Optical Installation/Commissioning and M&O

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Outline

- Status of Opto-Board Production
- Fabrication of more Opto-Boards?
- Status of PQSP Optical Preparation/Plan
- Summary
Opto-Board Production Status

<table>
<thead>
<tr>
<th>Type</th>
<th>Needed</th>
<th>OSU good</th>
<th>OSU rework</th>
<th>OSU bad</th>
<th>Siegen good</th>
<th>Siegen rework</th>
<th>Siegen in prog.</th>
<th>Siegen to fix</th>
<th>Siegen bad</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>224</td>
<td>174</td>
<td>21</td>
<td>14</td>
<td>50</td>
<td>9</td>
<td>15</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>48</td>
<td>36</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>15+1</td>
<td></td>
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</tr>
</tbody>
</table>

- OSU completed production in early October with 93% yield
- 224 good D boards with no rework
- Several rework D boards now available for system tests
- 17 B boards shipped to OSU for rework
  - 1 board passed QA and available for system tests
  - Repair of 3 boards in progress
- Maurice will provide more VDC to Siegen to fix D boards
# Fabrication of More Opto-Boards?

<table>
<thead>
<tr>
<th>Type</th>
<th>System</th>
<th>System (10%)</th>
<th>Spare slots</th>
<th>PQSP</th>
<th>Total</th>
<th>Good</th>
<th>Rework (80% yield)</th>
<th>in prog. (90% yield)</th>
<th>New boards (90% yield)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>224</td>
<td>23</td>
<td>12</td>
<td>24</td>
<td>283</td>
<td>224</td>
<td>21</td>
<td>19</td>
<td>21</td>
</tr>
<tr>
<td>B</td>
<td>48</td>
<td>5</td>
<td>4</td>
<td></td>
<td>57</td>
<td>36</td>
<td>0</td>
<td>15</td>
<td>7</td>
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</tbody>
</table>

- if no rework board is allowed on B-layer
  ⇒ populate 13 new B boards
Cost of New Board Production

- CPT offers 50% discount on remaining 36 B and 40 D boards
  ⇨ $10,700

- M&S
  ⇨ $400

- AA for passive components mounting
  ⇨ $2,100

- 3 months of tech time
  ⇨ $15,000

⇨ Total cost: $28,200
Status of Opto Preparation on PQSP

- opto-board tester
  - opto-board reception test:
    - optical power must be consistent with QA measurement
    - can operate with no bit errors at PIN current of 100 µA
    - ~30 boards have been tested at CERN
  - same test after mounting on PQSP

- fiber continuity tester
  - difficult to measure power lost in fiber
    - fiber is deemed not damaged if there is no significant lost
  - tester is working at CERN
  - need MT16-MT8 fan-out without guide pins on MT16 ferrule
    - expect to have a fan-out fabricated today at OSU
OSU Personnel at CERN in FY06

- **K.K. Gan** is on sabbatical at CERN until end of ’06
  - hope to extend to March of ’07

- **Waruna Fernando** (grad. student) has moved to CERN
  - work on opto installation and commissioning

- **Karina Loureiro** (post-doc) will start in March at CERN
  - work on opto installation and commissioning
  - work on opto related readout?

- search in progress for another post-doc to be stationed at CERN

- **Shane Smith** (engineer) will spend ~ 9 weeks at CERN
M&O for Shane Smith

- FY06:
  - 3 trips to CERN
  - 2 months of salary
  - $30.6K including indirect cost

- FY07 proposal:
  - 1 trip to CERN
  - 1 month of salary
  - $13.2K including indirect cost
Summary

- 17 B-layer opto-boards are being repaired at OSU
- not enough boards for system, 10% system test, spare slots, PQSP
  - production of new boards highly desirable
- preparation well underway for opto installation/testing on PQSP
- adequate opto personnel at CERN for installation/commissioning