2021-03-30 Detector Planning Meeting notes

Attendees

- McKelvey, Mark E
- Philip Hart
- Kazutaka Nakahara
- Rebecca Armenta
- 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		- Detector readiness: - Update DAQ/fw for 10k smalls - Return ePix100#7 for repair? - Receive/test ePix100 spares and side-look 1mm ePix10k - Baseline JF and 2M 'traveller' pages on Confluence. - Collect and analyze any remaining in-lab test data.

30 min	Priorities Review	All	

- **2021 events:**
  - **Projects new starts:**
    - **VFCCD/ePixM downselect implementation of REXS for 2.2 - April 28-30**
      - **Panel charge draft finalized, panel set, website set up.**
    - **SparkPix-S Phase II (**full-size ASIC for sparsification, Tixel-based, underway)
    - **ePixHR IV: Prototype detector project underway**
    - **TXI Detectors (**2Mp and 140kp based on ePixHR @5kHz**) CDR Closed out, project underway.**
    - **ePixUHR (**130nm TSV structure to reach 100kHz**), planning**
  - **Production:**
    - **spare modules** (0.5 & 1mm) Module order in work, new sensor order out
    - **Approved 3d copy of ePix10k2m: underway, November delivery**
    - **Approved spare quads for MEC: underway, August delivery**
    - **Proposed in-vac ePix10k2m for CXI: Cost estimate submitted, awaiting approval**
    - **Proposed ePix10k4m (concept)**
    - **Proposed UED detector upgrade (**2kHz, 125um sensor, concept**)**
  - **RIXS-CCD/cooler test and verification: Conflat/bellows delayed to 4/26, not on critical path**
  - **HiZ collaboration tests (IH secured, plans circulated to collaboration partners), met w/SSRL, LoI needed**
  - **Outreach for R&D support (SparkPix-ED, SparkPix Delta).**
  - **Support effort for LCLS-II-HE instruments (performance verification/implementation planning)**
  - **SBIR effort for UXI.**

- **Group priorities review:**
  - **Testing**
    - **Setup ePix10k, ePix100, JF smalls for test in lab, Bhavna/Chris hands-on trng. Days this week?**
    - **Review with TID the stitching progress, look for improvements. First cal team last week, follow up this week.**
    - **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 received installed, configured this week?**
      - **LCLS I/II compatibility?**
    - **BIO for racks in chase (Chris to take over hounding)**
    - **Vac chamber for in-lab tests? Compatible with XPP alcove?**

Actions:

30 min	Status		IFDEPS Virtual Thursdays
			LDAC Panel assembled (waiting on Kuster)

IFDEPS Virtual Thursdays

LDAC Panel assembled (waiting on Kuster)

CH:

- ePix10k #1 has been tested, looks ok
- pyROOT for per-pixel spectra
- Synchrotron.

RA:

- Meeting w/PD tmrw, camera.
- Need bake-out variac for lab.

KN:

- Rayonix still cranky trigger, may be DAQ-related
- Spare JF Power supply received, need cold plate.
- UED MPOD?
- Rayonix has two bad tiles, too close to experiment to fix.

PH:

- MFX 10k calibration with hockey stick has been refined slightly..2% of pixels have noisy first switch, need more uptime to test.
- UXI IoC update, need help from Dan to run in the lab.

BN:

- Made updates to detector website, in work.
- working with PH on porting PyRoot to Python.

CK:

- Ge chamber assembly
- Order variac
- New pin-out probes
- XPP having trouble with pgp server hat runs 2M.
- CXI fiber 450uW becomes 50-60uW, defect in port feedthrough sometime limits to 2uW(?), replacement flanges on order (8-9 weeks).

| | | | 5 min | Budget Update | mmck |
| | | | | | |

- M&S Status (Through December)

PA Proj_Act	PA Activity_Desc	LSTM Desc	Values KCST BA 1.0	ACTUALS	Remaining Balance
10918-A4001	DET Dist Exp Support	M&S		$0	($0)
16152-A4001	ePix Support	M&S	$61		$61
16158-A4001	Other Detector Support	M&S	$12	$0	$12
16253-A4001	C-S PAD Support	M&S	$6		$6
18303-A4001	Jungfrau Support	M&S	$12		$12
16287-A4001	DET Department Management	M&S	$4	$4	$0
16826-A4001	DET Department Research	M&S	$58	$9	$49
16159-A4001	DET Dept Infrastruct & Dev	M&S	$134	$14	$121
17439-A4001	DET Department OIP Projects	M&S	$22	$40	($18)
			$310	67	$243

- Labor snapshot (December actuals):

PA Proj_Act	PA Activity_Desc	LSTM Desc	Values KCST BA 1.0	ACTUALS	Remaining Balance
10918-A4001	DET Dist Exp Support	Shop Services	$134		$134
10918-A4001	DET Dist Exp Support	SLAC Labor	$19	$3	$16
16152-A4001	ePix Support	Shop Services	$77		$77
16152-A4001	ePix Support	SLAC Labor		$3	($3)
16158-A4001	Other Detector Support	Shop Services		$12	($12)
16158-A4001	Other Detector Support	SLAC Labor	$115	$32	$83
18303-A4001	Jungfrau Support	Shop Services	$6		$6
16287-A4001	DET Department Management	Shop Services	$25		$25
16287-A4001	DET Department Management	SLAC Labor	$136	$80	$56
16826-A4001	DET Department Research	Shop Services	$9		$9
16826-A4001	DET Department Research	SLAC Labor	$197	$55	$142
16159-A4001	DET Dept Infrastruct & Dev	Shop Services	$63	$55	$7
16159-A4001	DET Dept Infrastruct & Dev	SLAC Labor	$264	$92	$172
19775-A4001	Commissioning - DET	Shop Services			
17341-A4001	Detector Program Management	SLAC Labor	$330	$54	$276
17778-A4001	Very Fast CCD	Shop Services		$8	($8)
19733-A4001	L2S-I-DET-Project Management	SLAC Labor		$5	($5)
17439-A4001	DET Department OIP Projects	Shop Services	$48		$48
17439-A4001	DET Department OIP Projects	SLAC Labor	$57	$22	$35
			1479	423	$1,056

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

Action items: