

EPIC-pn spare camera chain: status and prospects

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Operations and Instrumentation

Leicester 06.03.2012

Status

- EPEA, EPVC, EPCE are stored at Panter in Neuried
- Harness stored at Panter
- EPCH is stored at HLL
- EPDH and EGSE stored at IFCTR (I assume)

What we need to properly operate EPIC-pn spare camera chain?

- Vacuum chamber for camera head
- X-ray source inside vacuum chamber
- Cooling system for CCD
- All other boxes could be operated outside of vacuum vessel

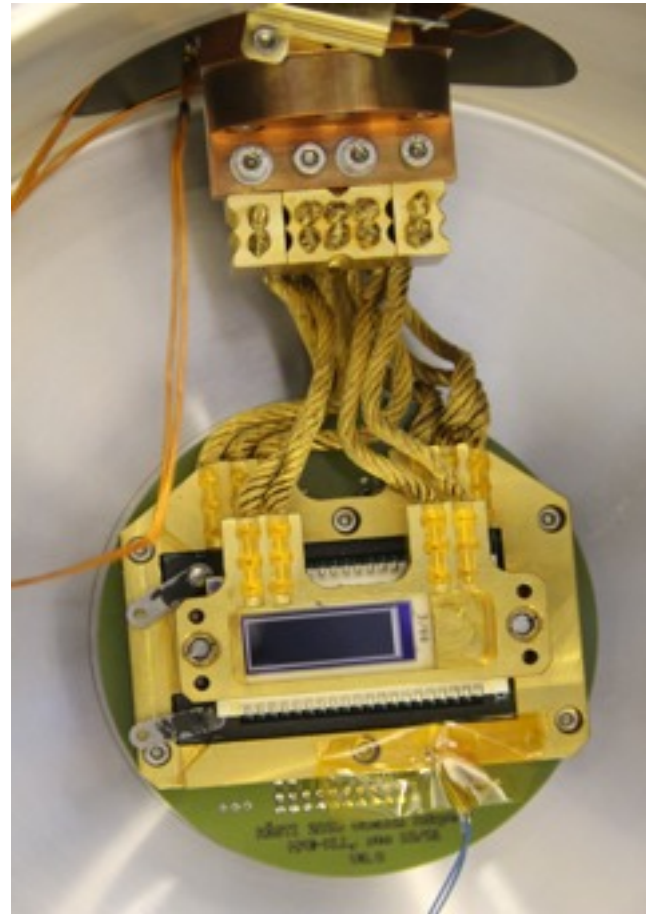
Where could we integrate and operate EPIC-pn spare camera chain?

- MPE is totally busy with eROSITA
 - Panter and Rösti are not available
 - Other vacuum chambers are occupied
- IAAT could partially do the job
- Lab space (~20 m²) and personnel (E.Ke & TBD)
- BUT:
 - NO free vacuum chamber
 - NO free clean room, only clean benches
 - It does not make sense to operate EPCH at IAAT

Heritage from last decade

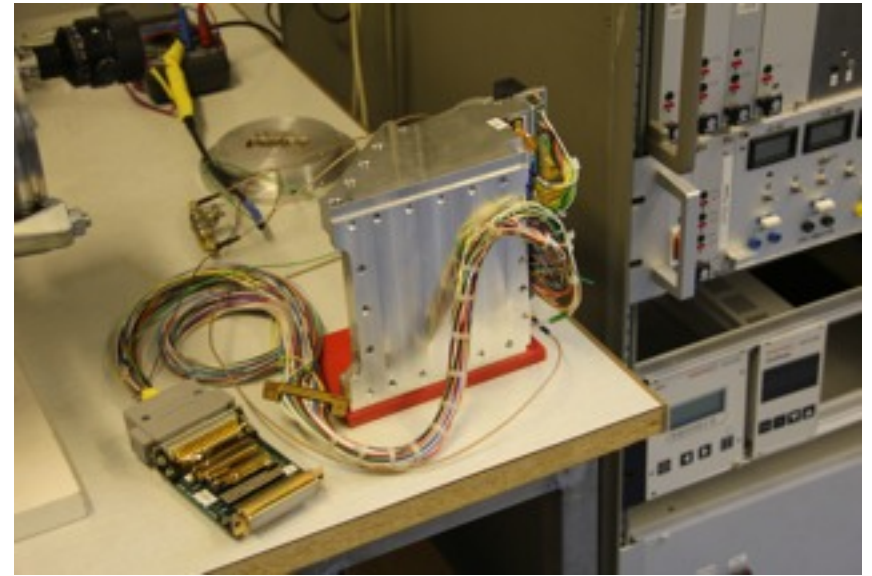
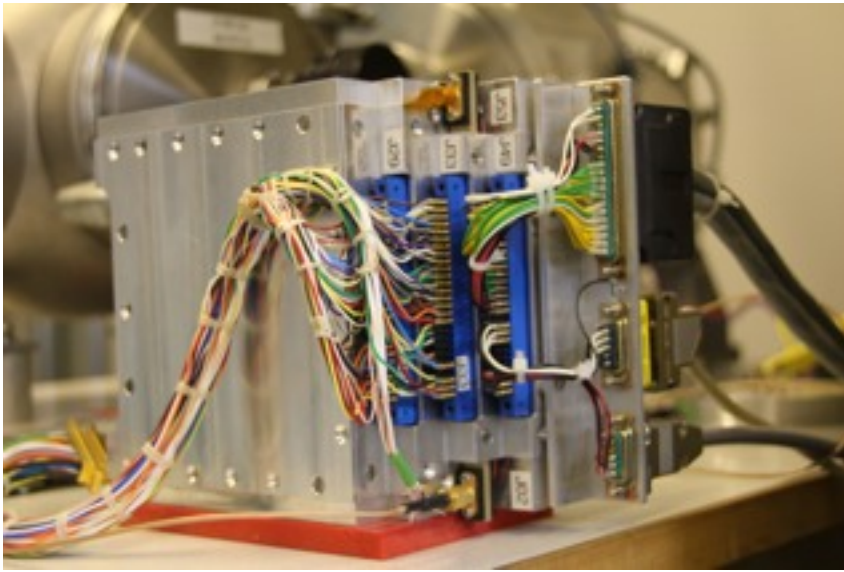


Vacuum chamber and cooling system for one pn-CCD



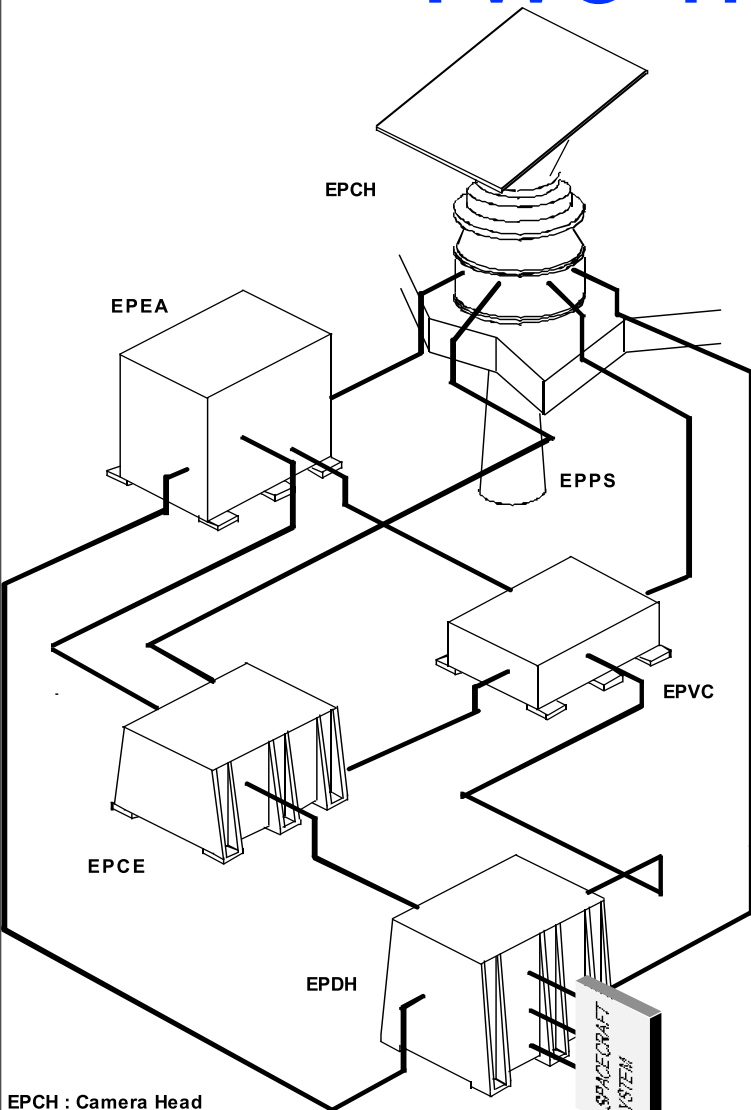
pn-CCD (64 x 200 pixels)

Spare Quadrant Electronics (QE)

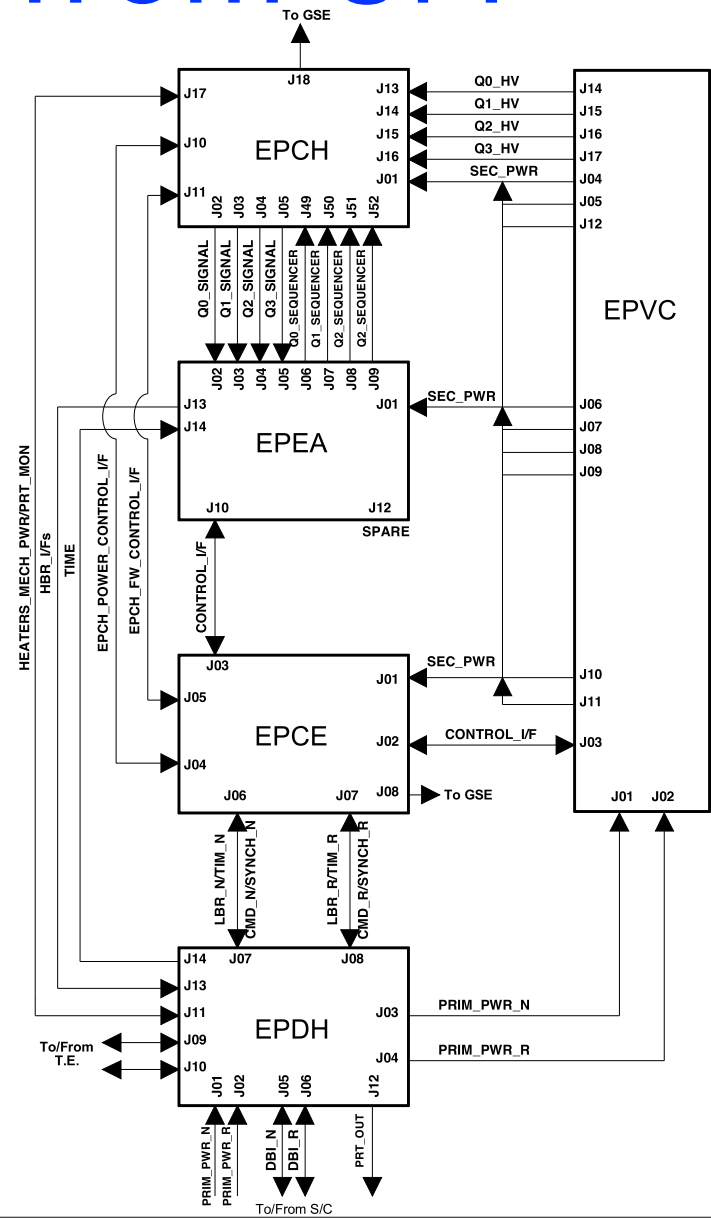


QE with original FS electronic boards, QE with connector for test CCD was used to operate pn-CCD

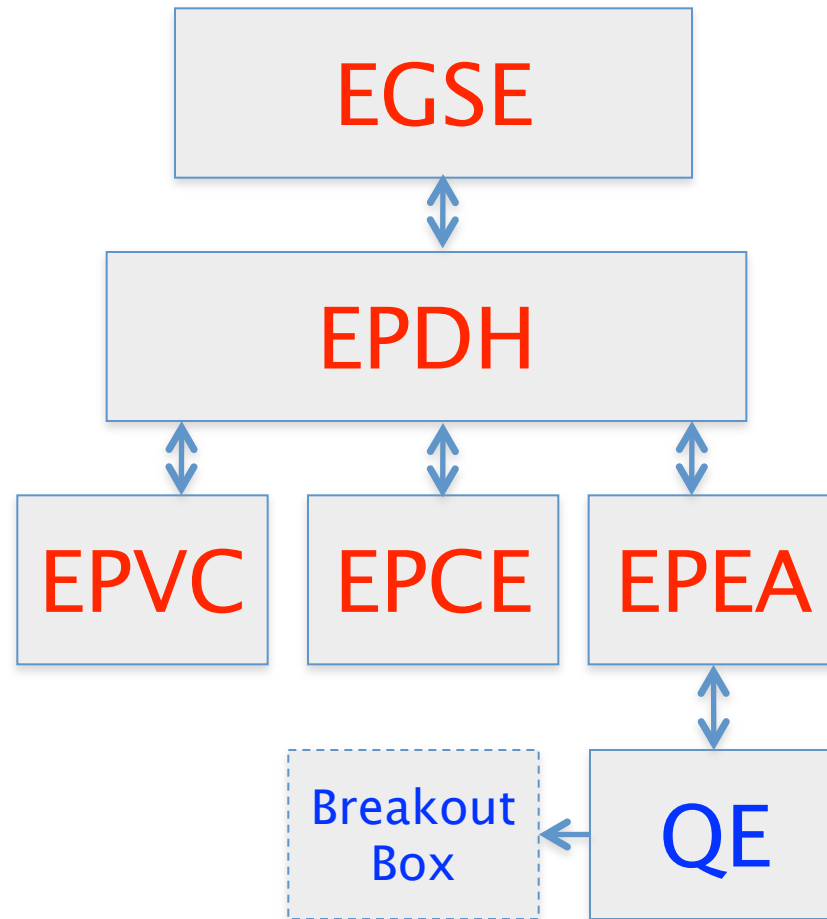
Two figures from UM



EPCH : Camera Head
 EPCE : Control Electronics
 EPEA : Event Analyser
 EPDH : Data Handling
 EPVC : Voltage Converter
 EPPS : Proton Shield



Proposed set-up (simplified)



What can be done with this set-up

- All commands and housekeeping (HK) to/from
 - EPDH, EPVC, EPCE and EPEA
 - Upload of new software
 - Download of test patterns
- Operation of one quadrant
 - Command and HK of all CAMEX and CCD quadrant voltages
 - Switch on and off of CCD quadrant
 - Commanding of all readout modes

What can NOT be done

- NO operation of real CCD
 - No real event data
 - No calculation and download of offset/noise maps
 - No CCD temperature
 - No operation and status info of filter wheel

Next steps

- Decide if we go ahead with this proposal (during this meeting)
- Compile list of commands and HK parameters which are not available (E.Ke)
- Agree on schedule
- Ship equipment to IAAT
- Get spare chain running