



Introduction

ALBA is a 3rd generation Synchrotron Light Source located near Barcelona (Spain).

To produce the synchrotron light, three accelerators are needed:

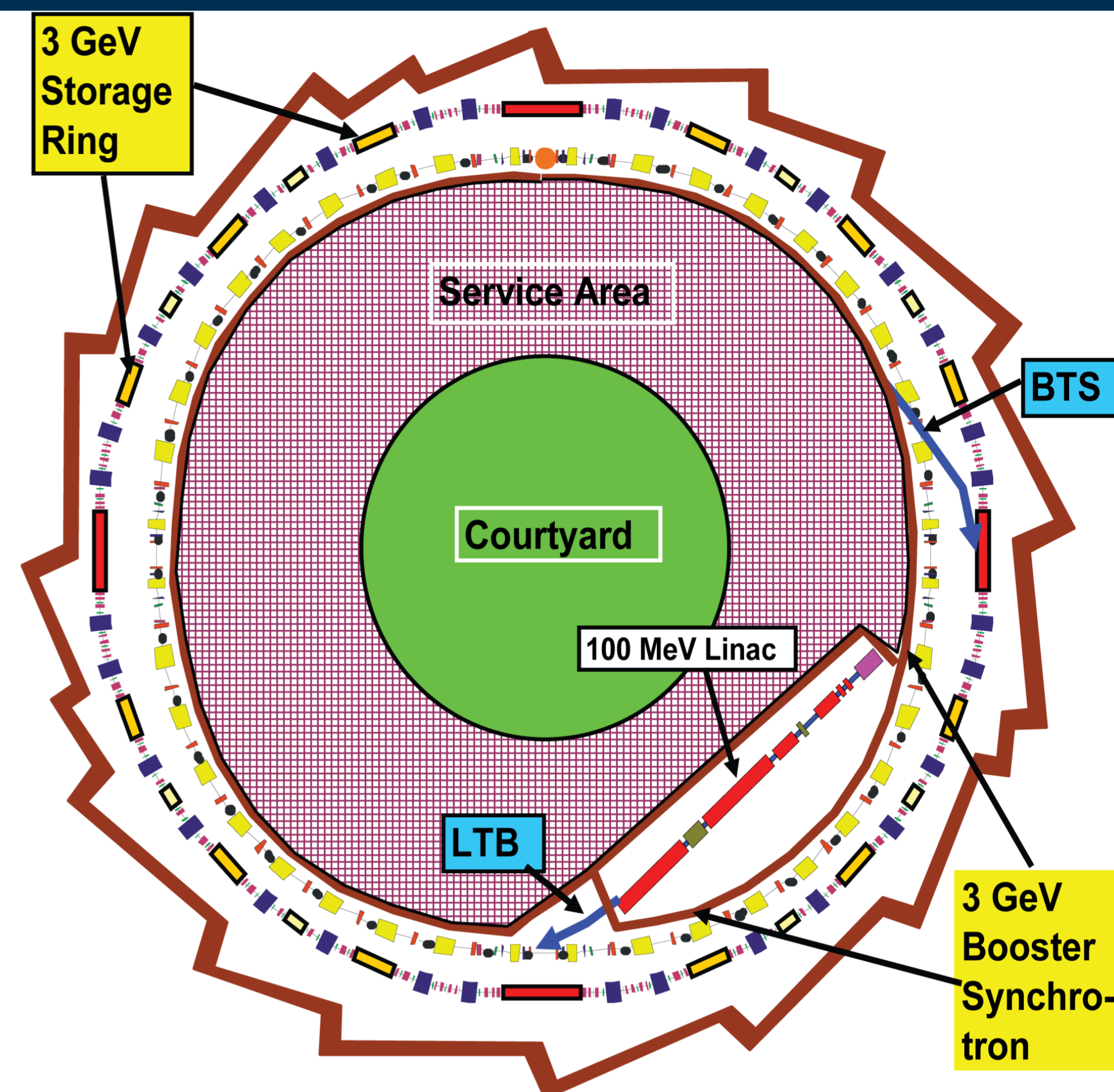
1. 100 MeV LINAC
2. Full energy Booster
3. 3.0 GeV Storage Ring

The nominal current of the Storage is 250 mA. The present working current is 130 mA.

Construction started in 2004 and since May 2012 ALBA is open to users.

At this moment 8 BLs are open for users.

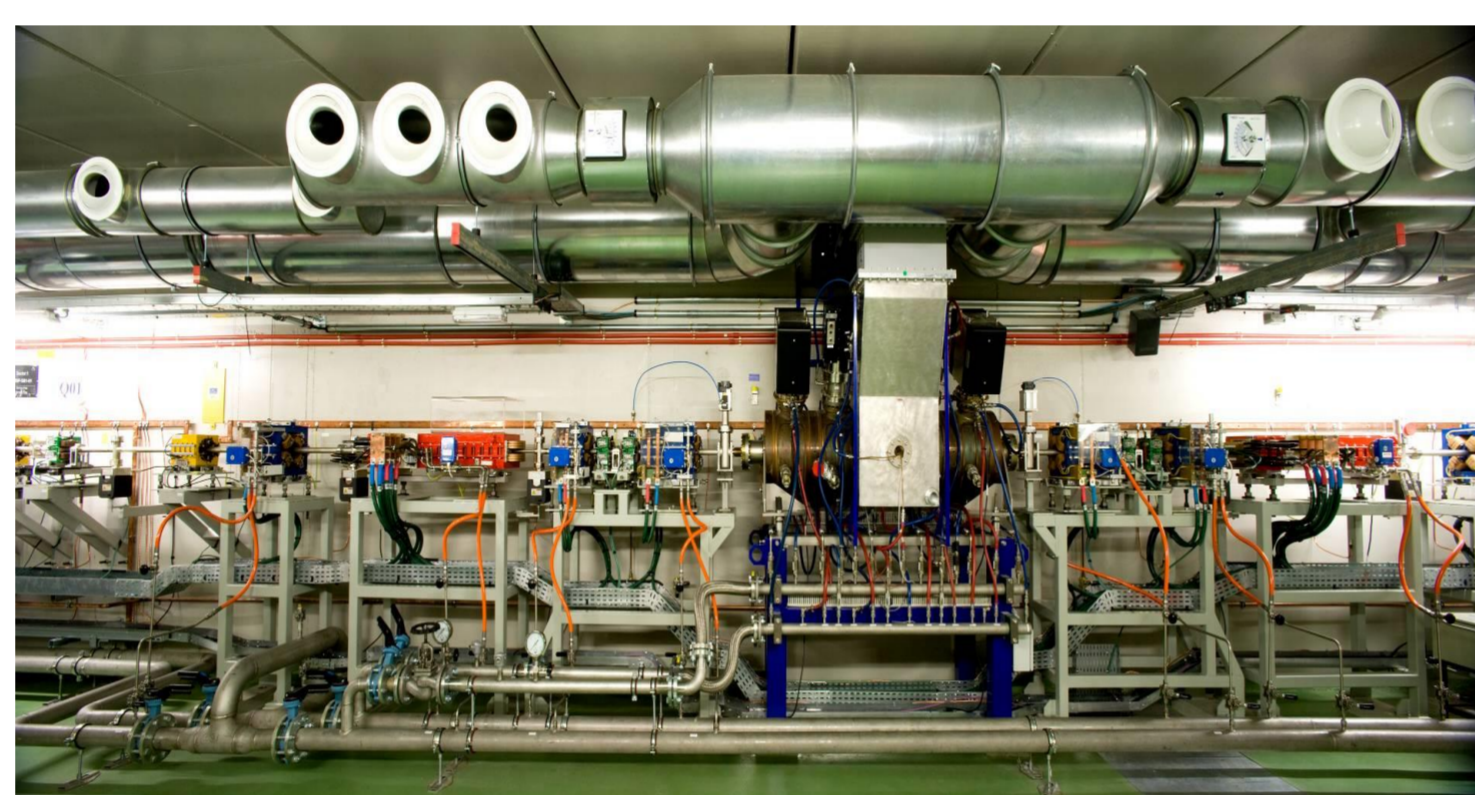
	Linac	Booster	Storage ring
Energy [GeV]	0.1	0.1-3	3
Circumference (m)		249	269
Current [mA]	1 nC	0.1 - 0.8	130
Lifetime [h]	--	--	23
Emittance (nm.rad)	--	50 - 9	4.58
Betatron tune Qx	--	12.26	18.155
Betatron tune Qy	--	7.38	8.362
Dipole field (T)	--	0.873	1.42



The accelerators chain



Electrons are extracted from a thermoionic cathode and accelerated up to 100 MeV.



The Booster increases the energy of the electrons from 100 MeV to 3 GeV.

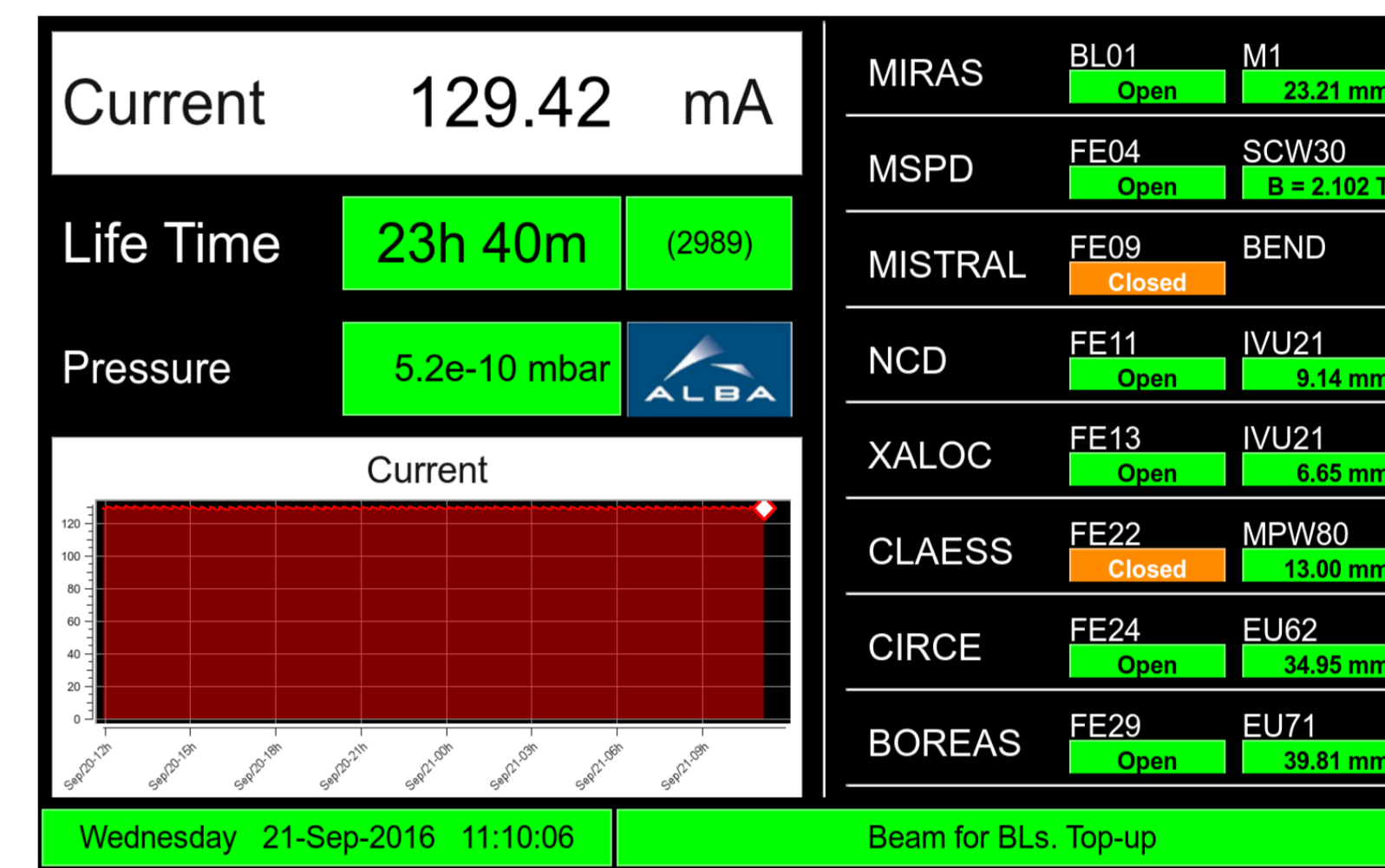


The Storage Ring keeps the electrons at 3 GeV with the help of RF.

Present machine status

Injecting in Top-up mode, every 20min up to 130mA

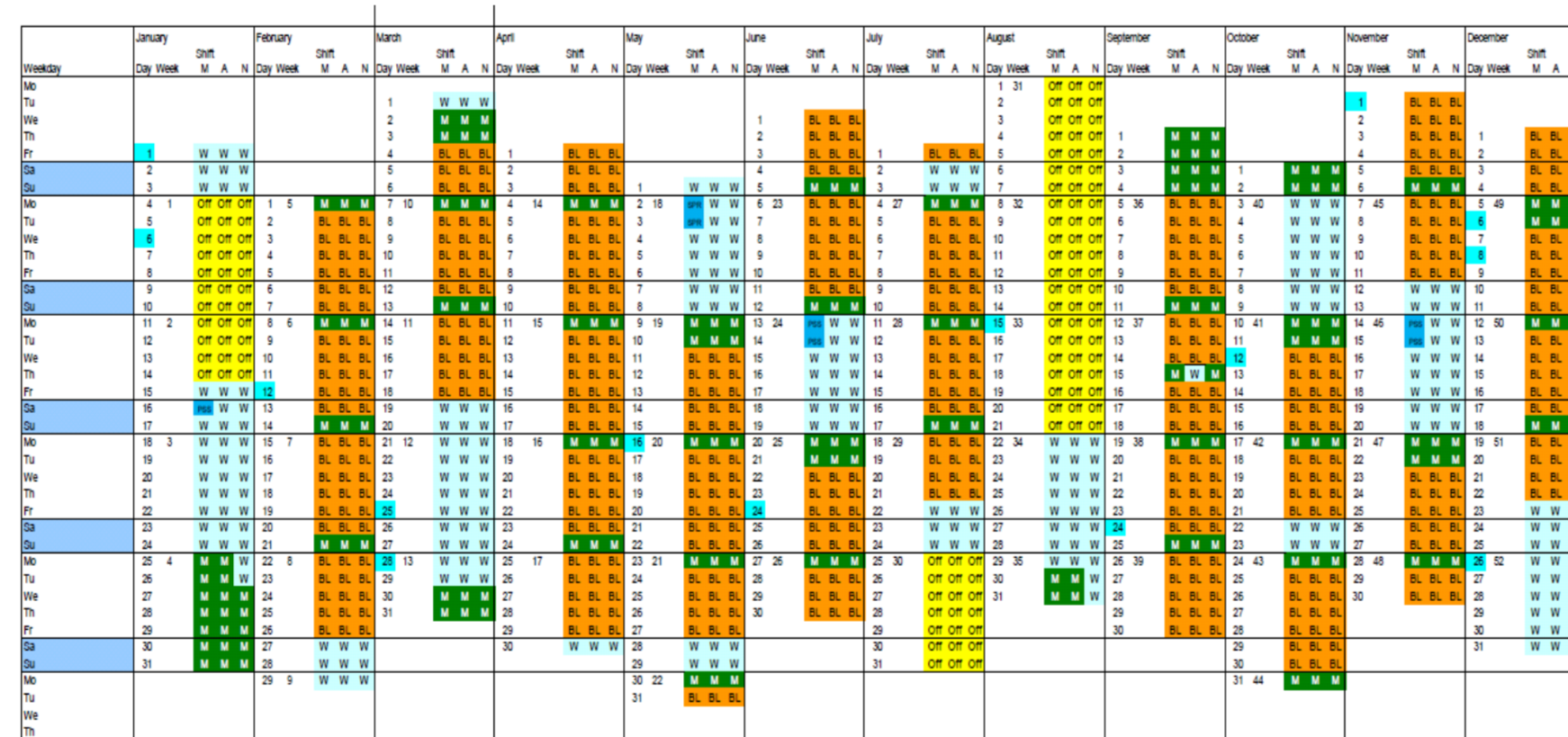
- 8 BLs are opened to users
- 1 Diagnostic
- 1 BL in construction
- 1 BL in design



Synchrotron light from different sources:

- 2 Bending magnets
- 2 In-Vacuum Undulator
- 1 Superconducting Wiggler
- 1 Multiple Wiggler
- 2 Elliptical Undulator

Operation at ALBA-CELLS



- During operation for the beamlines, the machine runs 24h per day, 7 days per week.
- 7 operators do shifts of 8 hours to control the good quality and stability of beam.
- 5700 h of operation 2016
 - 75% of beam for BLs
 - 25% of beam for Machine studies

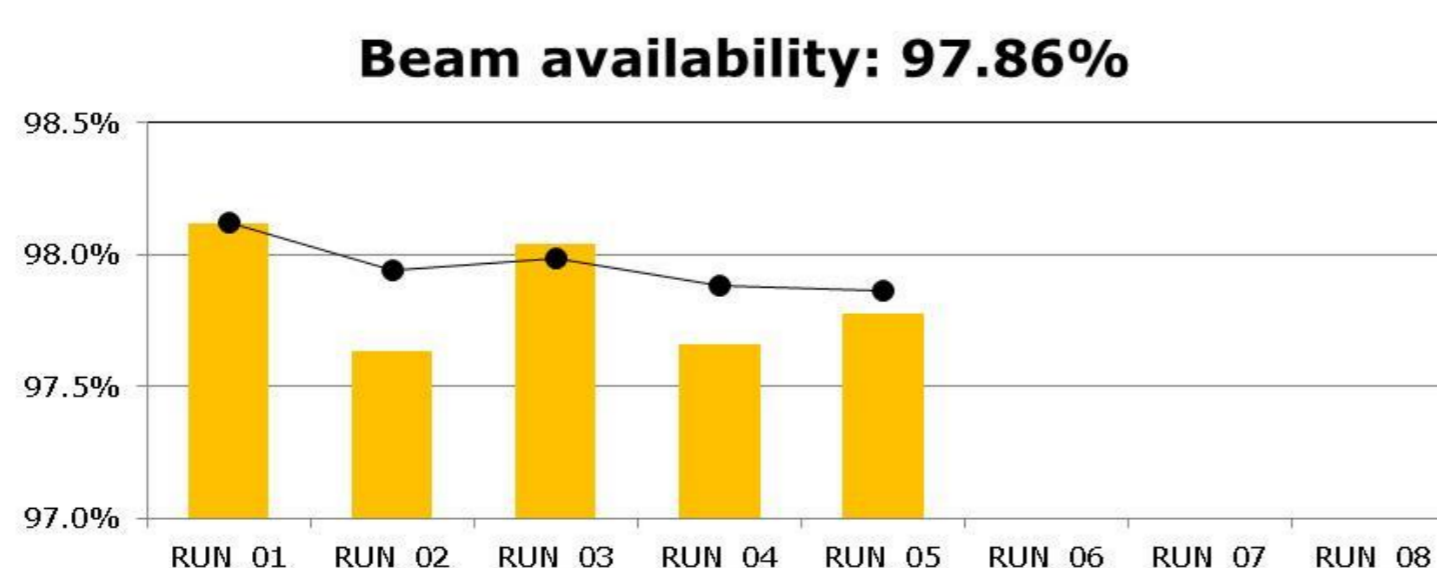
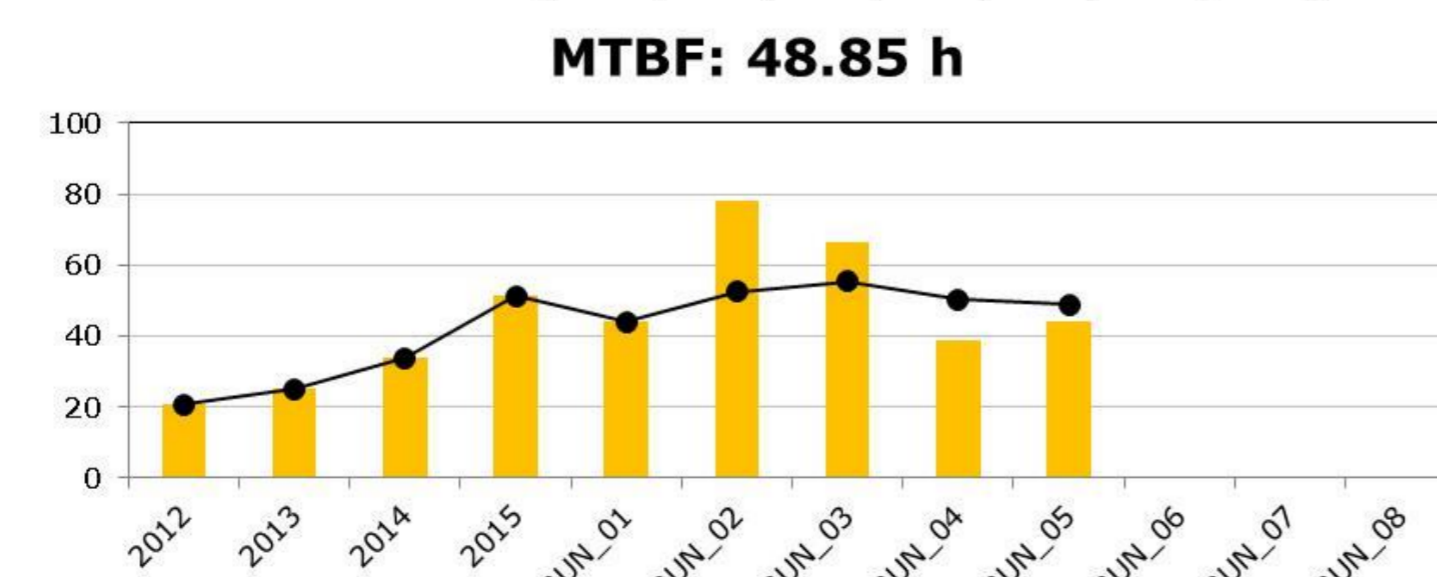
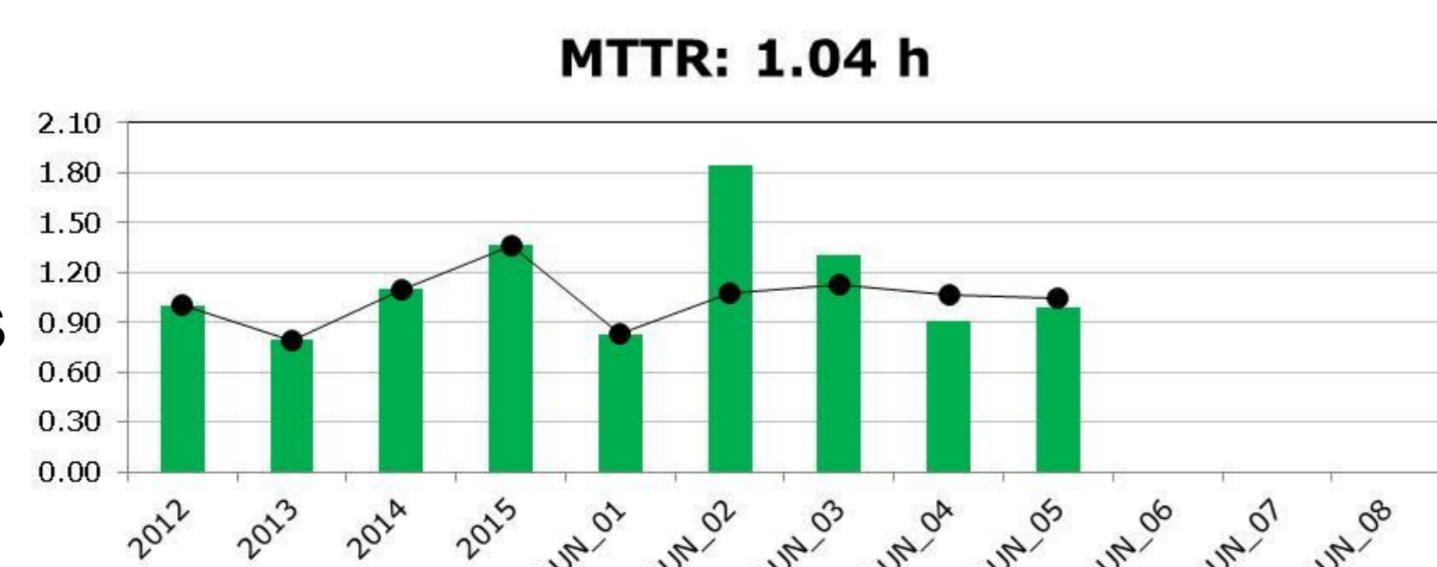


OPERATOR main tasks:

- Operate the accelerators
- Maintenance tasks of accelerators
- Collaboration in machine studies.
- Operation GUIs and software
- Statistics,...

Other support tasks:

- RF, Magnets, Diagnostics, ...
- Mechanical designs
- Controls
- Radiological Protection,...



Support at different subsystems:

- Linac & EPS (M. Sos)
- Pulsed Magnets (N. Ayala)
- Klystron & Magnets maintenance
- Maintenance tasks
- Procedures & manuals development
- Improvements
- Technical support in upgrades.
- Problems Solutions

