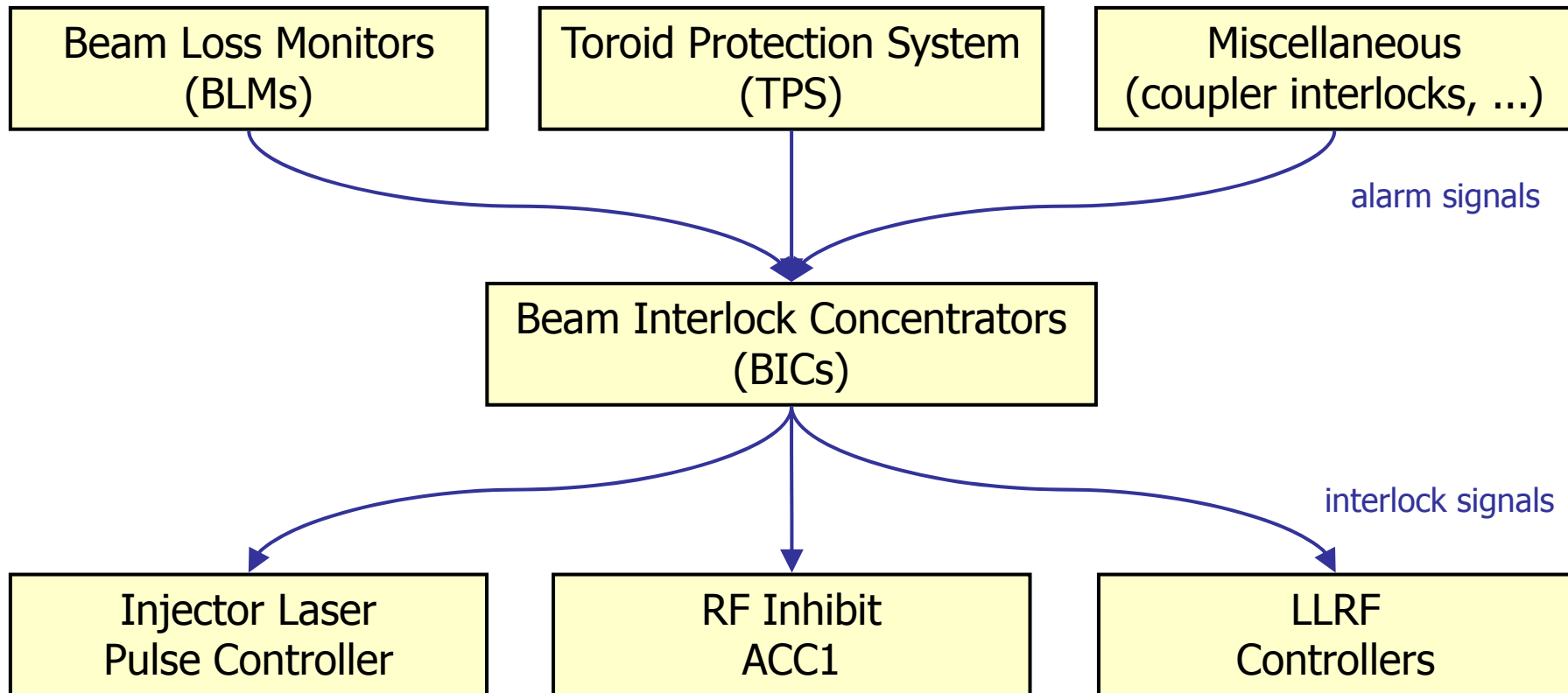
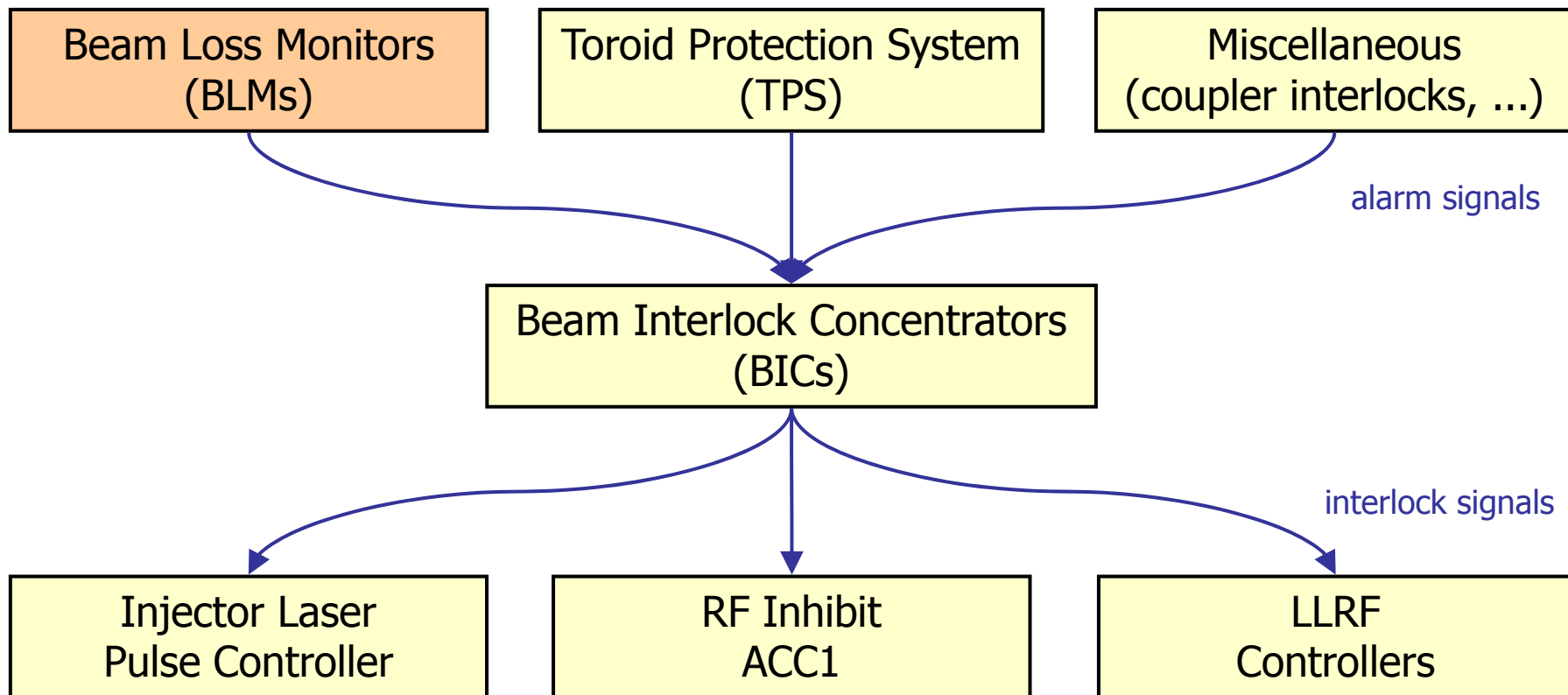


# Machine Protection: Status + Outlook



- Status of the fast protection system
- Beam loss monitors for the dump line
- Small issues, miscellaneous

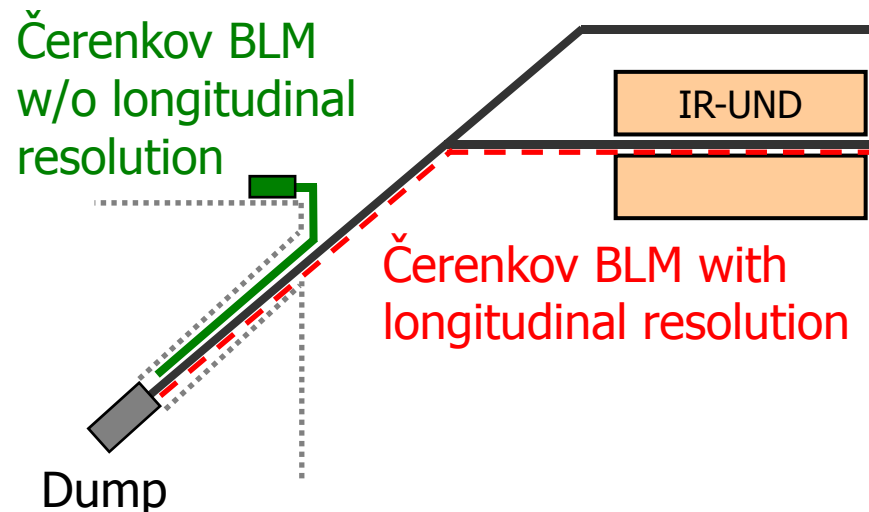
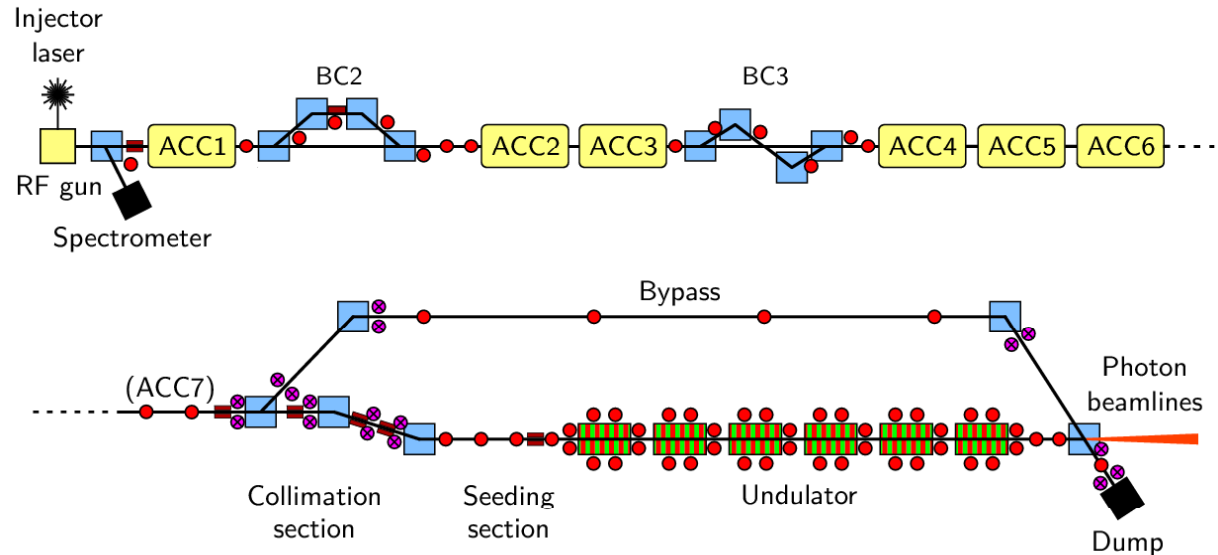


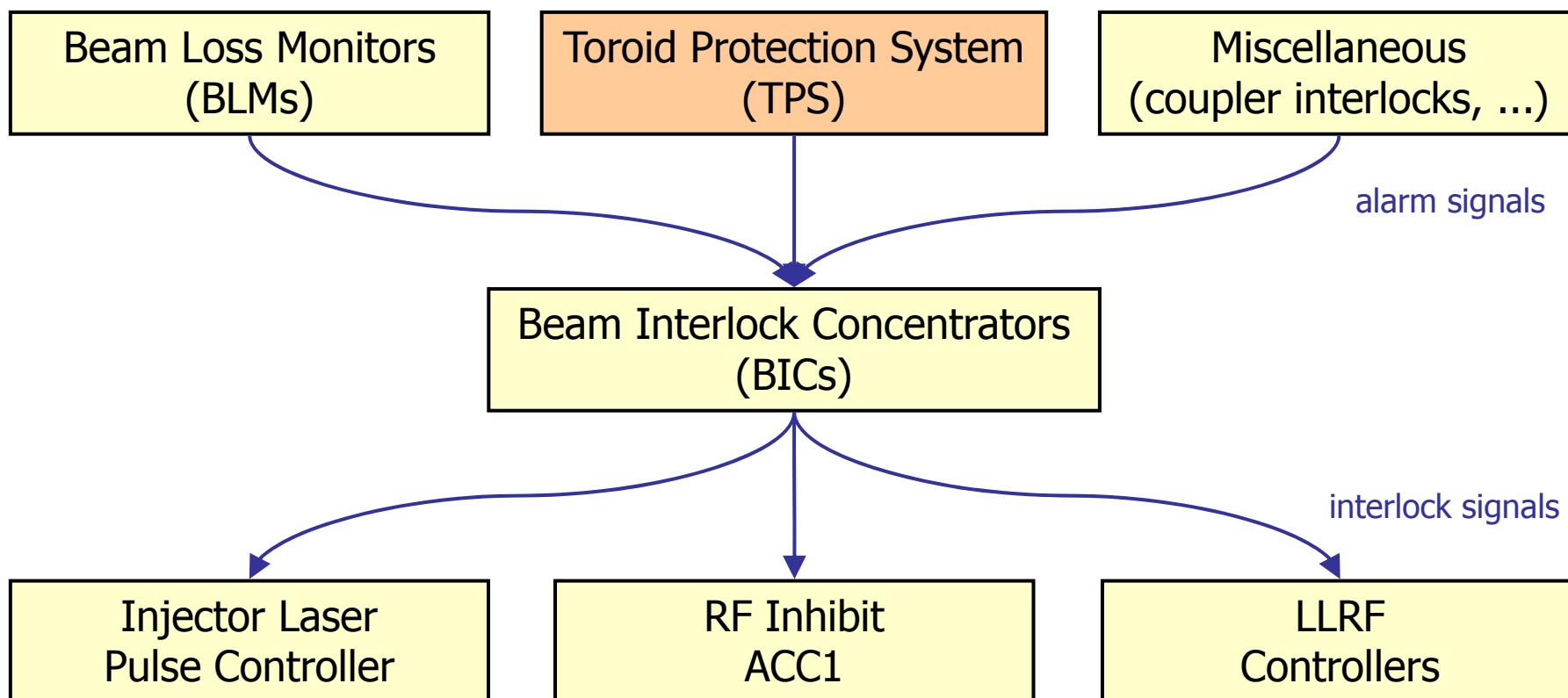


- Sufficient instrumentation up to dump entrance
- New Čerenkov BLMs added (1 installed, 1 in next weeks)

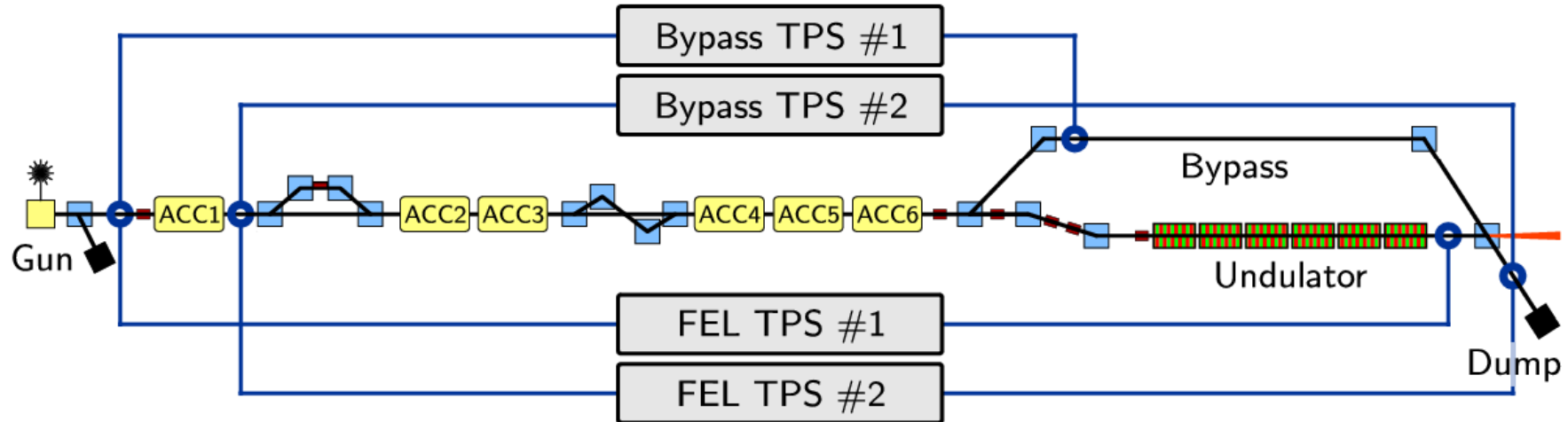
## Shutdown:

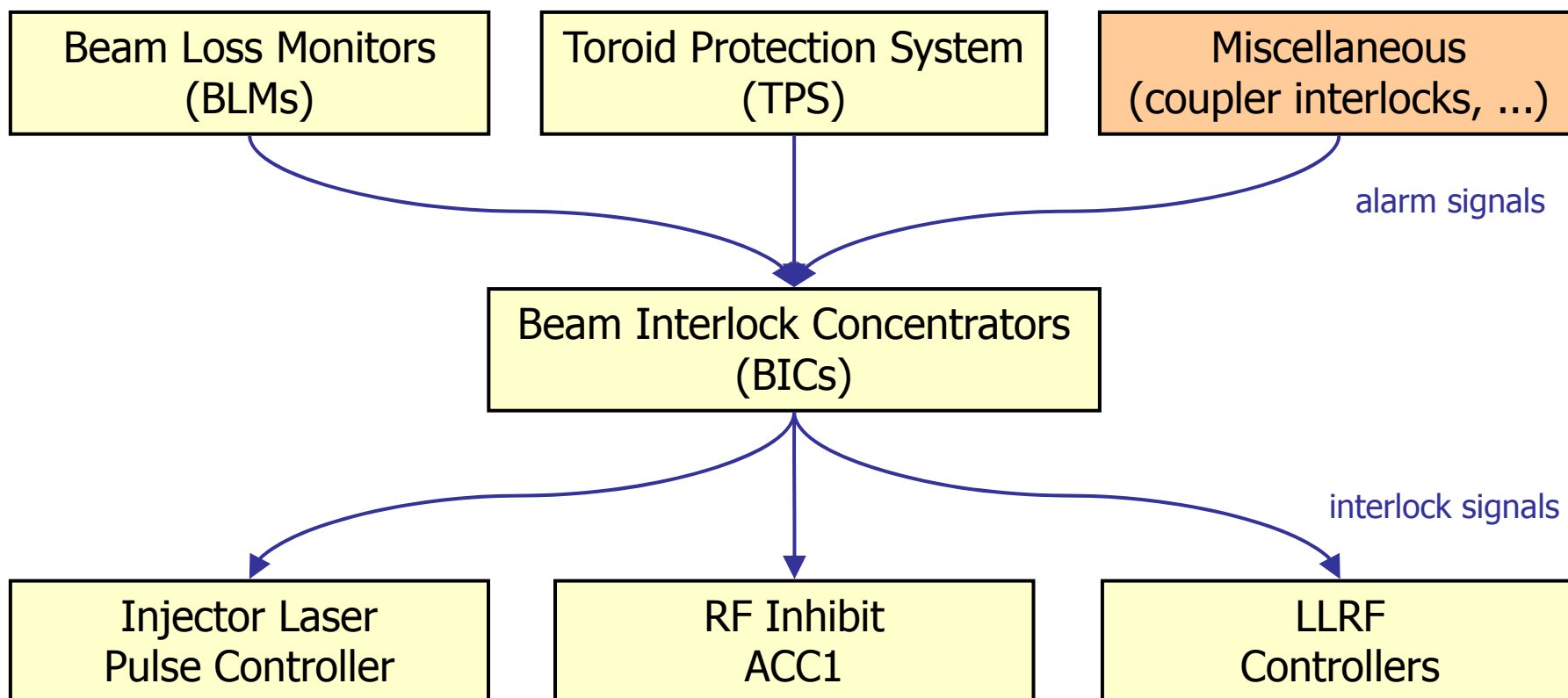
- Long ionization chambers (K. Wittenburg): integration to MPS prepared
- Čerenkov BLM with longitudinal resolution (M. Körfer): no integration to MPS





- Bypass TPS #1 and #2 operational, but...
- Re-calibration required because of major changes to toroid signal levels (time needed:  $\sim 2$  h at low losses)
- Designed for up to 9 MHz, but never tested



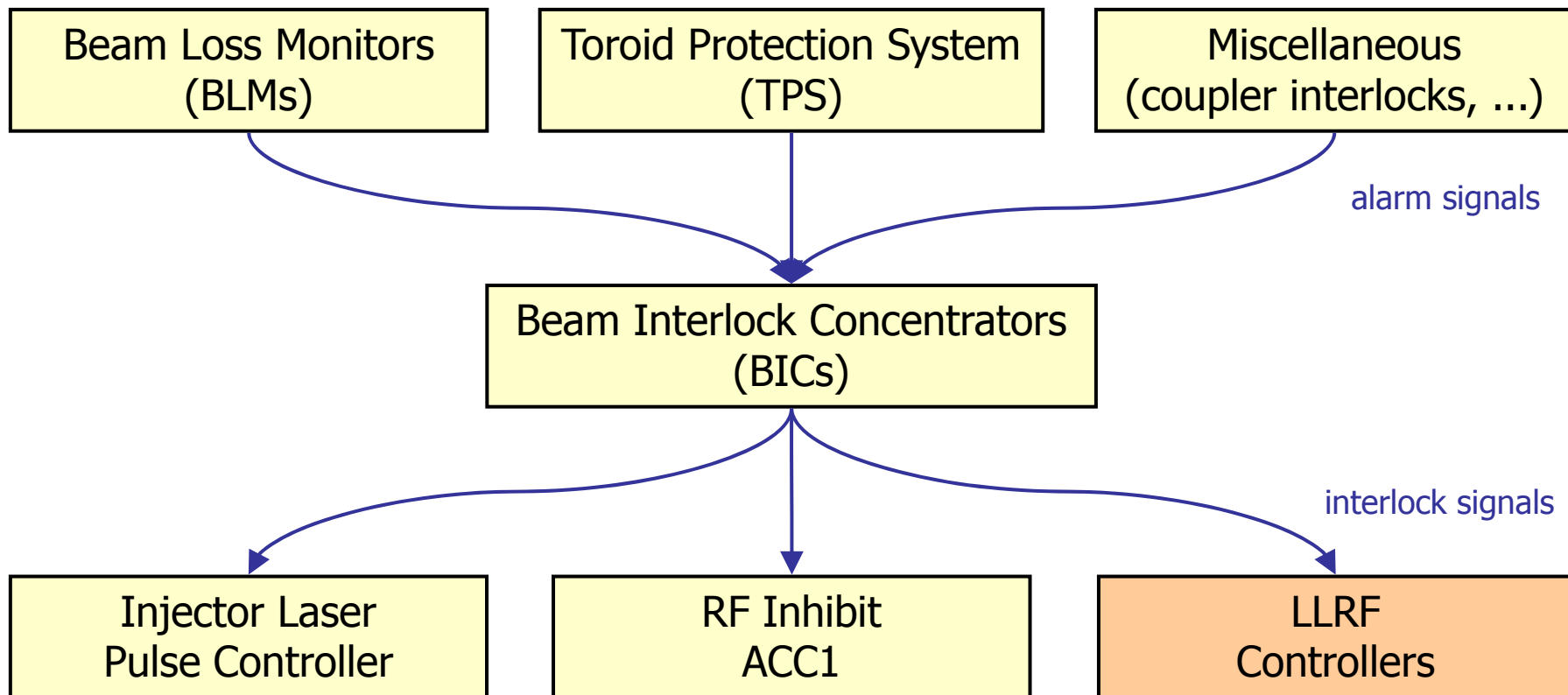


- Coupler interlocks:  
ACC1–5 OK  
ACC6, ACC7, ACC39 to be added
  
- LLRF exceptions:  
prepared, but not used

## Quench detection for 9 mA run?

- New toroid integrator (~May):  
limits charge to 30 nC/bunch train in short pulse mode





- Connection MPS → ACC1 available
- ACC1 LLRF is aware of MPS alarms: output is zeroed for remaining pulse
- Past coupler interlock problems solved
  
- New problem with adaptive feedforward:  
irritated by shortened RF pulse → instability

**shortening of ACC1 RF pulses disabled  
until there is a solution**

- Do we need connections to the LLRF of the other modules, e.g. for beam loading compensation?

The end.