IPMI Slow Control, Run Control

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Hardware/Firmware Updates

- IPMC hardware for carrier is done
  - Firmware for carrier only operation is working
    - incl FRU states (power up/down, hot swap)
    - power negotiation
    - all sensors
    - temperature alarms (which will increase the FAN speed of the shelf or shut down the board)
- IPMI → EPICS → CSS working
- Final PSU board where the IPMC is plugged on will be ready end of october (JZ, IHEP), until then we have to live with quirks
- MMC layout done, PCB in production, prototype expected end of september.
- MMC firmware is prepared and mostly done
- MMC ↔ IPMC ↔ ShMM gives me an headache still

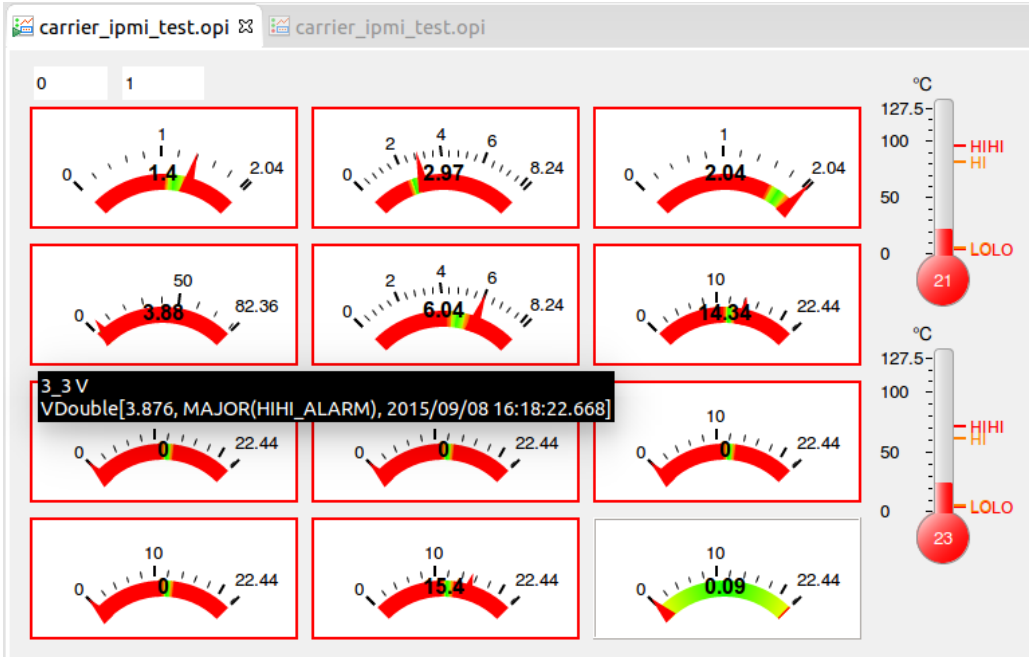
Test with ipmitool IOC

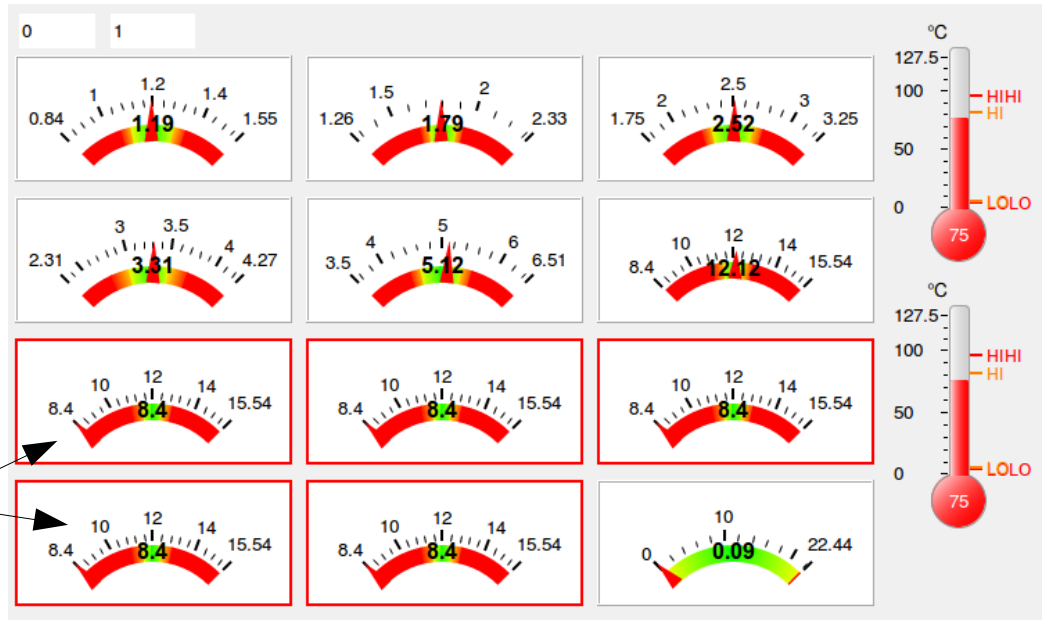
- monitoring of sensors ✔
- reading limits, min/max and determine error state ✔
- sensors which are not available (yet) ✘
  - → IOC has to be started after ALL board are power-up
  - Handling of disconnects? (sensor went to major alarm and stayed there)
  - Handling of dynamic sensor changes? (AMC board unplug)
    - Change of limits?
- Anyway, only testable when we have MMC available.
- CSS → EPICS → IPMC has to be tested (power cycle etc)

- Wishlist for now:
  - Startup with unavailable sensors
  - Correct handling of de- and reconnect

CSS "issues"

- Scales look strange with limits
- small green band is completely hidden by arrow
- blow up relevant range
- (we anyway have to map 10 bit adc value to 8 bit IPMI value)
- tested with +-30%
- better, but still not too nice.
- (actually, I dislike the GUI items, esp the one for temperature.)

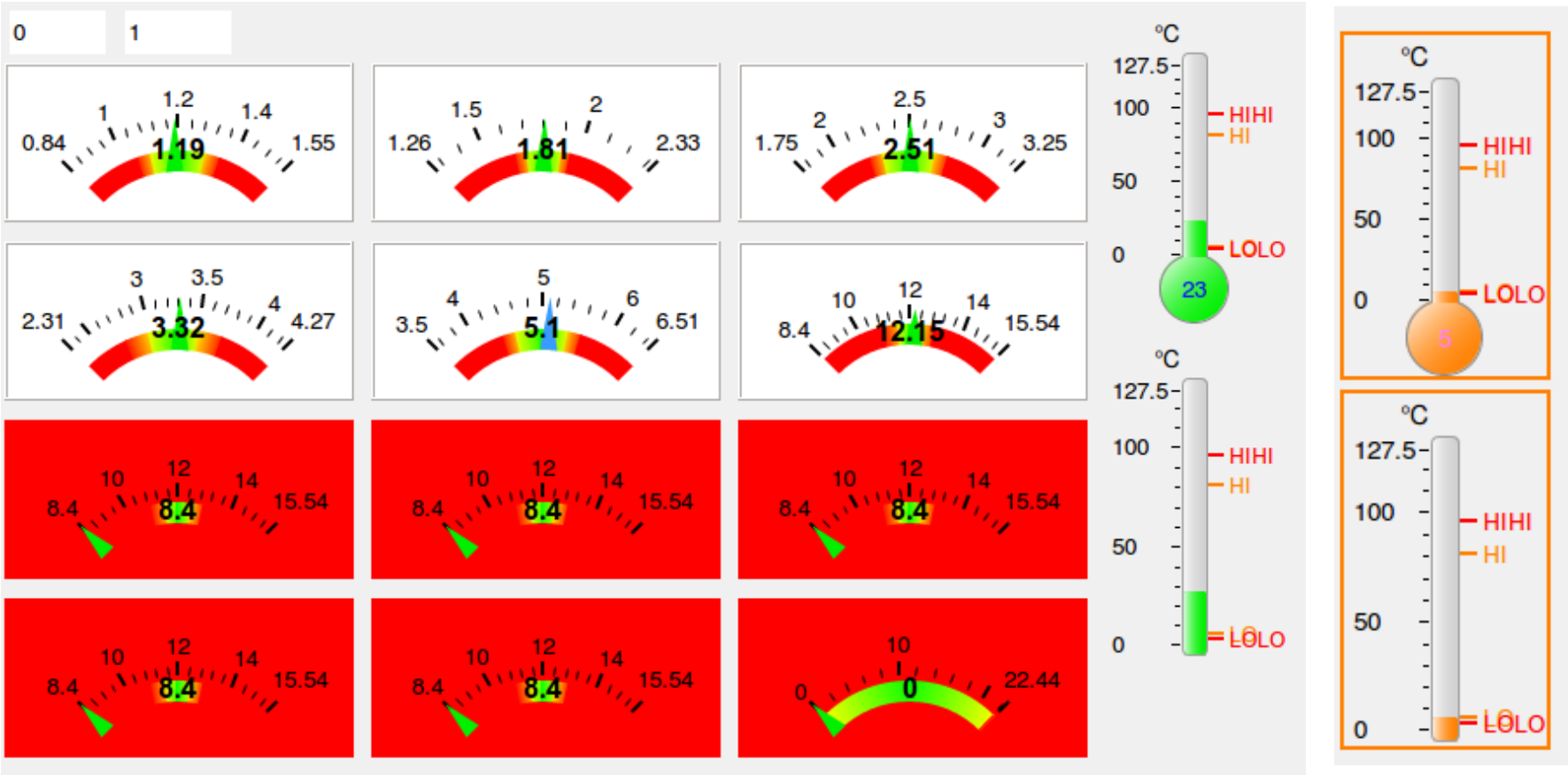




This value is 0
but shown as lowest
possible value

CSS "issues"

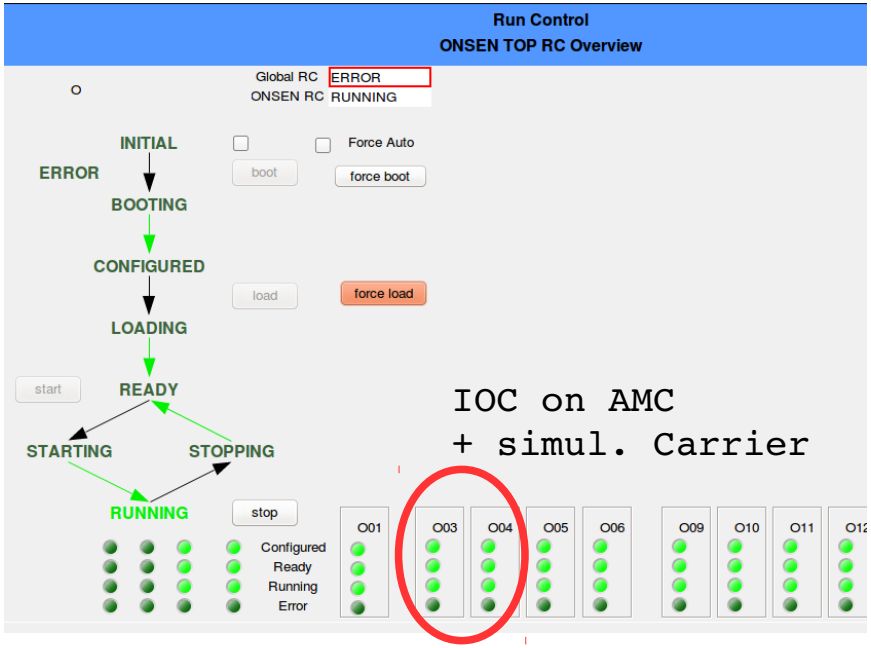
- Change colors and behaviour to make it easier to detect abnormal values.
  - Background or Fill Color → alarm sensitive
  - Pulsating alarm does not yield satisfactory results (IMO)
- How are you doing it?

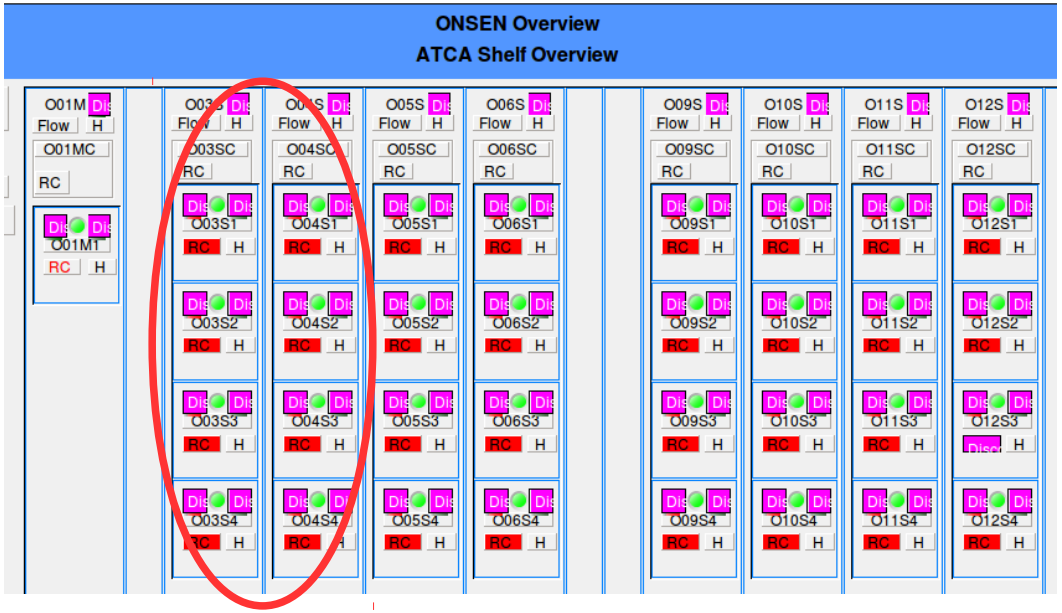


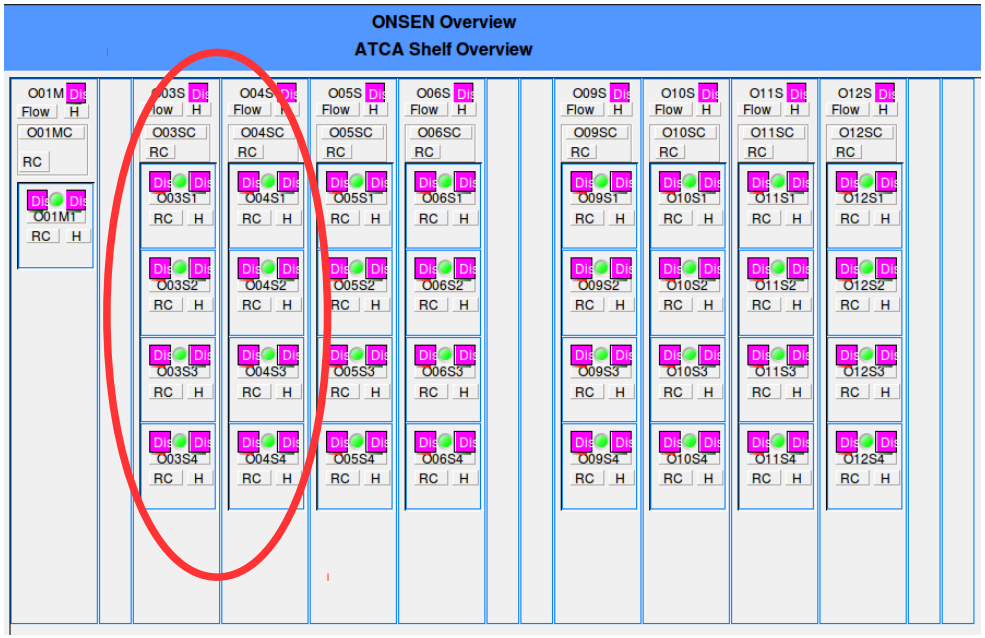
Run Control Test

- Test with a “complex” system
  - we know it works with single board and in software.
- Test RunControl with “full” shelf, 8 (AMC) boards and 34 simulated boards (25 AMCs, 9 Carrier).
  - Maximum I could aquire for a test
- Using bitstream and EPICS flash content from 2014 (KEK test)
  - Setup time consuming, as all boards need different MAC, IP and ID.
  - Changed a lot in the EPICS flash content
- Works! Boot, Load, Start, Stop → cycle
- Controlled from CSS
- Real IOC runs some “init” script on AMC
  - load, start, stop possible too

Meaningless Screenshots

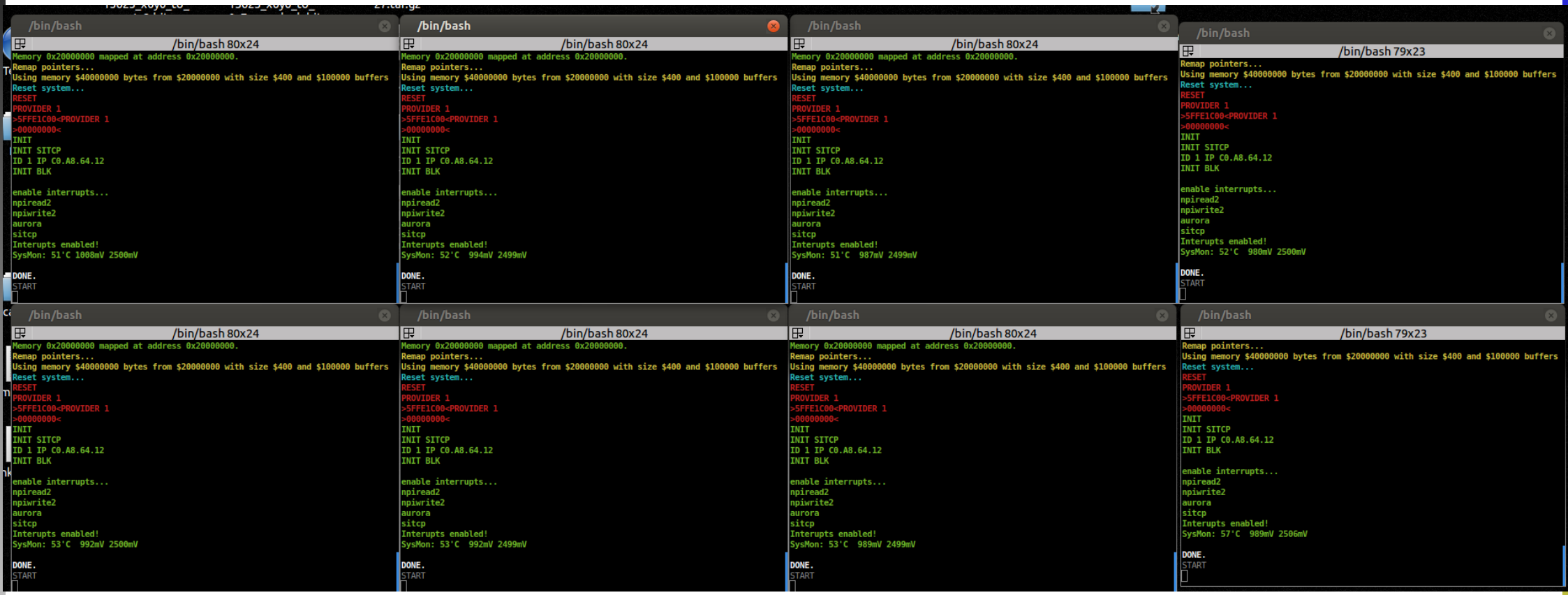






More Meaningless Screenshots

The output of the 8 IOCs on the AMC boards (by ssh)



Problems

- No NSM (yet)
- If one board drops out unexpectedly, the main RC will not notica as the disconnected PV will have no influence on current state
  - When it comes back, should it automatically advance to state of other boards?
  - At least one can by do it hand now w/o/ resetting all boards.
  - Important for tests.