



EUROPEAN
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Detector Readout for ESS Instruments

An overview

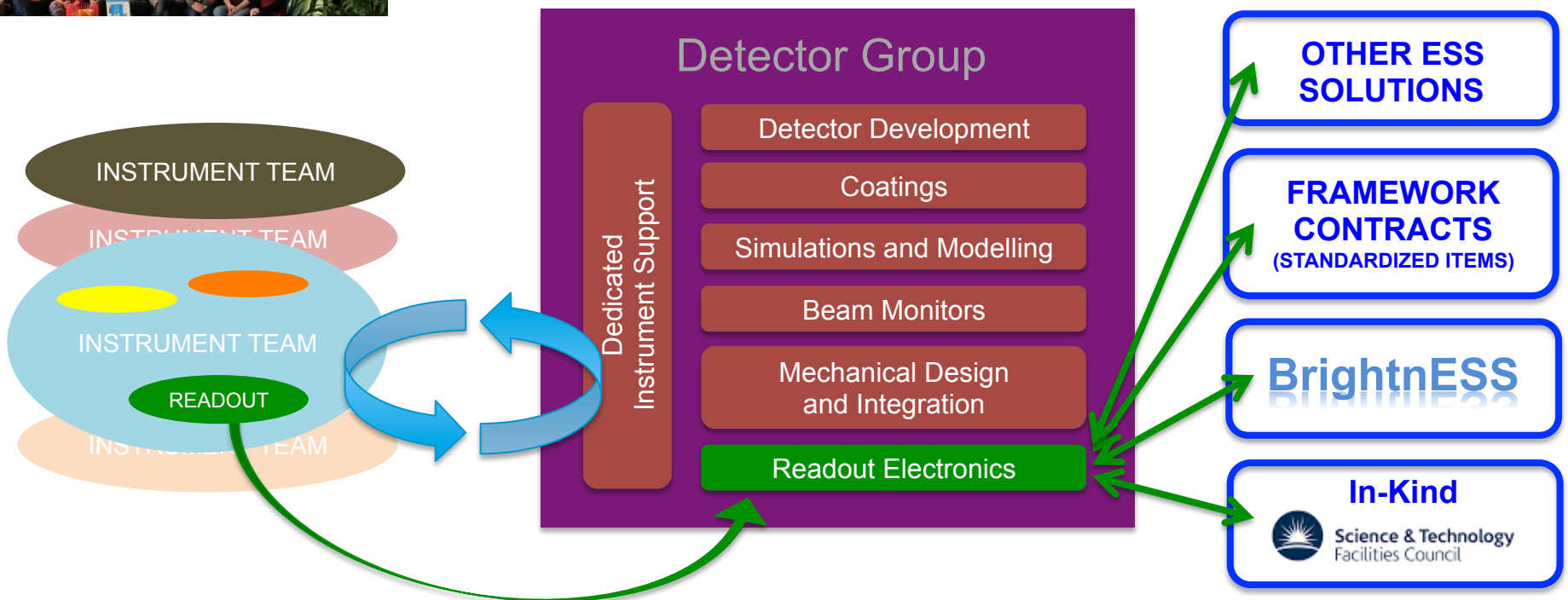
Scott Kolya
IKON-13
28th Sept 2017

“Who are you, and how can you help me?”

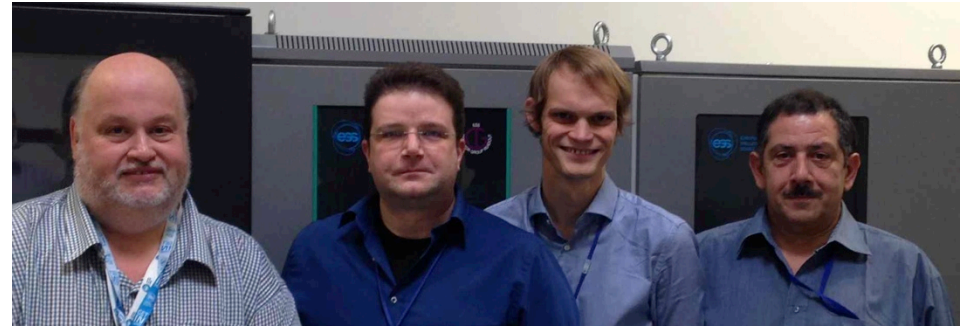
Detector Group is here to help you with all things related to Detectors



The readout team provide standardized solutions and help with electronics integration



Readout Team – ESS and In-Kind



Scott Kolya - Team Leader
George Gimas – Technician

Steven Alcock – FPGA Engineer
Paul Spiteri – Technician

ESS Vacancy – FPGA/Software Engineer

STFC Vacancies – two or three FPGA/Software Engineers (at either site) (Band E or F)



Harry Walton - FPGA Engineer
James Edwards – FPGA Engineer

Maged Sallam – Junior Engineer
Isa Uzun – Lead Engineer



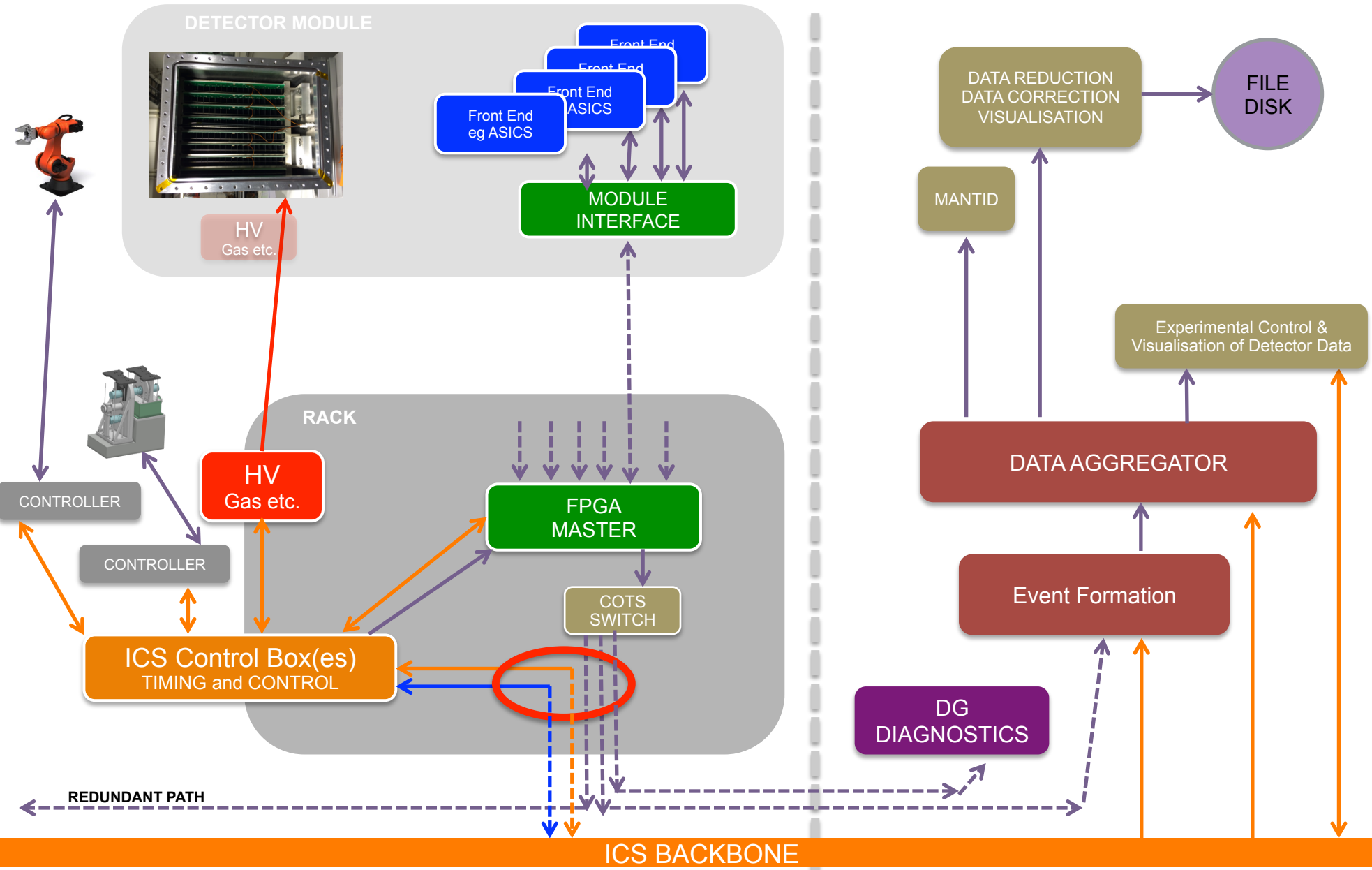
Detector Baseline for Early Instruments

Instrument	Installation Start (est.)	Lead Institute	DG Contact	Main Detector Technology	Main Detector Developer	Front End Readout	FE Readout Developer	Integration Model
LOKI	Q4 2019	ISIS	Kalliopi Kanaki	BandGEM	Milan	Gemma/Gemini	Milan/INFN	C
NMX	Q1 2021	ESS	Dorothea Pfeiffer	Gd-GEM	CERN/ESS (BrightnESS)	VMM	CERN/ESS (BrightnESS)	A
ODIN	Q4 2019	TUM/PSI	Richard Hall-Wilton	MCP, Silicon, etc	Lots	Lots	Lots	XX
BEER	Q1 2020	HZG/NPI	Irina Stefanescu	A1CLD, AmCLD	HZG/DENEX	Delay Line	HZG/DENEX	Probably C
SKADI	Q1 2021	FZJ	Ramsey Al Jebali	SoNDE Pix Scinit	SoNDE	IDEAS ASIC	SoNDE	Probably B/C
DREAM	Q4 2019	FZJ	Irina Stefanescu	Jalouise	Julich/CDT	CIpix	Julich/CDT	C
ESTIA	Q4 2019	PSI	Francesco Piscitelli	Multi-Blade	Wigner/ESS (BrightnESS)	VMM	ESS Led (IK + BrightnESS)	A
C-SPEC	Q4 2019	TUM	Anton Khaplanov	Multi-Grid	ILL/CERN (BrightnESS)	VMM	ESS Led (IK + BrightnESS)	A
BIFROST	Q2 2020	DTU	Richard Hall-Wilton	He3 Tubes	Commercial	Commercial?	Commercial?	Probably X
HEIMDAL	Q3 2021	AU(DK)	Richard Hall-Wilton	WLS-Scinti	Unknown	??ASIC?	Unknown	Probably B
FREIA	Q1 2023	ISIS	Francesco Piscitelli	Multi-Blade	Wigner/ESS (BrightnESS)	VMM	ESS Led (IK+ BrightnESS)	A
T-REX	Q4 2021	Julich	Anton Khaplanov	Multi-Grid	ILL/CERN (BrightnESS)	VMM	ESS Led (IK+ BrightnESS)	A
MAGIC	Q1 2020	LLB	Irina Stefanescu	Jalouise	Julich/CDT	CIpix	Julich/CDT	C
MIRACLES	Q3 2022	ESS-B	Richard Hall-Wilton	He3 Tubes	Commercial	Commercial?	Commercial?	Probably X
VESPA	Q2 2022	CNR	Richard Hall-Wilton	He3 Tubes	Commercial	Commercial?	Commercial?	Probably X
TEST BEAMLIN	Q1 2019	ESS	Richard Hall-Wilton	Camera	Commercial	Proprietary	Unknown	Probably XX

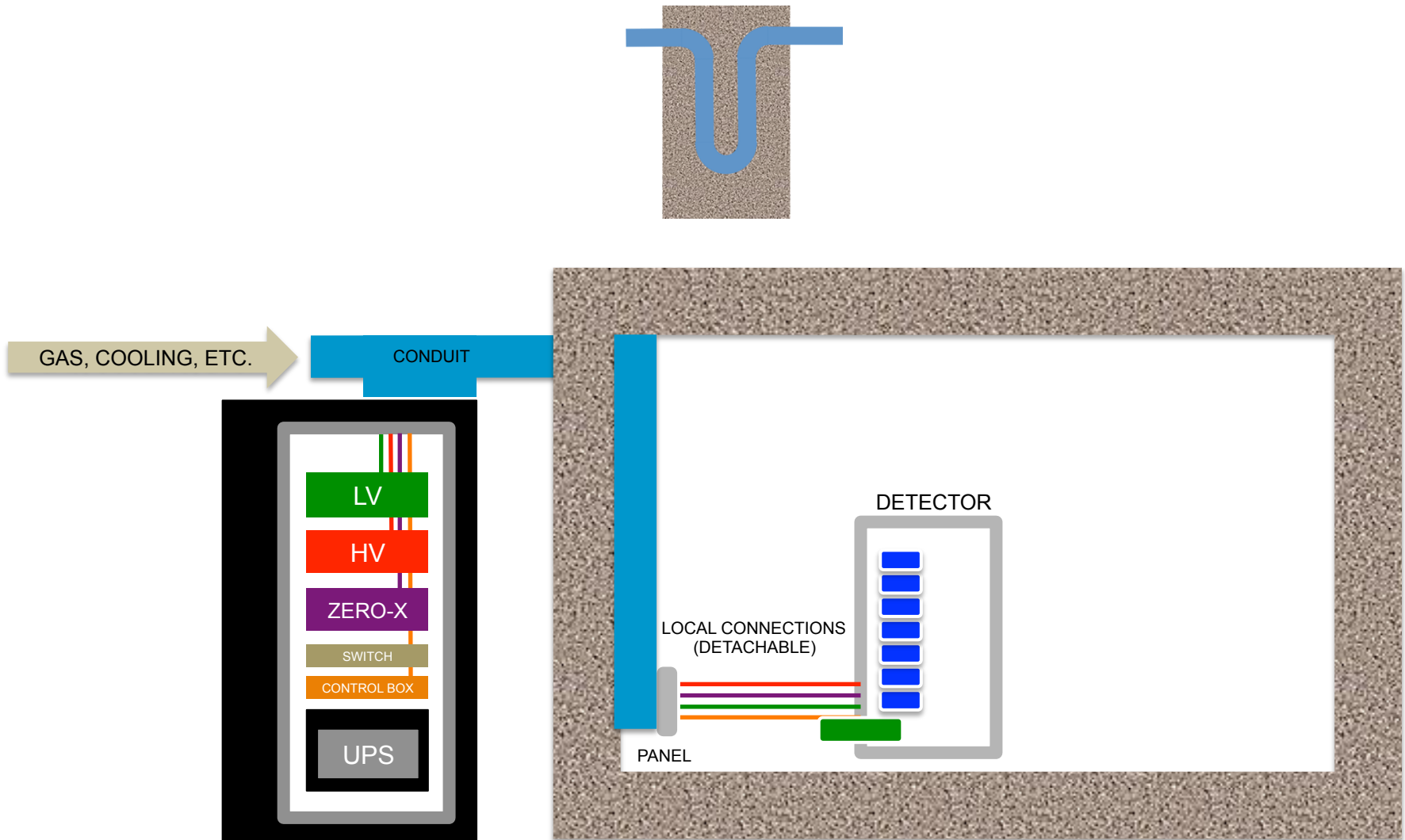
Detector Electronics Integration Models



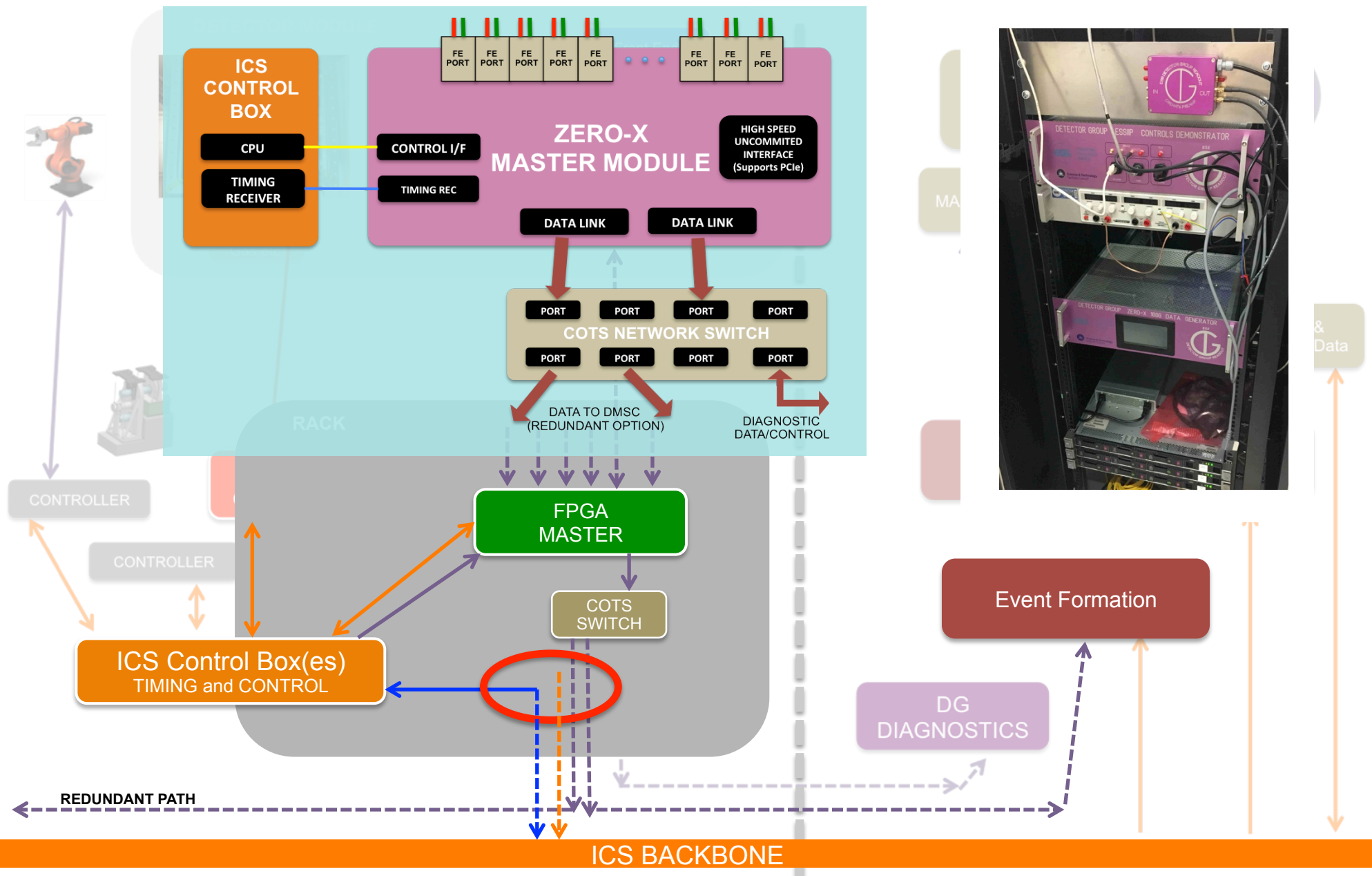
ESS Instrument Readout (Detector Perspective)



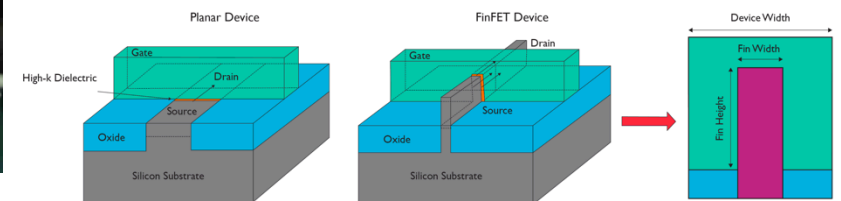
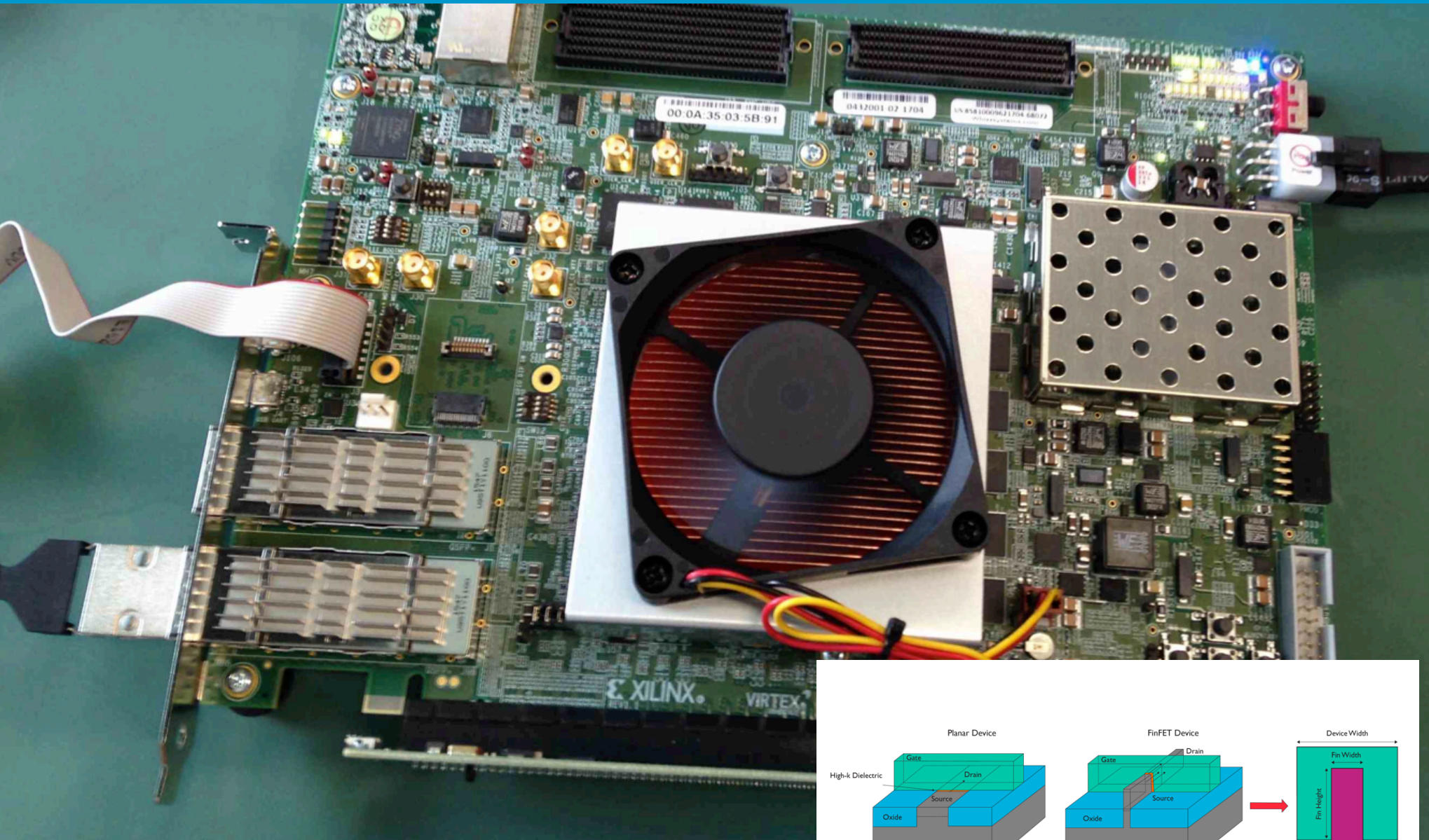
Physical Implementation



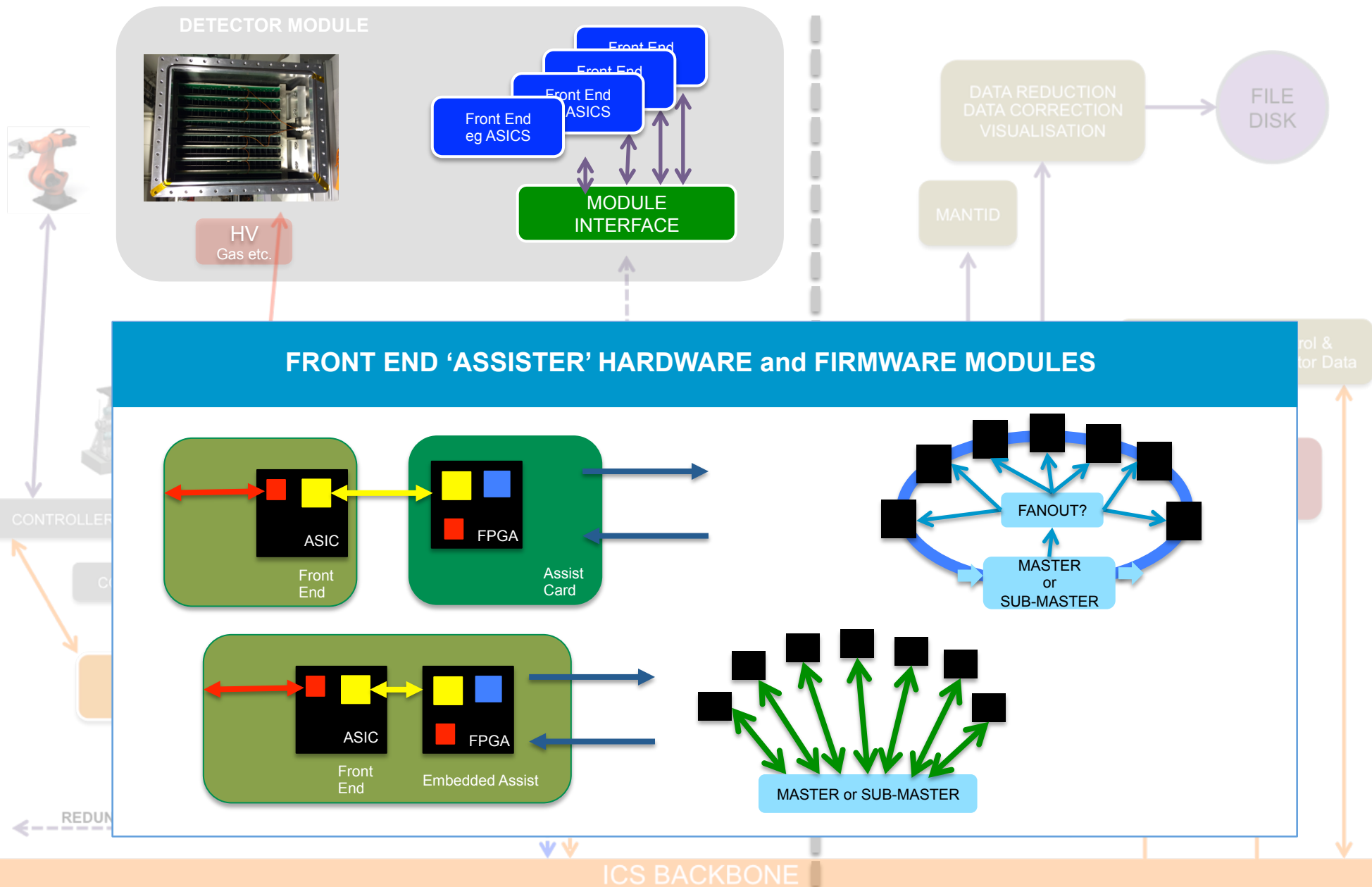
Back End Demonstrators



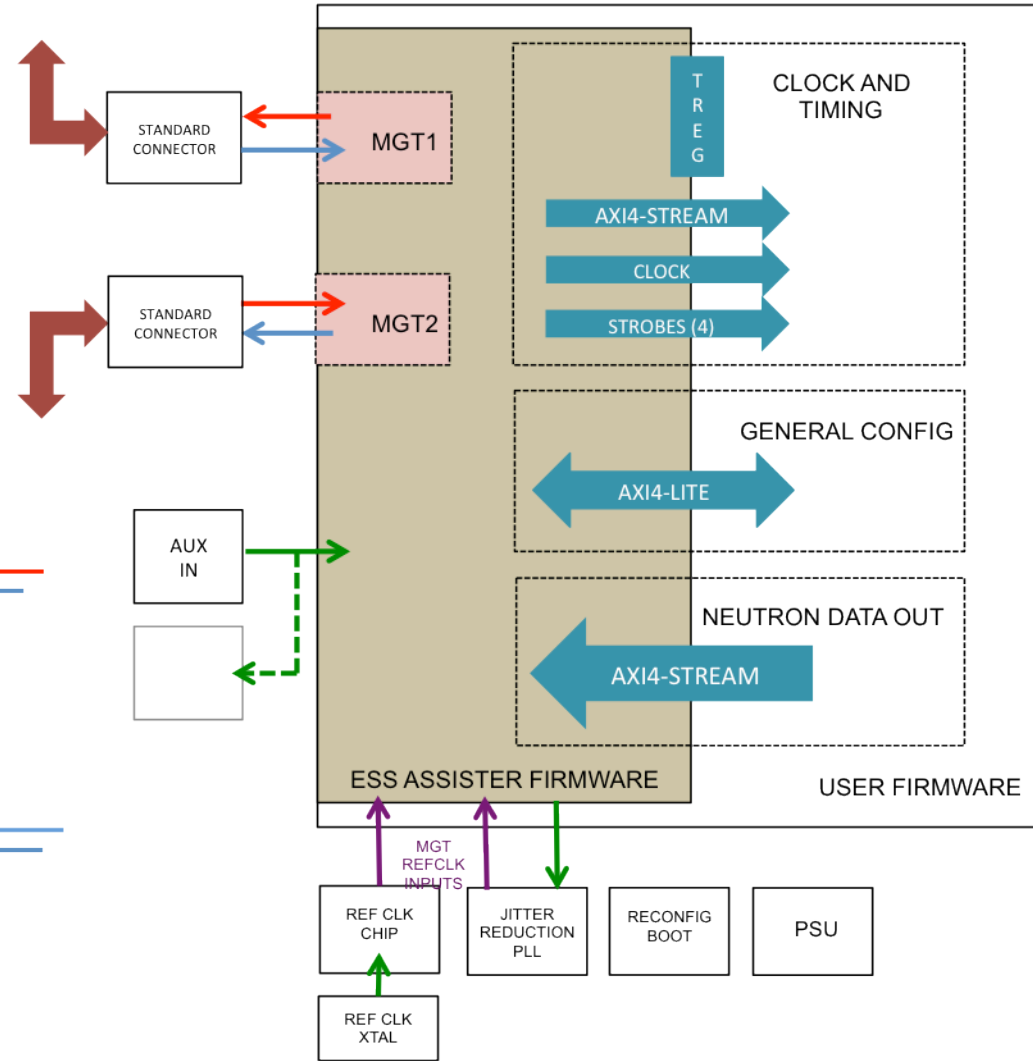
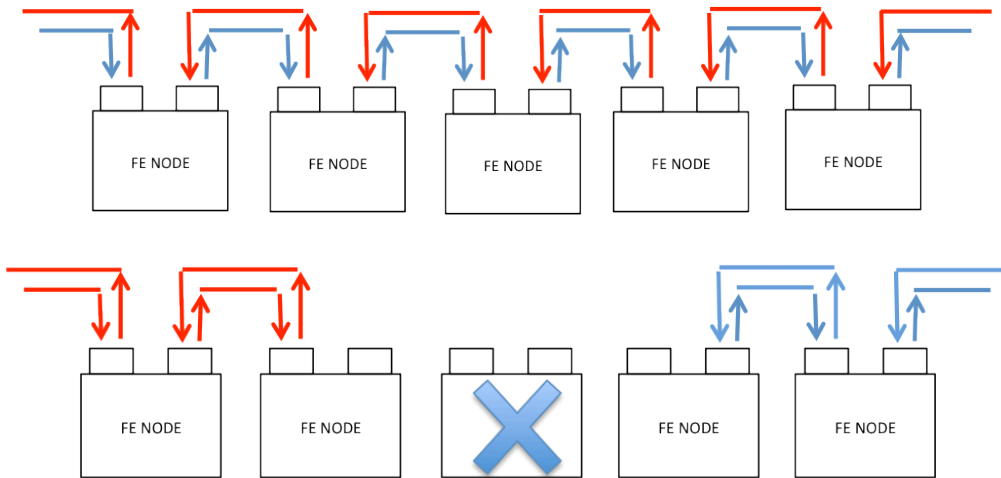
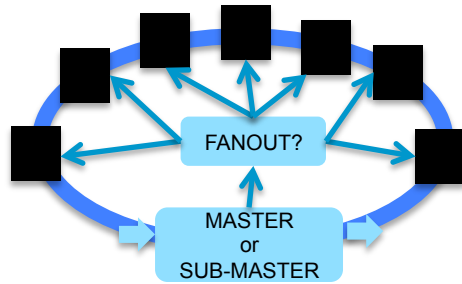
ESS Local Electronics Facilities



Front End Integration



Front End Rings



Front End Stakeholder Meeting

<https://confluence.esss.lu.se/display/DG/Detector+Readout>

<https://doodle.com/poll/3pw8upn7hched8>

scott.kolya@esss.se



Meeting on front end readout integration. Technical discussion of options for bringing existing readout into ESS, details of standard generic modules that will be available, and a chance for stakeholders to give feedback on what they would like the standard system to provide.

You should send you technical people!!





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**Thank you for
your attention!**