Setting up your beam in the East Area

Generalities on beam control

The secondary beam lines are controlled partly by local electronics in the EBCR control room, partly from two Linux computers in that same room or from the beam terminal in your control room.

On the computers in the EBCR, please make sure you are using the correct workspace (tab).

Further help can be obtained 24 hours per day from the CCC: Call 76677

Booting the computer

The computers auto-boot: please do not type a user name or password, but wait 30 seconds for the computer to start up

The Cesar control system

Cesar can be started by right-clicking on the desktop. Task icons allow to perform specific tasks. The menu bar and ‘physicist tree’ are more for experts.
In case of Cesar problems

In case Cesar blocks or does not behave correctly, you may stop it by closing the Cesar window. It can be restarted by a right-click in the desktop and selecting CESAR.

In the EBCR, please click in the tab of the work space for your beam line!
In case you do not manage to solve the problem, please call the CCC (76677).

Switching off and on the beam

Access to the beam zone is only possible when the beam is safely stopped.
The beam is stopped by one (T10, T11) or two (T9) beam stoppers.
The Beam Stopper Status allows to put them IN (beam stopped) or OUT.

Select the beam stopper(s) and click Move in or Move out.

Only when the beam stopper(s) is (are) IN the beam, you may control the state of the access door via the touchscreen next to the door.
The only state of the door allowing beam is CLOSED.
The LOCKED state does not allow beam.
In KEY ACCESS, every person entering the zone must take a key. When all keys are back, anyone can close the zone again.
FREE ACCESS allows to enter the zone without a key. However, going back to CLOSED requires a full search (patrol) by a trained and authorised person from your team!
Finally, only use the Emergency Passage button in the door for real emergencies!

The beam stoppers will only move out when the zone is CLOSED!
Magnet Control

Click on the Magnet status icon

The Read column shows the actual value, the BeamRef the last requested value. You may change the value by selecting a magnet and clicking on Set. BeamRef and setting can also be modified by loading a beam file. A ‘F’ in the 7th column indicates that the BeamRef is different from the current in the active beam file (e.g. by tuning its value). You may also select settings according to the reference (plastified) sheets in the control rooms, also available on the East Area web page.

However, all horizontal bends except the last must always be on nominal! Positive currents for positive beams, negative currents for negative beams (except for the CLOUD big beam).

BHZ and BVT stand for Bend HoriZontal and Bend VerTical, respectively. QDE and QFO for Quad DEfocusing or Quad FOcusing (in the horizontal plane)

In case there is a problem (shown in red), i.e. Read and BeamRef stay different, you may use the Rectifier status to cure it:

Please select the magnet/rectifier affected and try Reset, Standby, On and Set current (or Set to BeamRef in the magnet status) until it works. In case you don’t manage, call the PS operators in the CCC.
Collimator control

Collimators can only be controlled locally from the racks in the EBCR. If you want to select ±X mm for the gap of the collimator, dial 50+X/2 on each of the two thumbwheels of the collimator in question and then push on the red strobe buttons. The collimator jaws will slowly move to the required positions, as indicated (in mm) on the LCD screens. Normally the horizontal collimator controls the momentum spread and the vertical one the vertical acceptance.

Target control

The choice of target heat (4 or 6: electron enriched, 11: hadrons) is made by the CCC, following discussion at the schedule meeting.

Beam Files

Some pre-defined beam settings are available from the Beam File Browser:

A Beam File is a list of currents. You may select a file and Load it (i.e. activate it). After beam tuning you may ksave the settings by ‘BeamRefs -> Selected File’. You may also create a new file at a different energy by the Extrapolate button.
The beam intensity

The primary beam, as well as the primary production target are controlled by the CCC operators (tel. 76677). You may check the quality of the incident proton beam via the Scintillator status:

The TELEscope reading is an indication of how much beam hits the primary target properly. A good reading is above $2 \times 10^4$ ppp.

The SCINT1 reading gives the intensity of the beam at the end of the line. The EXPT scaler status shows the reading of the experimental scalers. You may provide NIM signals from your own detectors to the beam control system via patch panels in your control room.

The beam profile

The Delay Wire Chamber Profile knob shows the horizontal and vertical beam profiles at the end of the beam line. The scale is in millimeters. Eg. in T9.

The steering can be adjusted with the last BHZ and with BVT1.

If you move the focus far downstream (with the last two quadrupoles, see the listings in the control room)), the profile in the XDWC will quickly get very wide!

The DWC status panel shows the status, but adjustments are reserved to the experts.
The VISTAR pages

A VISTAR pages is available from the Web or on the TV screen in the control rooms:

The curve shows the time distribution of the incident protons over the 400 msec spill. The green dots show the recent history of TELEscope readings. Above the dots the primary target head number is shown. Head 0 indicates a problem. On the right hand side the status of the beam stoppers is shown. Another page shows the overall PS status: