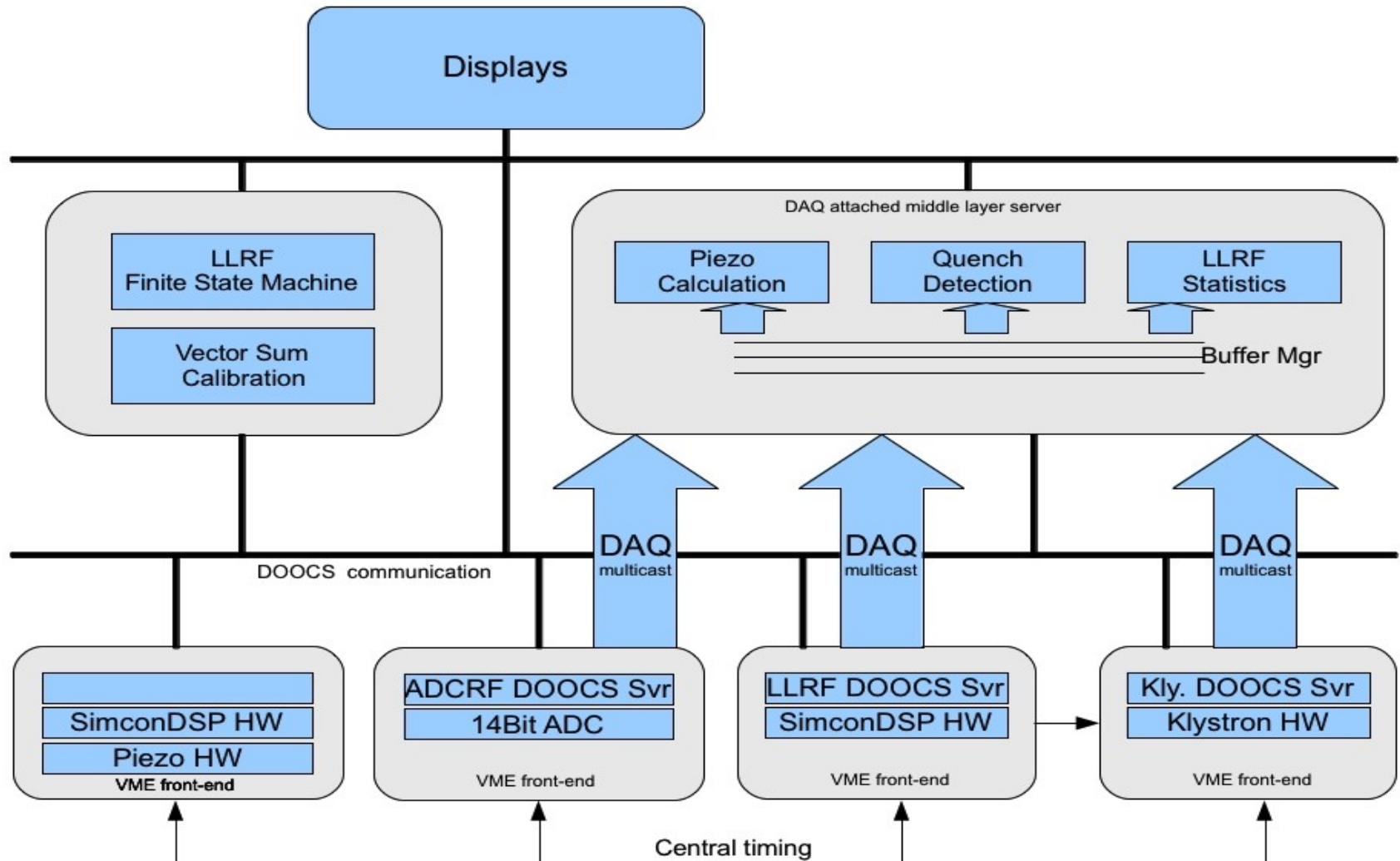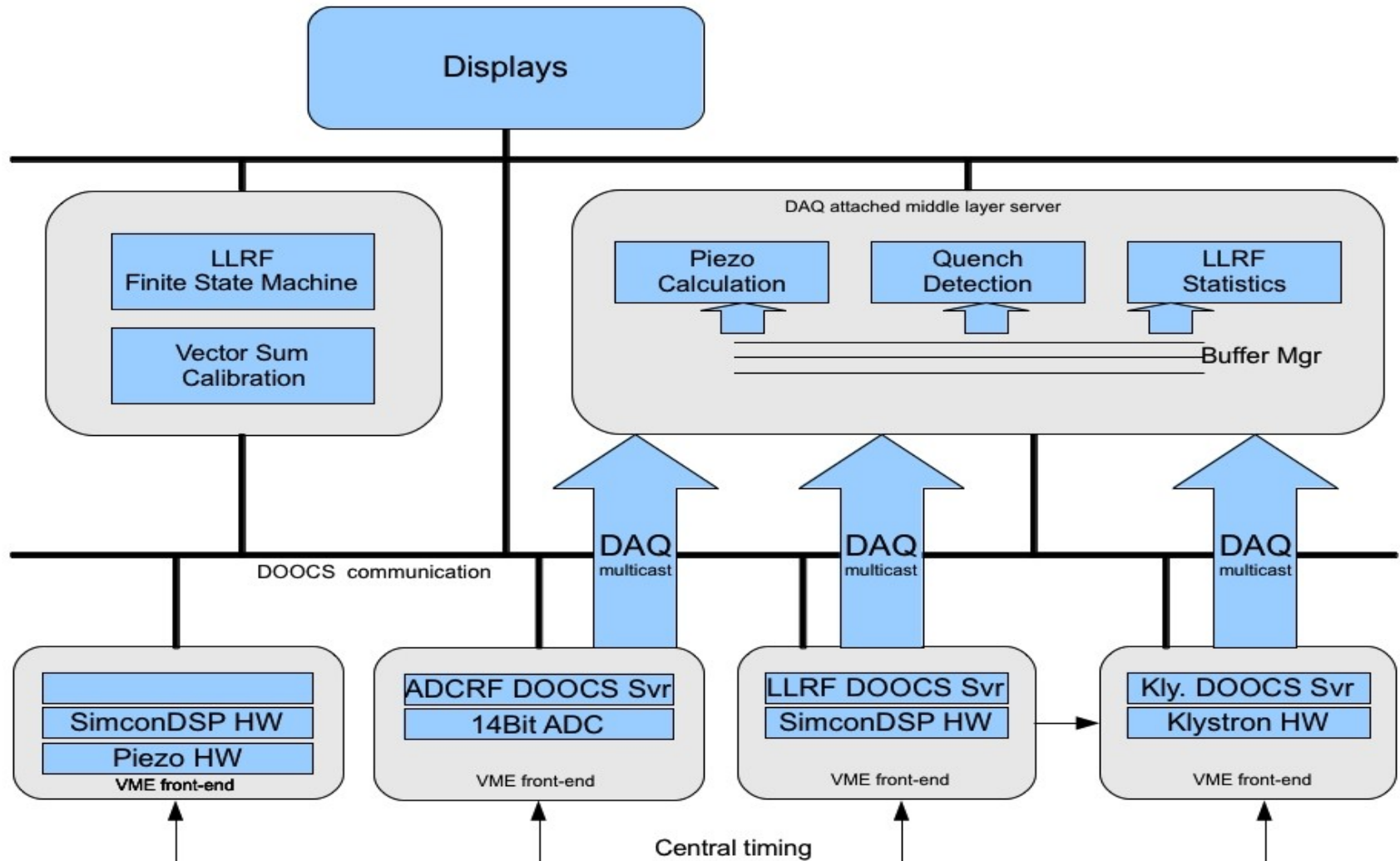# Quench Detection @ FLASH

Olaf Hensler

DESY - MCS

- Quench Detection server runs attached to the DAQ Shared Memory
- Calculates Qloaded just after the Flattop end
  - Over 100 samples (Property)
- Build a mean of Qloaded over 10 pulses
- Quench is detected, when Qloaded has a sharp drop
  - By 500000 (Property)
- Switches off the RF via the RF FSM
- Sends messages to the Alarm&Info system

- Known problems :
  - Never really commissioned
  - Pulse length cut from cavity limiter not detected reliable

- Next Steps : Tests at CMTB

DOOCS server

| Cryo Intl |
| Coupler Vac |
| Coupler Intl |

Check
Check
Check/Reset

| Klystron Svr |

Switch ON
Check Filament

| LLRF Statistics Qloaded/Detuning |

Check

| Quench Svr |

Check

RF FSM

Run @ 2Hz

tripaction():
- Blocks laser
- Switch off LFF
- Switch off FB
- Switch off FF
- Amplitude to zero

DOOCS server

LLRF Controller

Status

Check

FeedForward (FF)

Switch ON

Amplitude

recover

FF Output Matrix

tune

FB Output Matrix

Switch ON

FeedBack (FB)

tune

Learning FF

Switch ON

Quench Detection based on DAQ