

General comments:

- Camera and lights will be installed on the septum outside of the machine.
- For camera and lights exchange, it is mandatory to have easy and fast (dis)mounting systems.
- A setup for adjusting the optics is to be defined (BI lab or dummy mounting place) to avoid spending time in the irradiated zone.
- Once the camera is installed, a 'capot' as protection should be installed as well to prevent any displacement of the camera or shock during any other work that will be held around.
- Lights:
 - o 2 lamps will be installed
 - o independently controllable
 - o only 1 should be used at a time to have the other as spare
- Check possibility of monitoring time of use (camera ON) to better prevent from end of Vidicon tube lifetime.
- Valves for pneumatic screen movement installed outside of the shielding / irradiated zone
 - o Should the copper air tubes from the valve to the instrument through the shielding be integrated in the design (drawings?)??
- Filter wheel needed to be able to see the screen for calibration but also get non-saturated image of the beam (1 to 4E13p !).

RP point of view (*first estimate*)*Installation:*

- Connection of the system in PS:
 - o Less than 1 minute to connect the 4 cables (2 for the camera, 1 for the light and 1 for the movement) since the BTV is already adjusted on the septum before installation in PS.

Maintenance:

- Light exchange: (at least once a year since will get brown rapidly)
 - o Disconnect the cable 10s
 - o Dismount the mechanical light support 15s
 - o Exchange the lights 1-2min
 - o Re-mount the lights support 15s
 - o Reconnect the cable 10s
- Camera:
 - o Disconnect the 2 cables 15s
 - o Dismount the camera support 20s
 - o Exchange the camera (3 possibilities)
 - New camera with new support 0s
 - New camera only 2min
 - Need optical readjustment in situ 30s
 - New Vidicon camera tube 4min
 - Need optical readjustment in situ 30s
 - o Put back the camera with support on the septum 30s-1min

In the dummy_15 zone

outside the dummy_15 zone/safe area