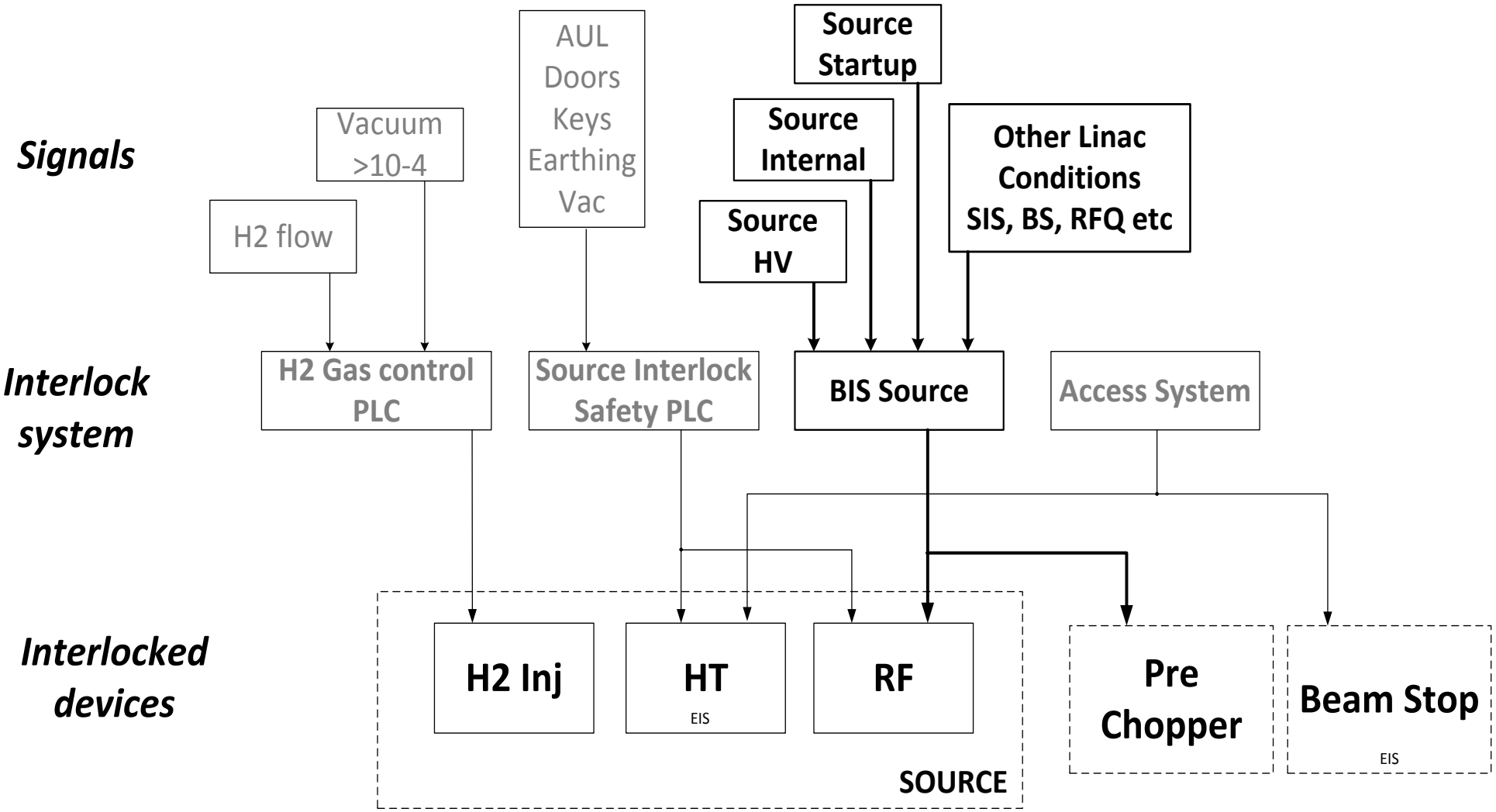
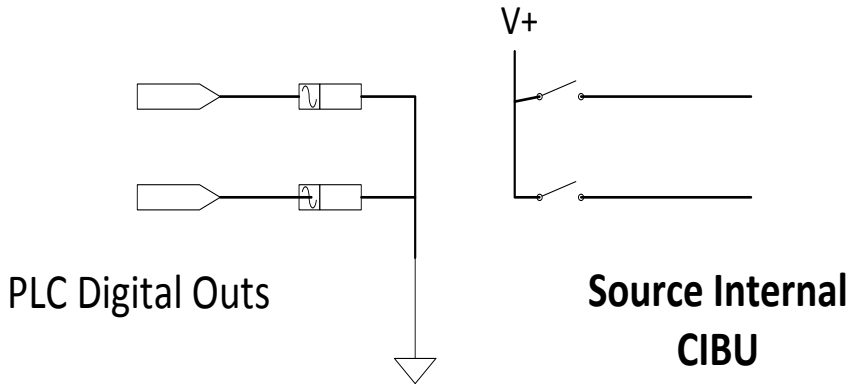
Linac 4 Source Interlocks

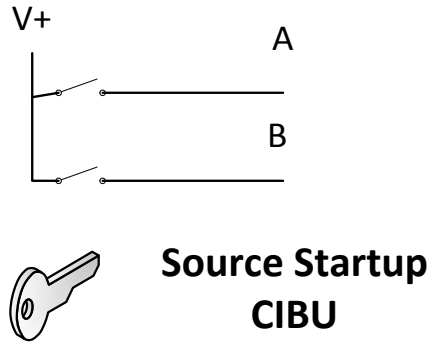


Linac 4 Source BIS Inputs

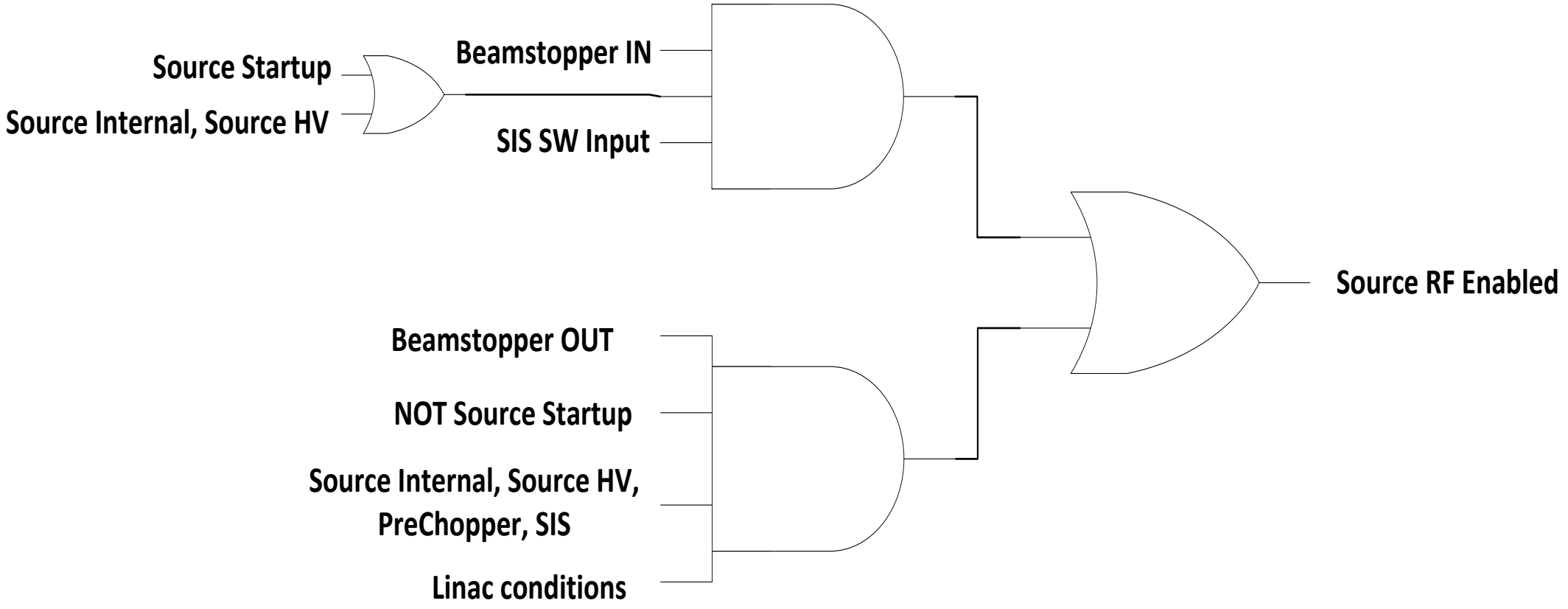
- “Source Internal”. Standard S7-300 PLC driven relay contacts. True when source control PLC is operating correctly. Future possibility to allow extra logic.
- “Source HV”. Unused, so set always true. ‘Bouchon’ fitted at CIBU/BIS.
- “Source Start-up”. Electrical key switch. Allows override of “Source Internal” and “Source HV” for operation of source when beam stopper is in.

CIBU inputs “Source Internal” & “Source Start-up” described in **EDMS 1538576**. Commissioned 15/10/2015 and not modified since this date.

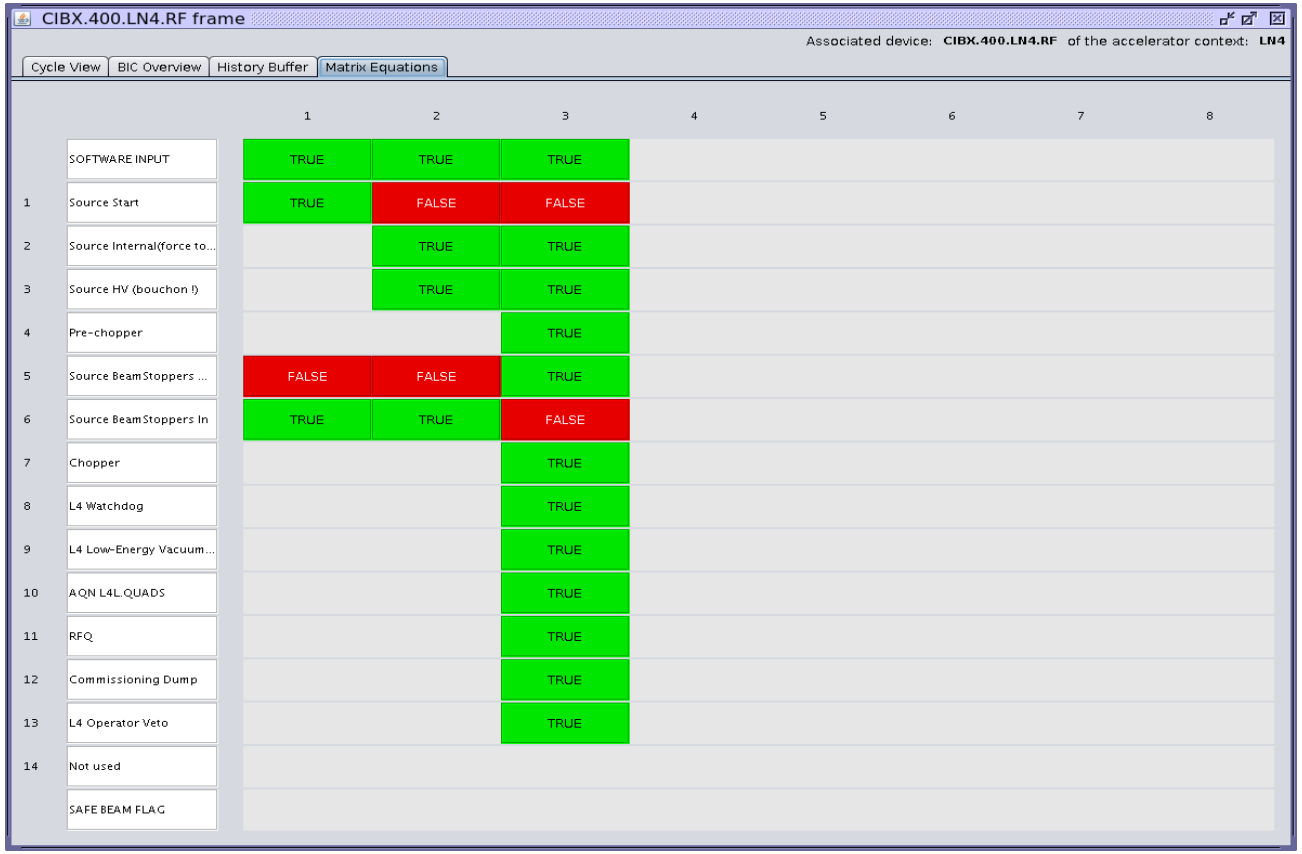




Linac 4 Source BIS logic



Source BIS logic.



If the **beam stopper is in** then the source can run for conditioning (Source Start-up mode).

If the **beam stopper is out** then the source must not be in start-up mode and all the other Linac conditions must be true.

The SIS must always be true.

Summary

- Source BIS inputs are unchanged since they were commissioned.
- No changes foreseen with the source BIS inputs for half sector test.
- We need to confirm that the BIS equation of the other Linac conditions when the beam stopper is out is still valid for these tests.
- Verify the operation of the SIS.

Other Source Interlock Systems

- Access System. Acts upon the HT and beam stopper in the event of a forced door. Source HT is an EIS. DSO tests EDMS 1146640.

- Source Cage HT Interlock. S7-300F Safety PLC.
  - Test procedure EDMS 1314944, Test results EDMS 1321824 10/2013
  - System Description EDMS 1212106

- Gas system. S7-300 PLC, H2 flow rate or high source pressure (>10-4) will stop gas injection and hence source.