

# Implementation of PS-Control for DHH

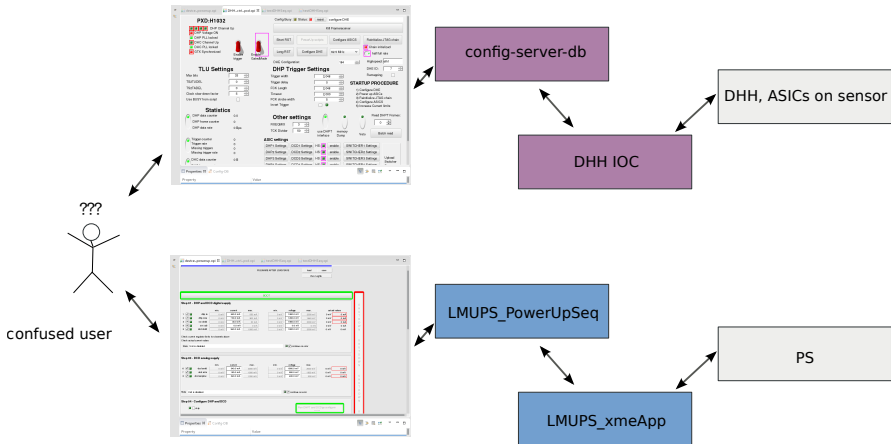
10th VXD Belle II Workshop

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# Power-Up Sequence: Status Quo



This approach has some problems:

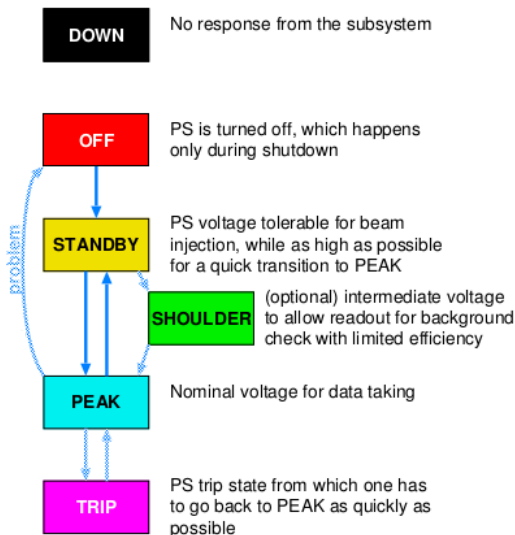
- Error-prone: Forgetting steps/checks or performing them in the wrong order might damage the hardware
- Does not scale to more than a handful of sensors

# Power Supply Control

Instead, we'd like to have an automatic procedure to turn the sensors on/off, with concise status information.

- Two PVs to query/set state
- Exists for power supply, but is missing the DHH part

## Power Supply States



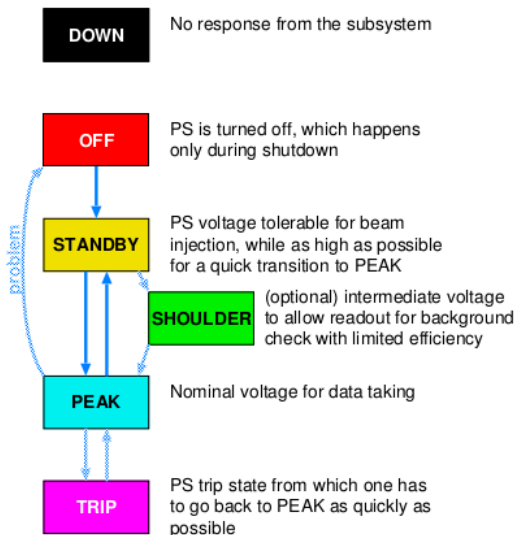
# Power Supply Control

For DHH:

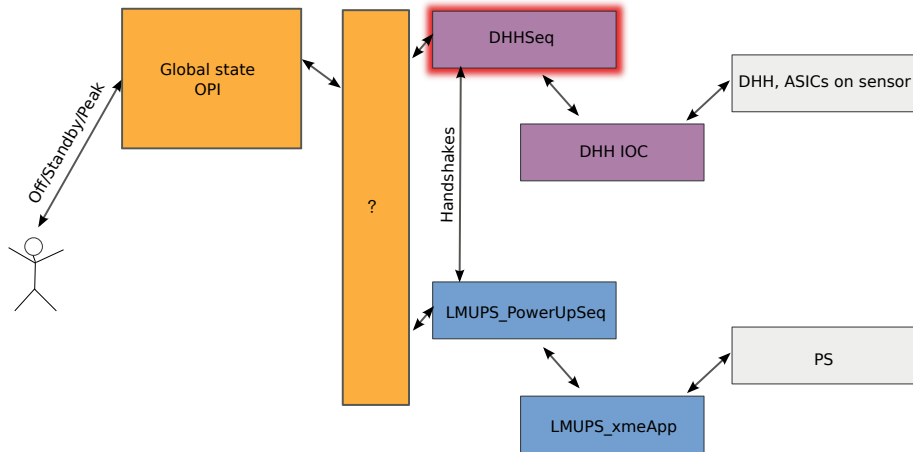
- OFF: DHH configured
- STANDBY: ASICs configured, DHP links up, switcher sequence loaded, DCD analog part enabled
- PEAK/SHOULDER: same as STANDBY

(allows taking dummy data from DHH (DCD) in OFF (STANDBY))

## Power Supply States



# New Power-Up Sequence



# Implementation Status of DHHSeq

- IOC with state machine exists
- State transitions perform configuration of DHH/ASICs, handshakes with PS sequence IOC
- Appears to be more stable than config-server-db

Switcher sequence missing, not all checks in yet. Should be ready for real-world tests soon.

- Error handling
  - Detection issues: DHH IOC does not perform sufficient checks
  - Single ERROR state sufficient?
- Checking dcd\_avdd etc. current drop after ASIC configuration needs to be added. Add H/W-dependent limits to DB?
- Do all DHP highspeed links need to be up for STANDBY? Add skip PV?