

2021-02-16 Detector Planning Meeting notes

Attendees

- [McKelvey, Mark E](#)
- [Philip Hart](#)
- [Kazutaka Nakahara](#)
- [Zimmerman, Kayla](#)
- Rebecca Armenta
- Conny Hansson
- Bhavna Nayak

Goals

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

Discussion items

Time	Item	Who	Notes
10 min	Beamtime support update		<ul style="list-style-type: none">• Covered in Monday's meeting, Chris to take over from Kayla• Detector readiness:<ul style="list-style-type: none">◦ 2m.1 back at MFX◦ Quads back at MEC◦ New HV module received....return ASC unit to XCS?◦ Return ePix100#7 for repair?◦ Receive/test ePix100 spares and side-look 1mm ePix10k◦ Baseline JF and 2M 'traveller' pages on Confluence.<ul style="list-style-type: none">▪ Collect and analyze any remaining in-lab test data.

30 min	Priorities Review	All	<ul style="list-style-type: none"> • 2021 events: <ul style="list-style-type: none"> ◦ Projects new starts: <ul style="list-style-type: none"> ▪ VFCCD/ePixM downselect implementation of REXS for 2.2 - April 28 ▪ SparkPix-S Phase II (full-size ASIC for sparsification, Tixel-based) Has passed PEC ▪ ePixHR IV: Prototype detector ▪ TXI Detectors (2Mp and 140kp based on ePixHR @5kHz) CDR Closed out. ▪ ePixUHR (130nm TSV structure to reach 100kHz) ◦ Production: <ul style="list-style-type: none"> ▪ spare modules (0.5 & 1mm) Module order in work, new sensor order out ▪ Proposed 3d copy of ePix10k2m (pending) ▪ Proposed spare quads for MEC (2) ▪ Proposed in-vac ePix10k2m for CXI ▪ Proposed ePix10k4m ▪ Proposed UED detector upgrade (2kHz, 125um sensor) ◦ RIXS-CCD/cooler test and verification (shipped archon and cooler supply to STA) ◦ HiZ collaboration tests. ◦ Outreach for R&D support (SparkPix-ED, SparkPix Delta). ◦ Support effort for LCLS-II-HE instruments (performance verification/implementation planning) ◦ SBIR effort for UXL. • Group priorities review: <ul style="list-style-type: none"> ◦ Testing <ul style="list-style-type: none"> ▪ Setup ePix10k, ePix100, JF smalls for test in lab ▪ Review with TID the stitching progress, look for improvements (meeting 2/23) ▪ Can we figure out what's wrong with ePix100/7? ▪ RIXS-CCD cooler test/ship plan ◦ Analysis <ul style="list-style-type: none"> ▪ Gather and process relevant commissioning data for Mp travellers on Confluence. <ul style="list-style-type: none"> ◦ Solid pedestals ◦ Noise map ◦ Response uniformity (mini-X cu-fluorescence) ◦ Bootstrap gain (sealed source) ◦ Linearity (signal injection) ◦ Documentation <ul style="list-style-type: none"> ▪ Complete on-line travellers for Mp detectors ◦ Development <ul style="list-style-type: none"> ▪ RIXS-CCD, review engineering note with w/NEH 2.2 ▪ SXR Downselect prep. May 1? ◦ Lab 'commissioning' <ul style="list-style-type: none"> ▪ DAQ <ul style="list-style-type: none"> • Storage nodes (ordered) • LCLS I/II compatibility ▪ BIO for racks in chase (Chris to take over hounding) <p>Actions:</p>
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30 min	Status	<p>CH:</p> <ul style="list-style-type: none"> • Ran Quad 1 at different biases. Working analysis. • Pedestal scripts not working since last last update. Need Silke's help. Permissions issue? • Need function to pull spectrum (histogram) for each pixel. • MPOD messes up above 200V, goes higher than programmed. <p>RA:</p> <ul style="list-style-type: none"> • Meet re cooling concepts...met with Jim re outside space: not much. <p>KP: JSA summary list circulated</p> <ul style="list-style-type: none"> • XPP/MFX/XCS fibers due this week, other wise need ugly solution. • Small Rayonix testing can be done by others. • XPP/XCS power cable pinout (controls needs to tell us MPOD working) <p>KN:</p> <ul style="list-style-type: none"> • Spare JF Power supply received. • Seb looking for low-intensity diode. • UED MPOD? • Rayonix pressure issue manifold replaced, refilled, monitoring. <p>PH:</p> <ul style="list-style-type: none"> • MEC ran quads this weekend, fixed med was saturating. • MFX 10k calibration with hockey stick has been refined slightly..2% of pixels have noisy first switch, need more uptime to test. • Circular connectors tough to release...special tool? • UX1 IoC update, need help from Dan to run in the lab. <p>BN:</p> <ul style="list-style-type: none"> • Made updates to detector website, in work. • working with PH on porting PyRoot to Python. <p>KN</p> <ul style="list-style-type: none"> • UED guys are set with new cables • ePix UED temp 63C • Sunday MFX finishes, 2M comes off, box delivered to MFX today. • 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). <p>CH</p> <ul style="list-style-type: none"> • 2m.0 last Friday looked good, charge-punch has recovered. • Measurements on sm 10k, pedestal application inconsistent in online ami, raw data is fine. • Still see dashed lines in pedestal config. <p>KP</p> <ul style="list-style-type: none"> • RMA for MPODs • Lab cleaning tonight.
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5 min	Budget Update	mmck	<div><div><div>M&S Status (Through December)</div><table><thead><tr><th colspan="3"></th><th colspan="2">Values</th><th rowspan="2">Remaining Balance</th></tr><tr><th>PA Proj_Act</th><th>PA Activity_Desc</th><th>LSTM Desc</th><th>KCST BA 1.0</th><th>ACTUALS</th></tr></thead><tbody><tr><td>10918-A4001</td><td>DET Dist Exp Support</td><td>M&S</td><td></td><td>\$0</td><td>(\$0)</td></tr><tr><td>16152-A4001</td><td>ePix Support</td><td>M&S</td><td>\$61</td><td></td><td>\$61</td></tr><tr><td>16158-A4001</td><td>Other Detector Support</td><td>M&S</td><td>\$12</td><td>\$0</td><td>\$12</td></tr><tr><td>16253-A4001</td><td>C-S PAD Support</td><td>M&S</td><td>\$6</td><td></td><td>\$6</td></tr><tr><td>18303-A4001</td><td>Jungfrau Support</td><td>M&S</td><td>\$12</td><td></td><td>\$12</td></tr><tr><td>16287-A4001</td><td>DET Department Management</td><td>M&S</td><td>\$4</td><td>\$4</td><td>\$0</td></tr><tr><td>16826-A4001</td><td>DET Department Research</td><td>M&S</td><td>\$58</td><td>\$9</td><td>\$49</td></tr><tr><td>16159-A4001</td><td>DET Dept Infrastruct & Dev</td><td>M&S</td><td>\$134</td><td>\$14</td><td>\$121</td></tr><tr><td>17439-A4001</td><td>DET Department OIP Projects</td><td>M&S</td><td>\$22</td><td>\$40</td><td>(\$18)</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td>\$310</td><td>67</td><td>\$243</td></tr></tbody></table></div><div><div>Labor snapshot (December actuals):</div><table><thead><tr><th colspan="3"></th><th colspan="2">Values</th><th rowspan="2">Remaining Balance</th></tr><tr><th>PA Proj_Act</th><th>PA Activity_Desc</th><th>LSTM Desc</th><th>KCST BA 1.0</th><th>ACTUALS</th></tr></thead><tbody><tr><td>10918-A4001</td><td>DET Dist Exp Support</td><td>Shop Services</td><td>\$134</td><td></td><td>\$134</td></tr><tr><td>10918-A4001</td><td>DET Dist Exp Support</td><td>SLAC Labor</td><td>\$19</td><td>\$3</td><td>\$16</td></tr><tr><td>16152-A4001</td><td>ePix Support</td><td>Shop Services</td><td>\$77</td><td></td><td>\$77</td></tr><tr><td>16152-A4001</td><td>ePix Support</td><td>SLAC Labor</td><td></td><td>\$3</td><td>(\$3)</td></tr><tr><td>16158-A4001</td><td>Other Detector Support</td><td>Shop Services</td><td></td><td>\$12</td><td>(\$12)</td></tr><tr><td>16158-A4001</td><td>Other Detector Support</td><td>SLAC Labor</td><td>\$115</td><td>\$32</td><td>\$83</td></tr><tr><td>18303-A4001</td><td>Jungfrau Support</td><td>Shop Services</td><td>\$6</td><td></td><td>\$6</td></tr><tr><td>16287-A4001</td><td>DET Department Management</td><td>Shop Services</td><td>\$25</td><td></td><td>\$25</td></tr><tr><td>16287-A4001</td><td>DET Department Management</td><td>SLAC Labor</td><td>\$136</td><td>\$80</td><td>\$56</td></tr><tr><td>16826-A4001</td><td>DET Department Research</td><td>Shop Services</td><td>\$9</td><td></td><td>\$9</td></tr><tr><td>16826-A4001</td><td>DET Department Research</td><td>SLAC Labor</td><td>\$197</td><td>\$55</td><td>\$142</td></tr><tr><td>16159-A4001</td><td>DET Dept Infrastruct & Dev</td><td>Shop Services</td><td>\$63</td><td>\$55</td><td>\$7</td></tr><tr><td>16159-A4001</td><td>DET Dept Infrastruct & Dev</td><td>SLAC Labor</td><td>\$264</td><td>\$92</td><td>\$172</td></tr><tr><td>19775-A4001</td><td>Commissioning - 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