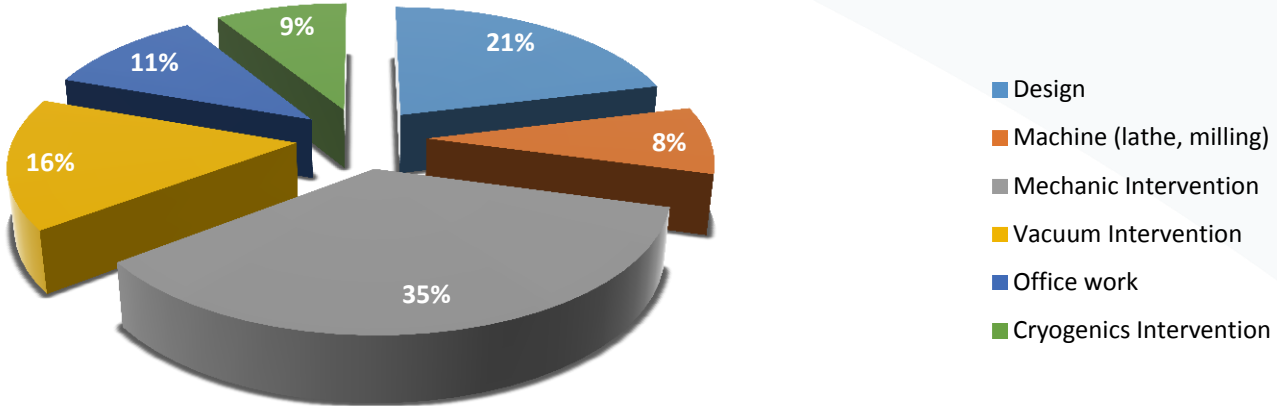
Our mission

- 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.

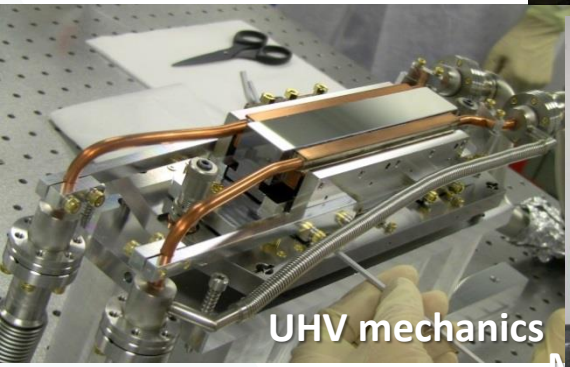
Based on a tool that I will talk after here is the distribution of time dedicated to our most common tasks

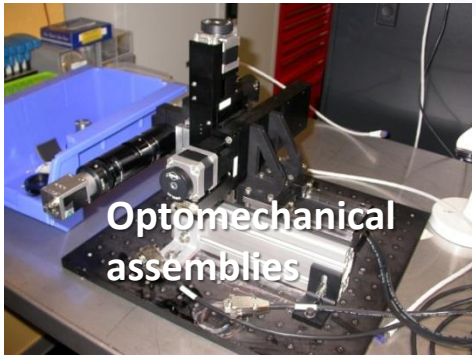


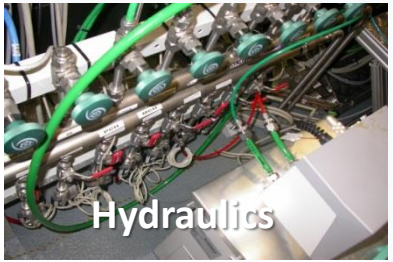
Time distribution on tasks made with timeDB

Our tasks

Mechanical intervention (~16% time)

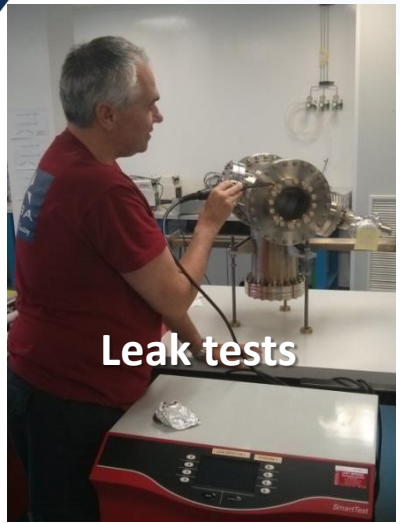


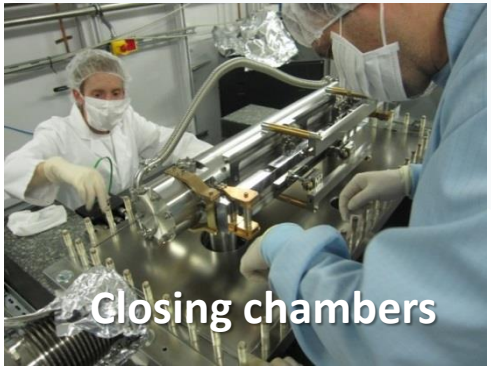


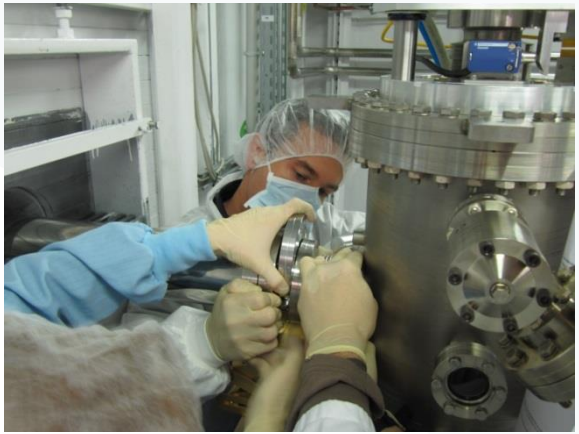


Our daily tasks (II)

Vacuum intervention (~16% time)

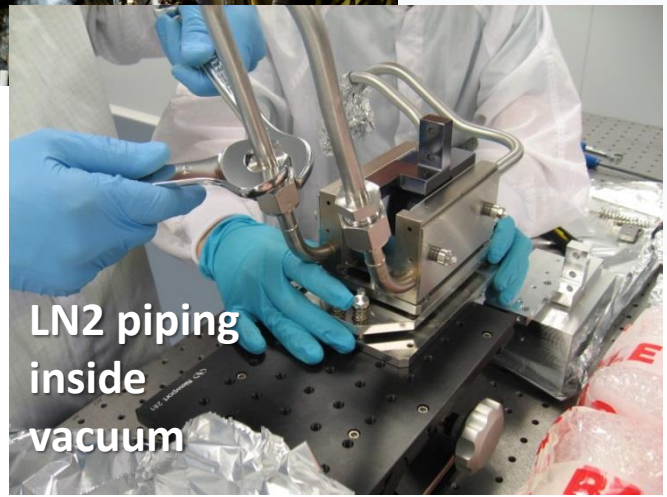






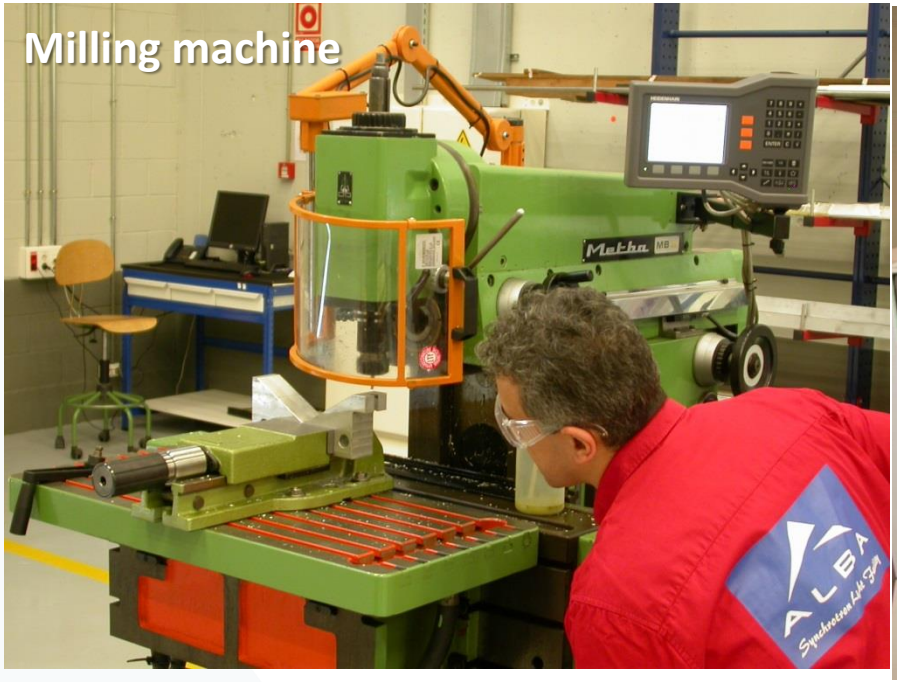
Our daily tasks (III)

Cryogenics Intervention (~9% time)



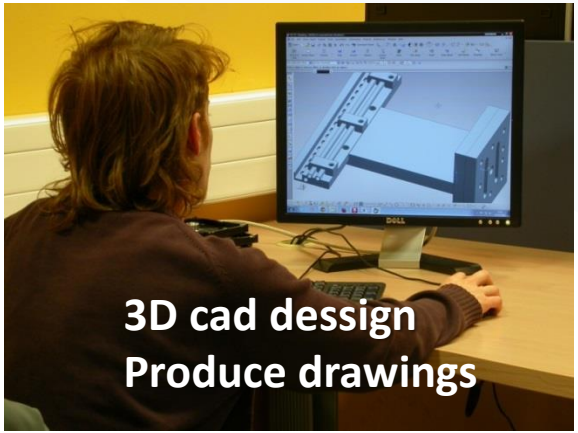
Our daily tasks (IV)

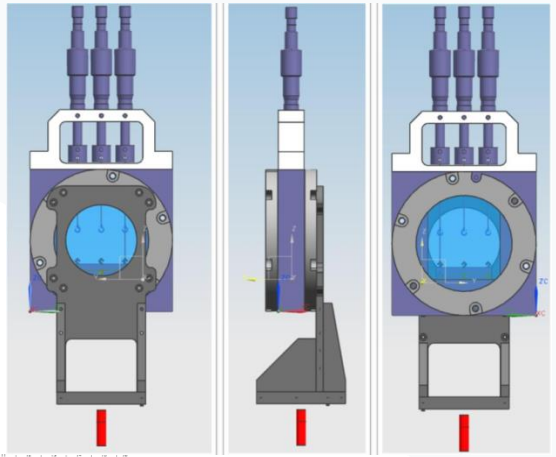
Machining (~8% time)

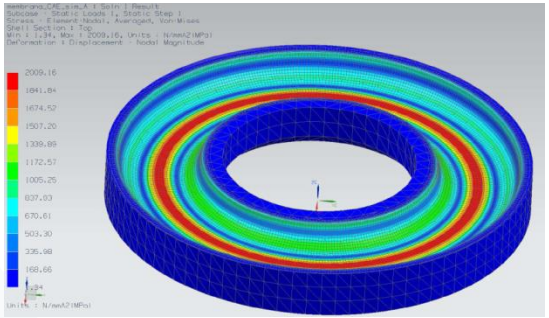


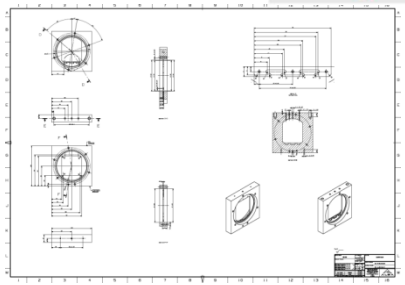
Our daily tasks (V)

Design (~21% time)



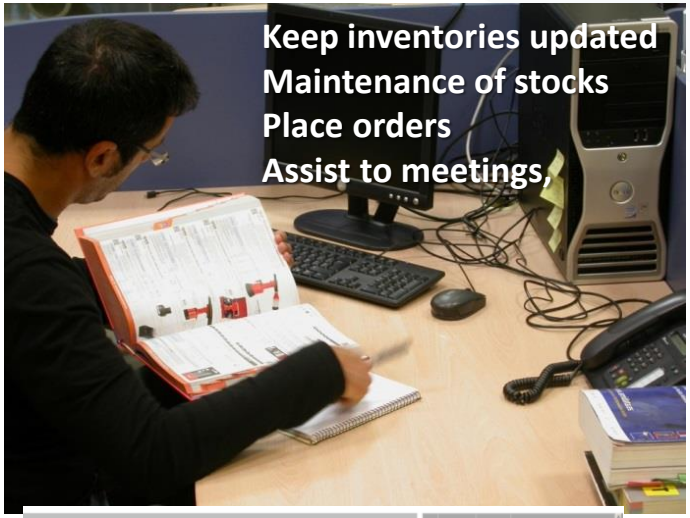




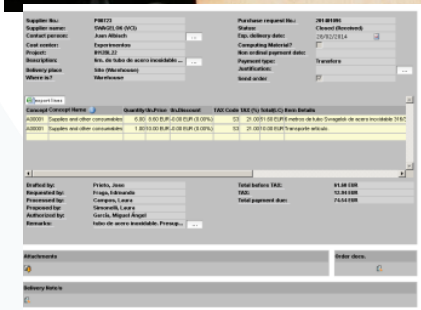


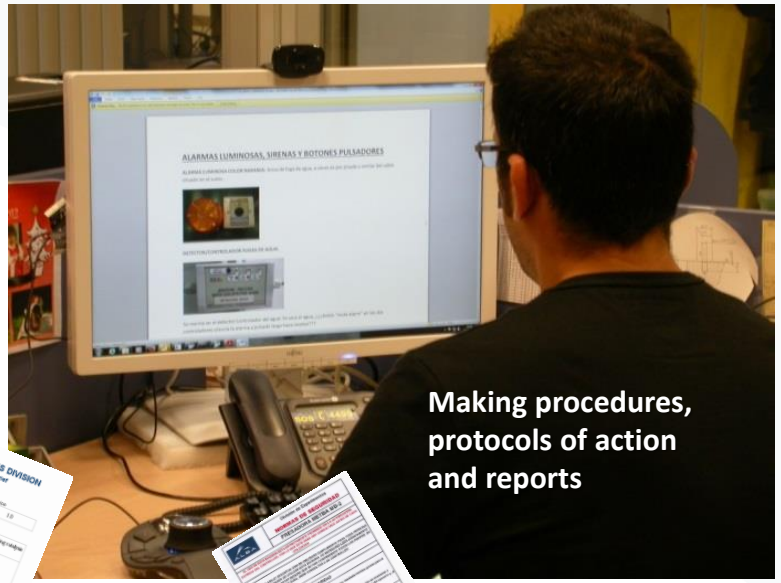
Our daily tasks (VI)

Office work (~11% time)

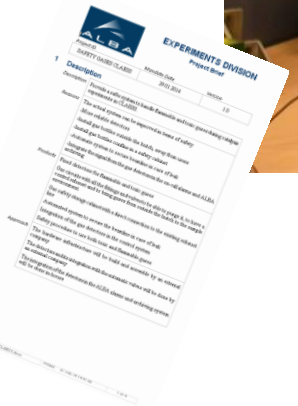


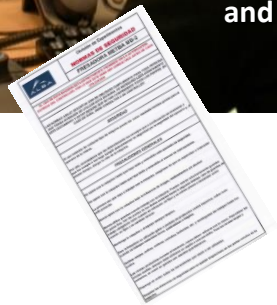
Keep inventories updated
Maintenance of stocks
Place orders
Assist to meetings,





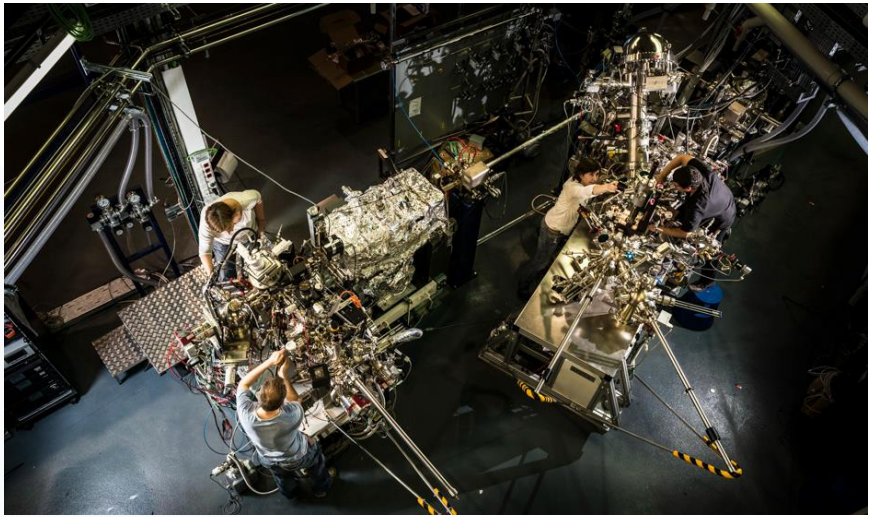
Making procedures, protocols of action and reports

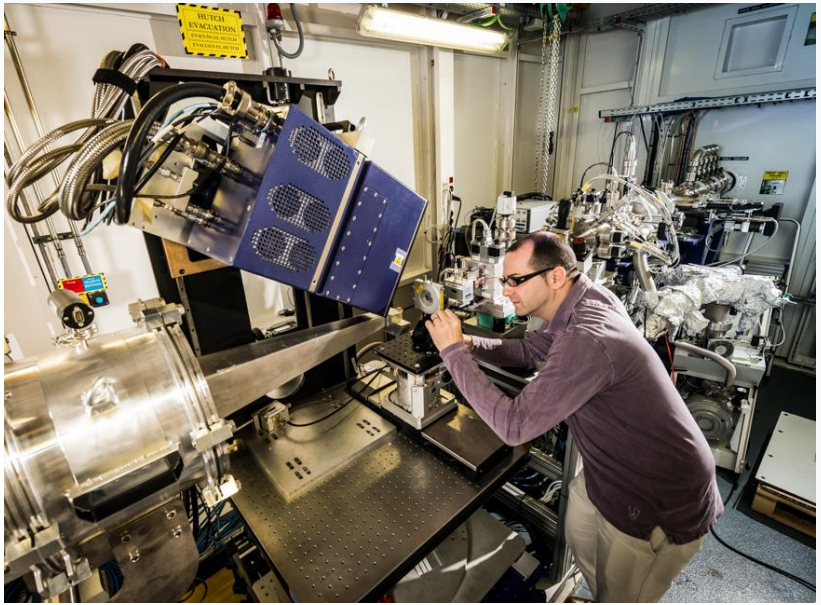




Who we give support to?

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



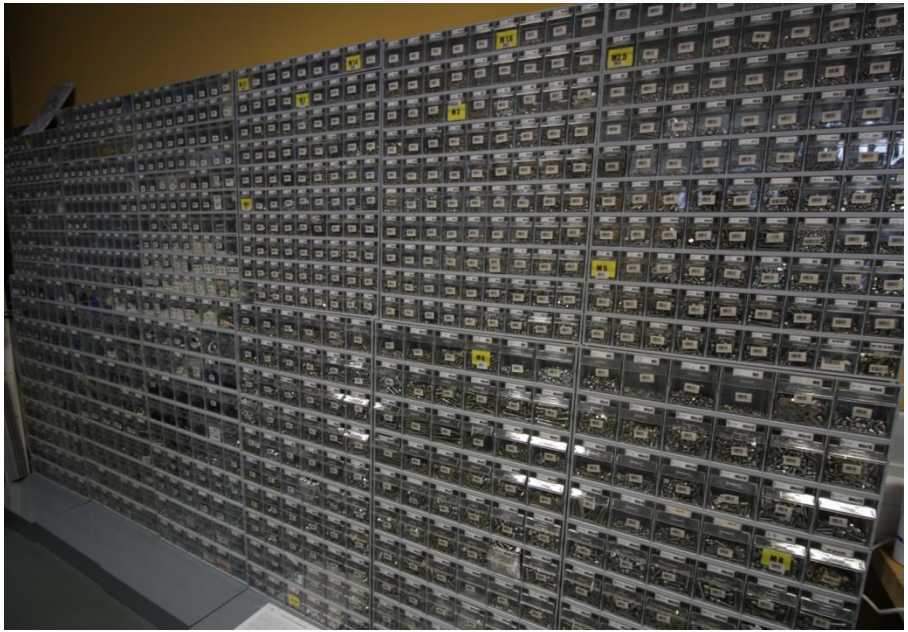


Which are our tools?

- 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

Proximity workshop

Everything properly label



3D printer room

General Workshop

- INTRODUCTION
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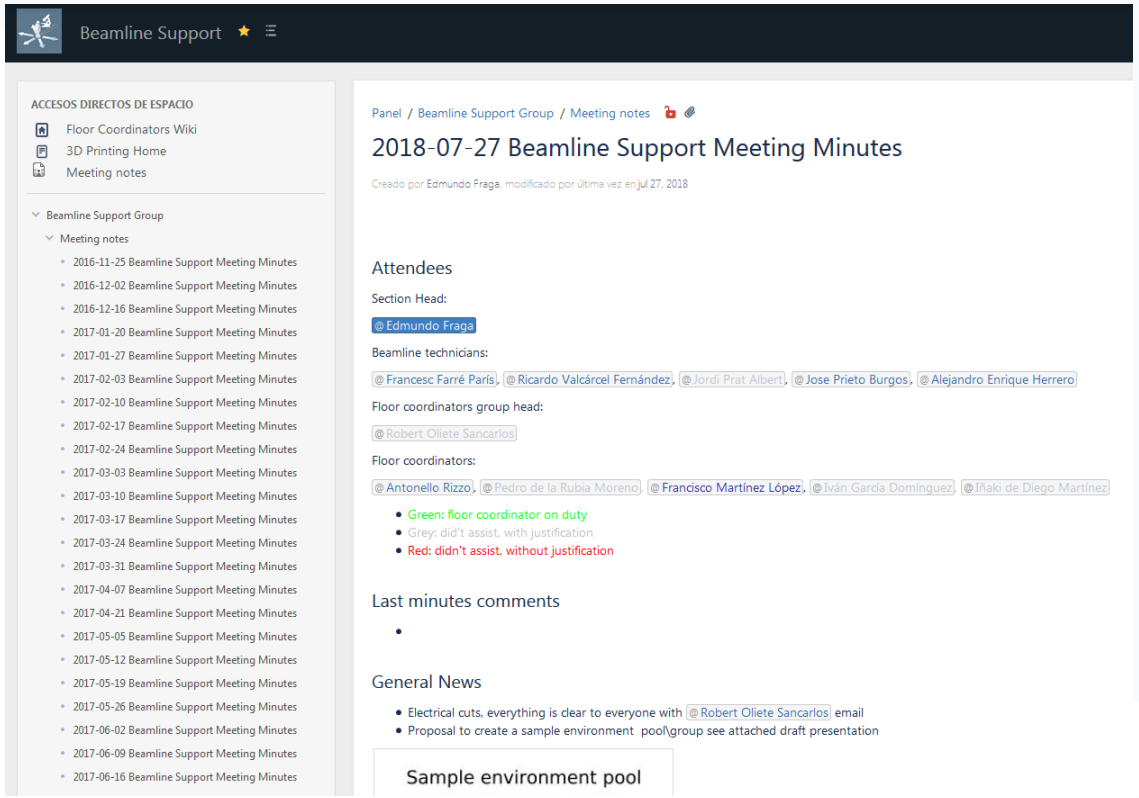
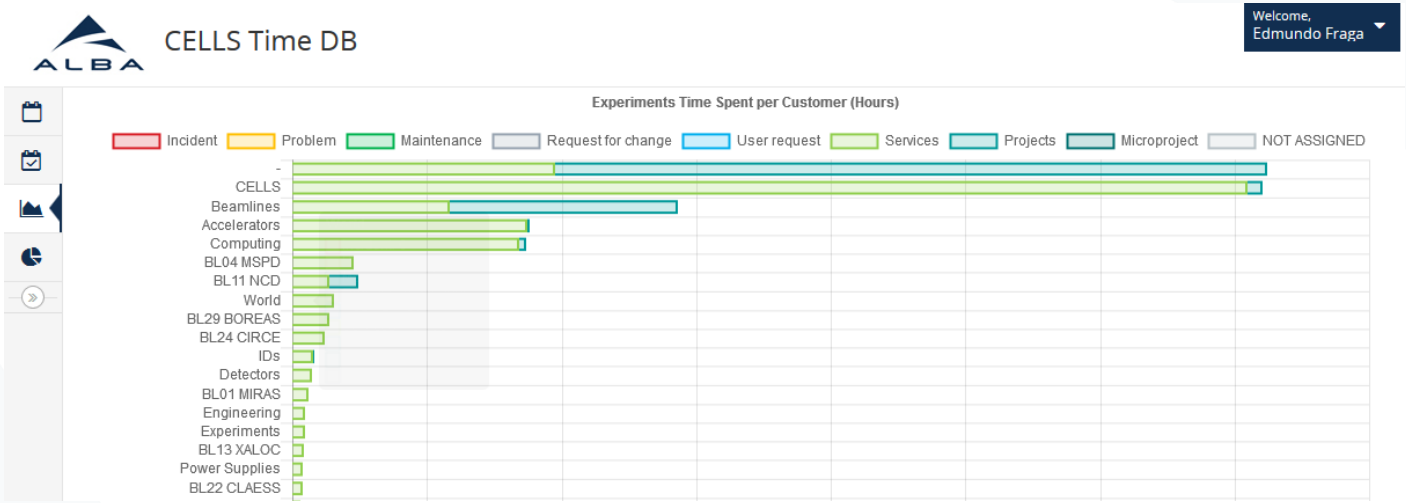
Manpower distribution

- 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



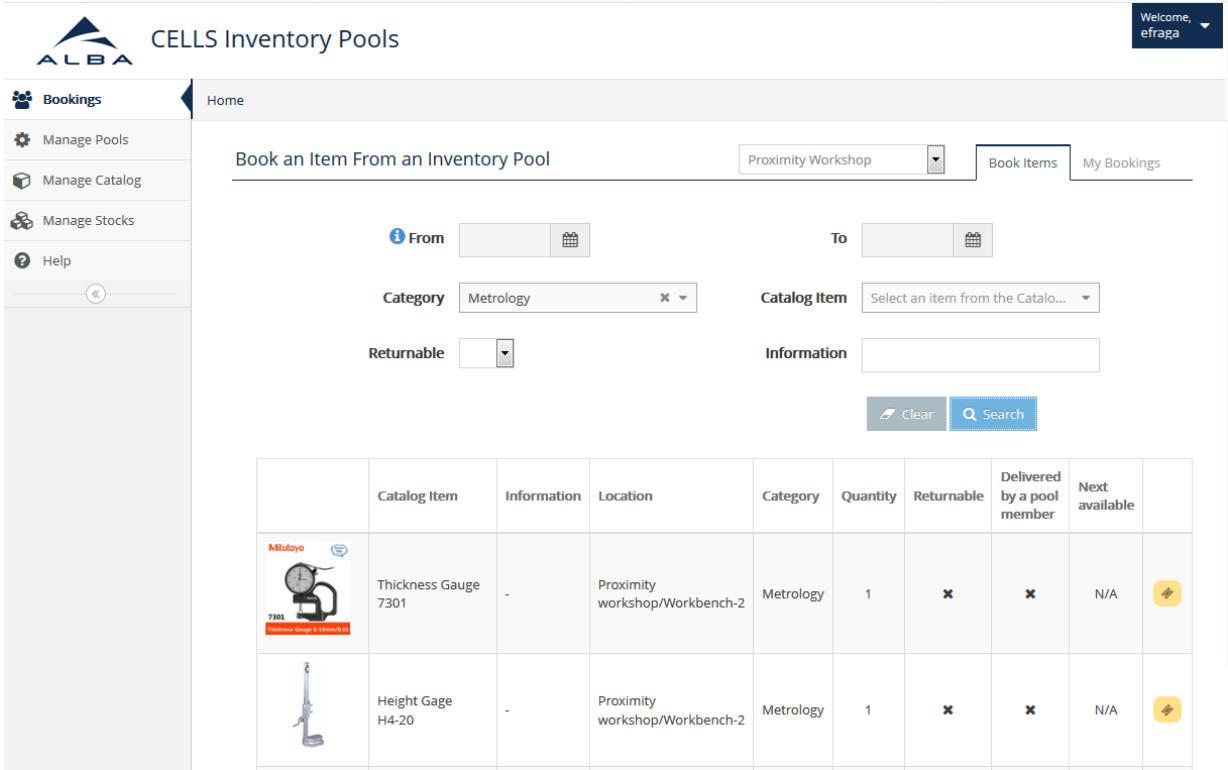
Time management

- 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)

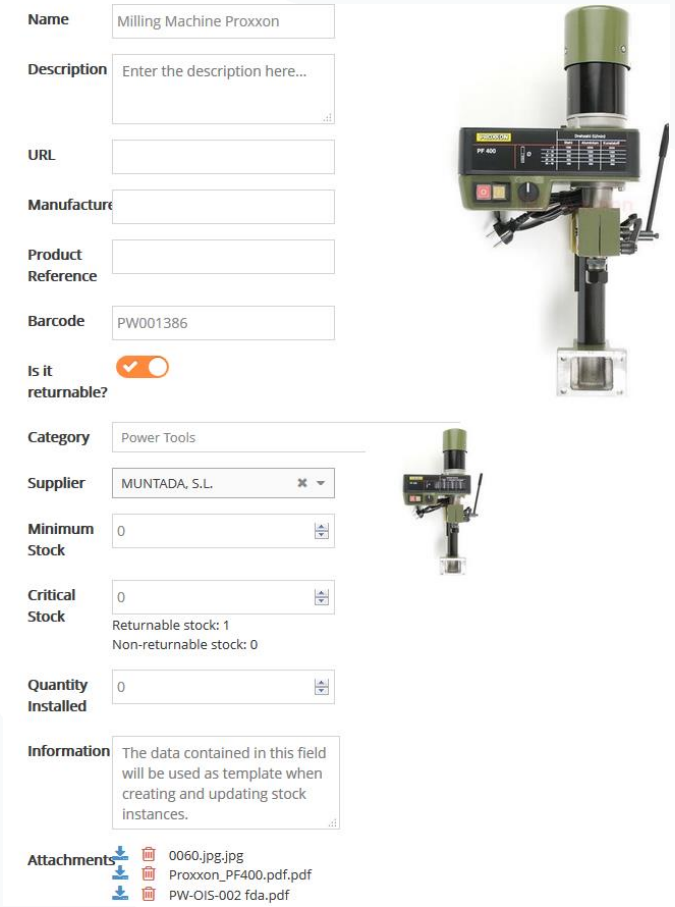


Loan pool and consumables database

- 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)



Loan pool and consumables



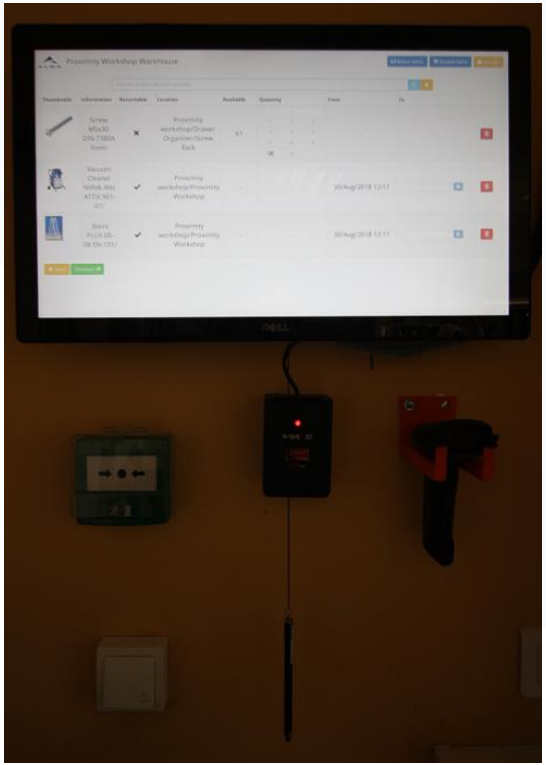
Main features:

- 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

Loan pool and consumables

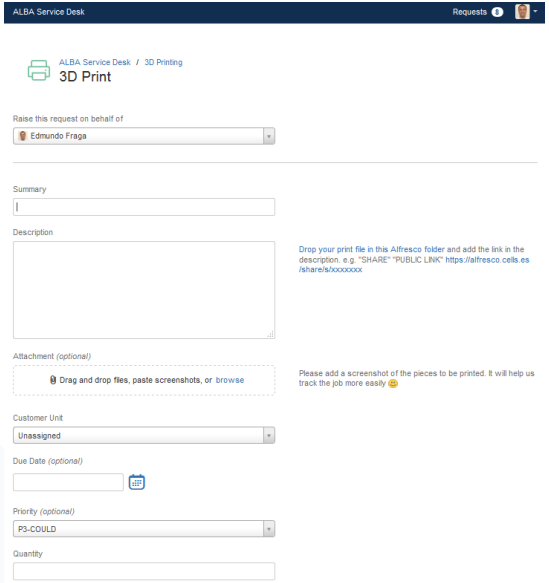
Very simple user interface

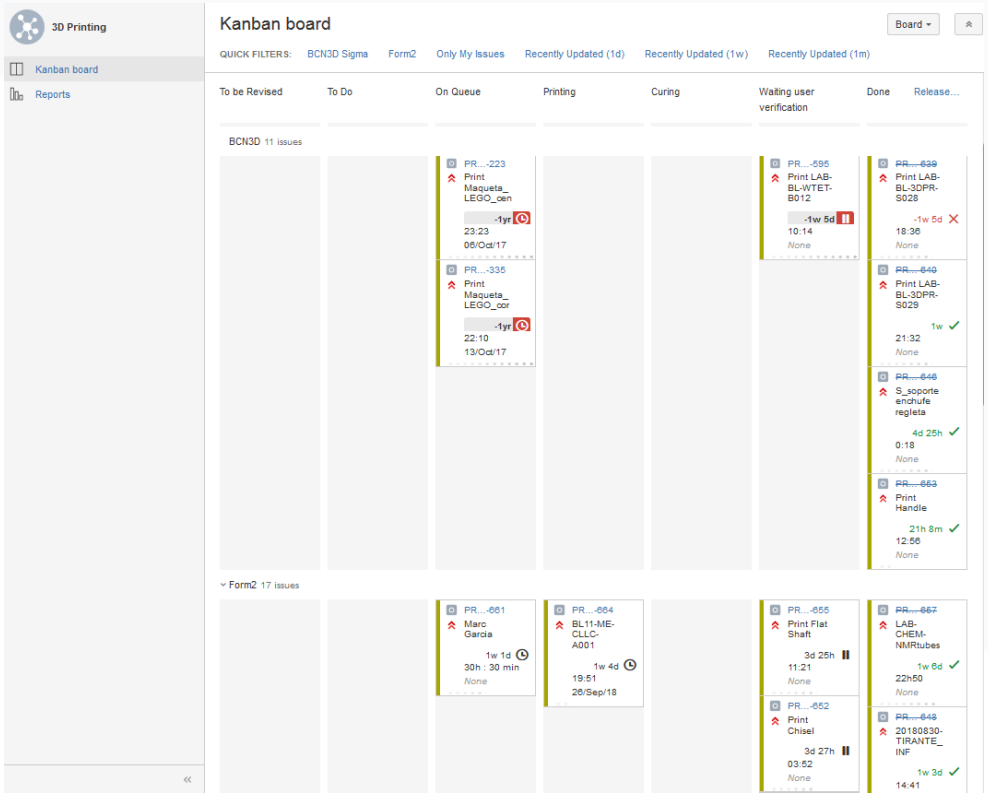
Click bar code and scan your card



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)





Floor coordinators on shifts Elog

Floor_Coordinators | 3D Printer

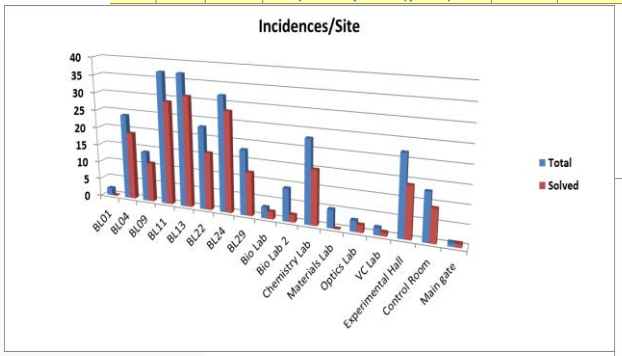
Floor Coordinator Actions, Page 1 of 160 — Not logged in

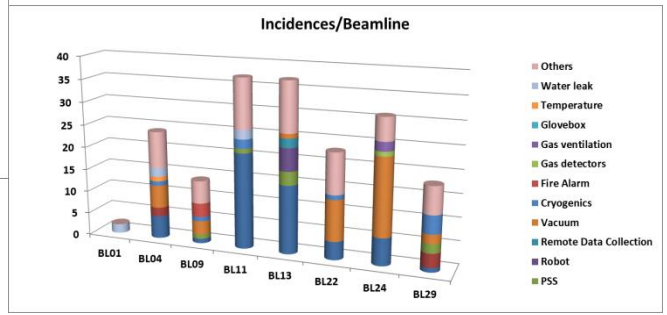
Find | Login | Help

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

Thank you for your attention

Questions and suggestions are welcome