

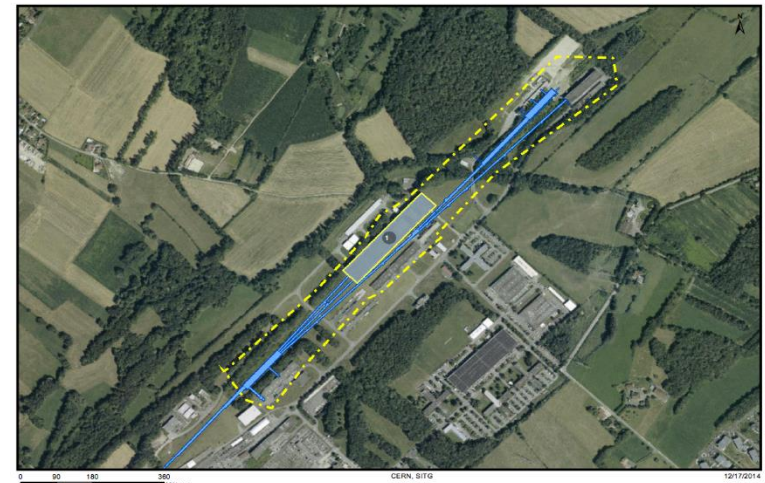
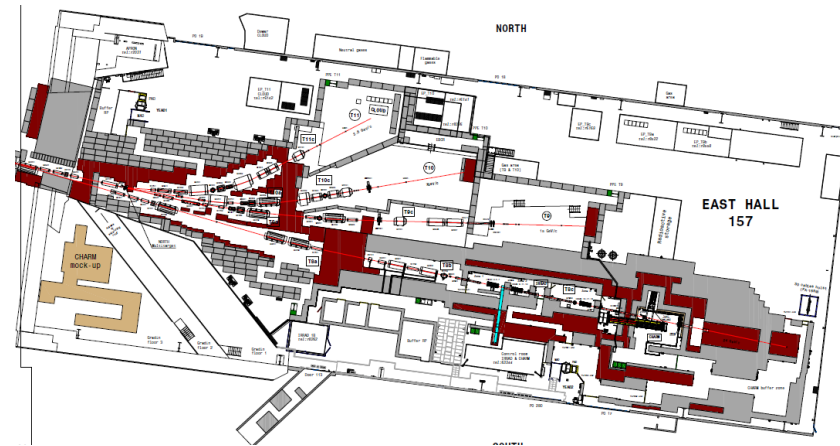
Restarting the SBA - The East Area and the North Area

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IRWG, 27. August 2015

Areas covered

- East Area
 - From Target to North and South branches
 - Auxiliary buildings
 - See safety file 1273737 for complete list
- North Area
 - From TCC2 target including Wobble Station
 - EHN1, EHN2, ECN3, transfer tunnels and auxiliary buildings
 - See consolidation proposal 1456636 for complete list
- Most of the SBA hardware originates from its initial implementation, which requires substantial effort for maintenance and operation.



LS1 activities

East Area

- IRRAD/CHARM installation
- Consolidation
- CESAR extension for East Area
- Ramses

North Area

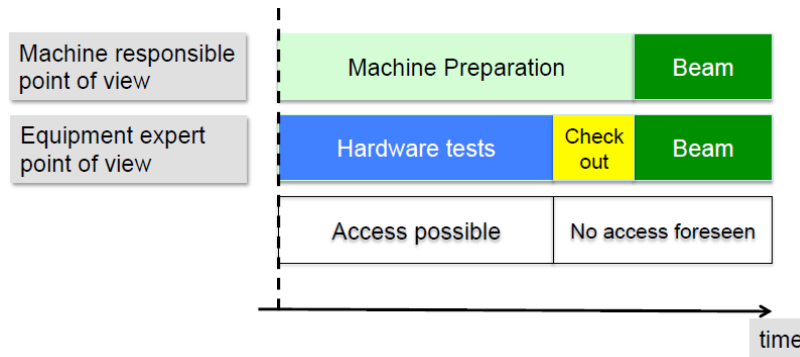
- K12 upgrade
- TCC2 consolidation
 - RP aspect determined the project start
- GIF installation
- house-cleaning
- ...

Planning of Annual Restart

- Re-start (of elements) is not only after a long-shutdown
 - User changes
 - Beam changes (ions, secondaries, protons)

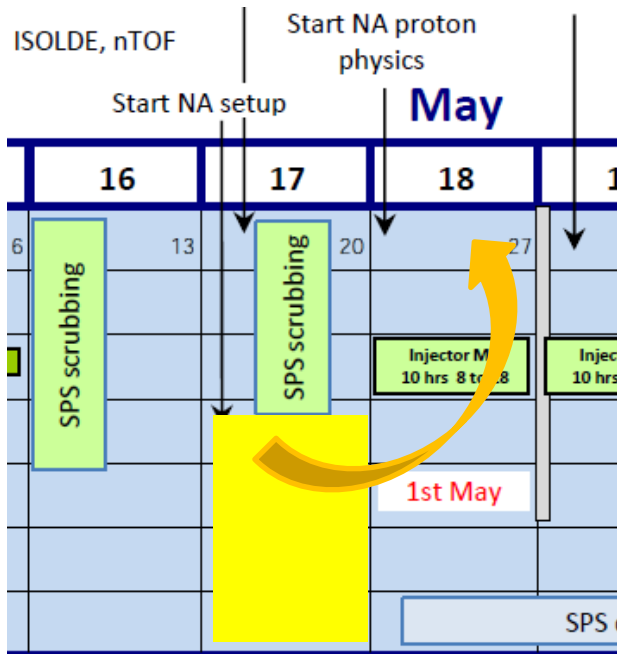
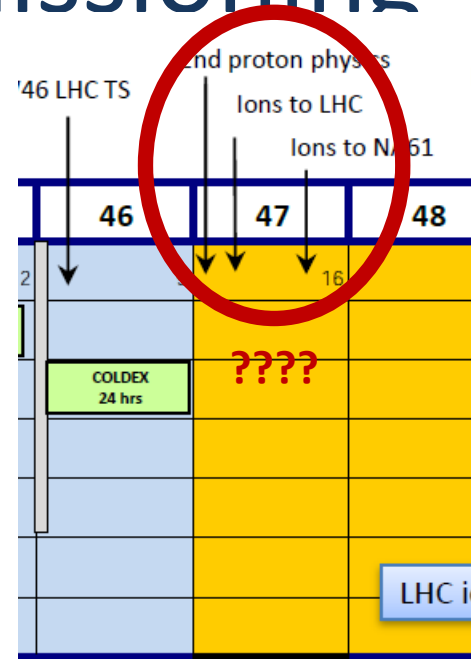
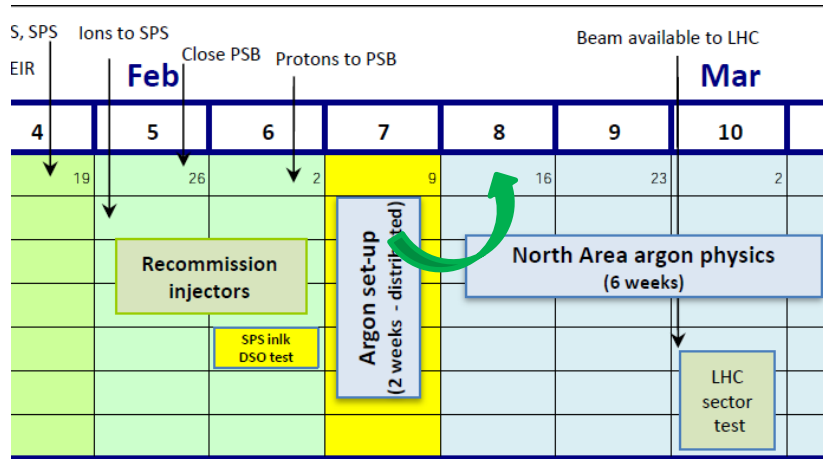
Some elements are only used for certain configurations.

CHECK elements in various configurations expected during the year



- SBA beam commissioning
 - Can only take place after the injector chain is fully in operation

SBA beam commissioning



If scheduled SBA beam commissioning is late, users are still waiting.

SBA beam commissioning

- Some equipment and operational aspects can only be tested with beam
 - Particularly important for beam diagnostics
- Important to indicate the SBA beam commissioning period in the schedule.
- Beam commission effective only during working days
 - Availability of equipment specialists

Coordinating panel

EATM (Experimental Area Technical Meeting)

- Coordinating installation work and schedule for East Area, North Area (and nToF, AD, HiRadMat)
 - Providing beam with associated equipment
 - Infrastructure for testbeams/experiments
 - Assisting experiments on their equipment (installations, cryogenics, vertex magnets ...)
- Meeting during shut-down AND beam time
- Meeting every 3-4 weeks (annual meeting schedule established in advance)
- Attended by equipment representatives, experiment responsables

Equipment specialists

- Teams and personnel are very enthusiastic and committed.
- Need to be available for starting the systems according to schedule
- Priority to SBA during commissioning period
- Not delaying due to other works

Safety integrity and documentation

- Manual veto by EN/MEF (North Area only)
- DSO tests
- Some (safety) systems cannot be shut down
 - Safety access system (for GIF)
 - Alarm systems

Configuration changes

- Daily operation done by BE/OP
- USER and BEAM changes done by EN/MEF
 - Largely transparent to operation
- Work notifications by EN/MEF
 - Planning hardware changes
 - Tracing the changes
 - Coherency with configuration management (BE/CO - CESAR)
 - CCC has partial role in coordination

Examples

- East Area
 - First “machine” not included in LS1 coordination
 - Unanticipated changes of system responsables
 - Feed-back from system responsables welcome
 - Changes in HW configuration needs to be evaluated
 - E.g. removal of marguerite controls also impacted on TV screens
 - Change of access safety doors – missing control of beam stoppers
 - ... many items, which were cured in the last minute or temporarily resolved – head-ache
- North Area
 - restarted well after LS1
 - ...
 - EN/CV started well in time with the hardware commissioning of the cooling circuit, but one after the other pump broke down.
 - Some beam commissioning during users’ time
 - Increased coordination effort from machines

Beam controls – CESAR

- During LS1 there was a clean-up and development phase of CESAR.
- CESAR was continuously used in dry run and not left alone during shut-down period.

Consideration: some systems for minimum shut-down period.