2021-08-10 Detector Planning Meeting notes

Attendees

- McKelvey, Mark E
- Philip Hart
- Kazutaka Nakahara
- Conny Hansson
- Bhavna Nayak
- Chris Koerber

Goals

- Set and status planning activities for detector development and deployment.

Discussion items

Time	Item	Who	Notes
10 min	Beamtime support update		▪ ePix10k timing test opportunity?

30 min	Priorities Review	All	• **2021 events:**
			  ○ **Projects new starts:**
			  ▪ **ePixM project plan submitted, baselined in P6.**
			  ▪ **SparkPix-S Phase II (**full-size ASIC for sparsification engine), on-track
			  ▪ **ePixHR V: Prototype detector project underway, TID reminded, check back in week.**
			  ▪ **TXI Detectors (**2Mp and 140kp based on ePixHR @5kHz**) Instrument CDR yesterday, wafer purchase stuck in procurement.**
			  ▪ **ePixUHR (**130nm TSV structure to reach 100kHz**), CDR completed, PEC approved start, project underway.**
			  ○ **Production:**
			  ▪ **spare modules** (0.5 & 1mm) Module order in work, new sensor order delayed. No-ghost modules delayed to October.
			  ▪ **Approved 3d copy of ePix10k2m: underway, November delivery (may slip due to module delay)**
			  ▪ **Approved spare quads for MEC: underway, August delivery(?)**
			  ▪ **Proposed in-air 2m/1mm project plan submitted to OIP.**
			  ▪ **Proposed UED detector upgrade, planning in work.**
			  ▪ **Proposed ePix10k4m (concept)**
			  ○ **RIXS-CCD/cooler test and verification: Flatness test complete, cooling jacket at STA today...ship end of week???? Readiness?**
			  ○ **HiZ collaboration tests: Ge and CZT modules wirebonded, CZT no stick, SSRL & LCLS beam times secured, Ge chamber in work.**
			  ○ **Outreach for R&D support (SparkPix-ED, SparkPix Delta).**
			  ○ **SBIR effort for UXI not funded.**
			
			• **Group priorities review:**
			  ○ **Testing**
			  ▪ **Run 'standard' cal on two 10k smalls with new firmware, log tracker.**
			  ▪ **CompEnOn study during CXI checkout time? 111, 1a vs 19?**
			  ▪ **Any ePix100 detectors in ASC? Can we figure out what's wrong with ePix100/7?**
			  ▪ **RIXS-CCD cooler test planning.**
			  ○ **Analysis**
			  ▪ **Gather and process relevant commissioning data for Mp travellers on Confluence.**
			  ○ Solid pedestals
			  ○ Noise map
			  ○ Response uniformity (mini-X cu-fluorescence)
			  ○ Bootstrap gain (sealed source)
			  ○ Linearity (signal injection)
			  ○ **Documentation**
			  ▪ **Complete on-line travellers for Mp detectors**
			
			  ○ **Development**
			
			  ○ **Lab 'commissioning'**
			  ▪ **DAQ**
			  • **Storage nodes configured, put in use?**
			  • **LCLS I/II compatibility?**
			  ▪ **Chase racks anchored....cables, water status?**
			  ▪ **Vac chamber for in-lab tests? Compatible with XPP alcove?**
			
			Actions:

30 min	Status		Sales call with XCAM yesterday, no really appealing solutions there but they do have some Peltier cooled systems that don't meet our requirements for speed or pixel size and would require NRE to get there. Self-assessment period closed....thanks. Will schedule discussions. Cal team meet ton Friday?? LDAC Panel assembled KN: • Rayonix preparing for ship/repair. • XPP is set up with 4 ePix100 and 0.5m JF • de-cable JF4m for move • LCLS-II DAQ not fully operational in ASC....needs resolution • Spare JF Power supply received, need cold plate. • MPOD? PH: • ePix10k switching issues.....noise much higher in FoLo. • Working w/B to improve pedestals, sharing data with Gabriel. • UXI IH put in for Run20....could let us offer UXI for user experiments?? CH: ▪ Got ePix assembly bracket...can try to run zombie masking ASICs looking for configurable mode. ▪ CZT guy is back from vacation....will try to have him fix contact. ▪ No word from Stephen Boo...need update. ▪ Starting linearity characterization using MFX data. RA: ▪ Prepare for mid-july RIXS-CCD ▪ Lost Derek, may need May Ling to help training on laser vibrometer ▪ Need mtg for acceptance test planning (Friday) BN: • Looking at FoLo data, still tryng to parse/understand • Went through fluorescence process. • Min/max stitching. • Run cal on new ePix firmware. • Grafana setup to alert Slack channel. • Made updates to detector website, in work. • Working with PH on porting PyRoot to Python. CK: • Setting up vac components for RIXS-CCD. • Trying to get cables complete for CSPD/CXI • Trying to move water/power effort in chase. • Lesker chamber quote in work. • Order/borrow Variac.

5 min	Budget Update	mmck	• M&S Status (Through July)

WBS3_DESC	PA Proj_Act	PA Activity_Desc	LSTM Desc	Values KCST BA 1.1	ACTUALS	Remaining Balance
Distributed Support	10918-A4001	DET Dist Exp Support	M&S	$0	$0	$0
Distributed Support	16152-A4001	ePix Support	M&S	$63	$23	$40
Distributed Support	16158-A4001	Other Detector Support	M&S	$13	$1	$12
Distributed Support	16253-A4001	C-S PAD Support	M&S	$6		$6
Distributed Support	18303-A4001	Jungfrau Support	M&S	$11		$11
Management	16287-A4001	DET Department Management	M&S	$11	$9	$3
Research	16826-A4001	DET Department Research	M&S	$57	$25	$32
Infrastructure and Development	16159-A4001	DET Dept Infrastruct & Dev	M&S	$137	$144	($7)
DET Program	17341-A4001	Detector Program Management	M&S	$0	$1	($0)
Operations Improvement Project	17439-A4001	DET Department OIP Projects	M&S	$40	$40	$0
				339	242	$97

• Labor snapshot (July actuals):

WBS3_DESC	PA Proj_Act	PA Activity_Desc	LSTM Desc	Values KCST BA 1.1	ACTUALS	Remaining Balance
Distributed Support	10918-A4001	DET Dist Exp Support	Shop Services	$82		$82
Distributed Support	10918-A4001	DET Dist Exp Support	SLAC Labor	$13	$3	$10
Distributed Support	16152-A4001	ePix Support	Shop Services	$53	$23	$30
Distributed Support	16152-A4001	ePix Support	SLAC Labor	$3	$55	($51)
Distributed Support	16158-A4001	Other Detector Support	Shop Services	$23	$40	($17)
Distributed Support	16158-A4001	Other Detector Support	SLAC Labor	$125	$82	$43
Distributed Support	18303-A4001	Jungfrau Support	Shop Services	$3		$3
Management	16287-A4001	DET Department Management	Shop Services	$15	$3	$12
Management	16287-A4001	DET Department Management	SLAC Labor	$275	$265	$10
Research	16826-A4001	DET Department Research	Shop Services	$5		$5
Research	16826-A4001	DET Department Research	SLAC Labor	$211	$134	$77
Infrastructure and Development	16159-A4001	DET Dept Infrastruct & Dev	Shop Services	$106	$132	($26)
Infrastructure and Development	16159-A4001	DET Dept Infrastruct & Dev	SLAC Labor	$352	$463	($112)
DET Program	17341-A4001	Detector Program Management	SLAC Labor	$223	$181	$42
DET Program	17778-A4001	Very Fast CCD	Shop Services	$14	$17	($3)
L2S-I Program	19733-A4001	L2S-I-DET-Project Management	SLAC Labor	$25	$19	$6
Operations Improvement Project	17439-A4001	DET Department OIP Projects	Shop Services	$25		$25
Operations Improvement Project	17439-A4001	DET Department OIP Projects	SLAC Labor	$55	$55	($1)
				1606	1471	$135

15 min	Review ASC First Projects	all	Coordinate/update lab schedule.
10 min	Any other business		

Action items: