LCLS Machine Protection System

- System Overview
- Completed Work
- Remaining Work
- Schedule

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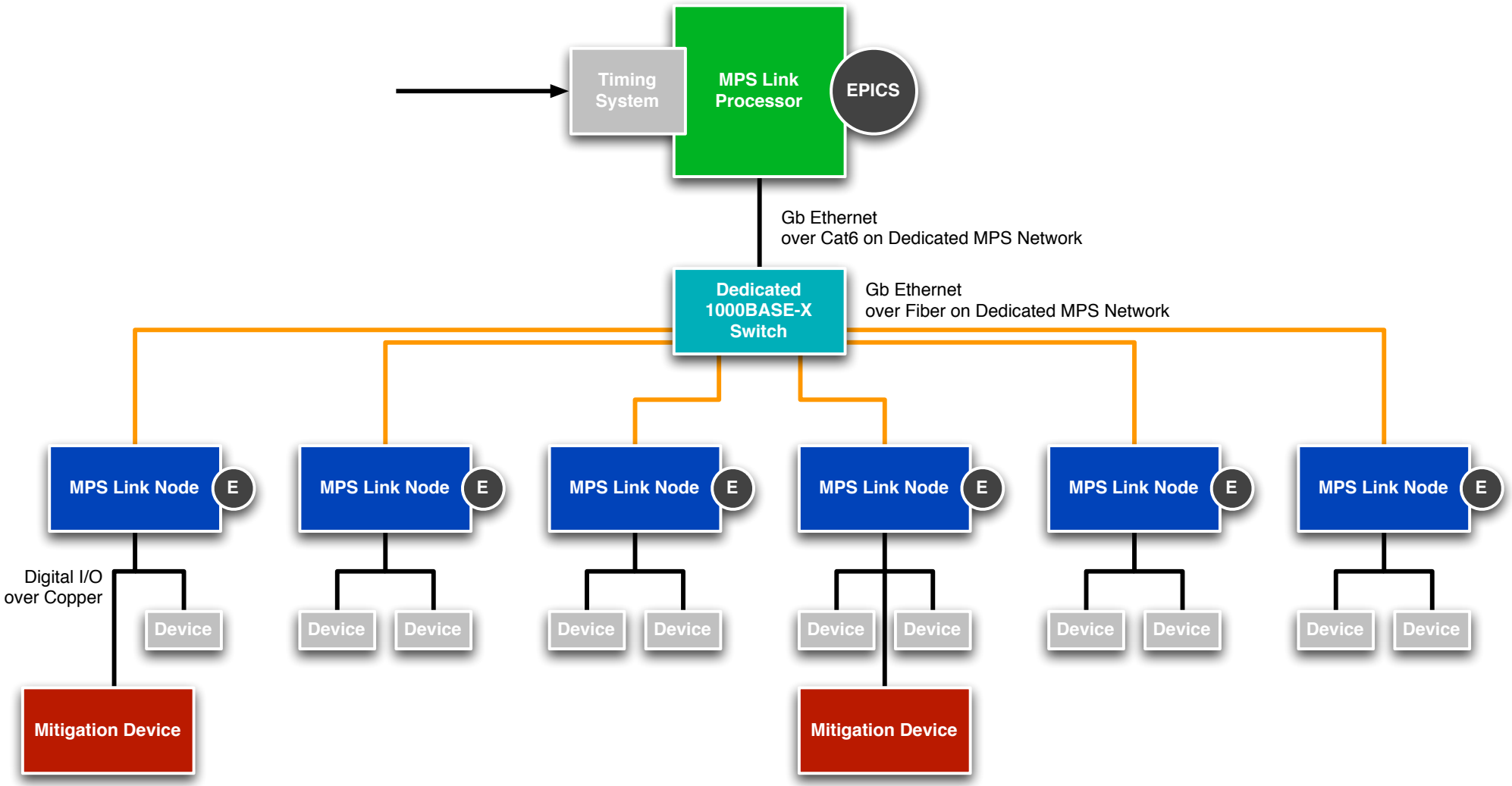
LCLS MPS Overview



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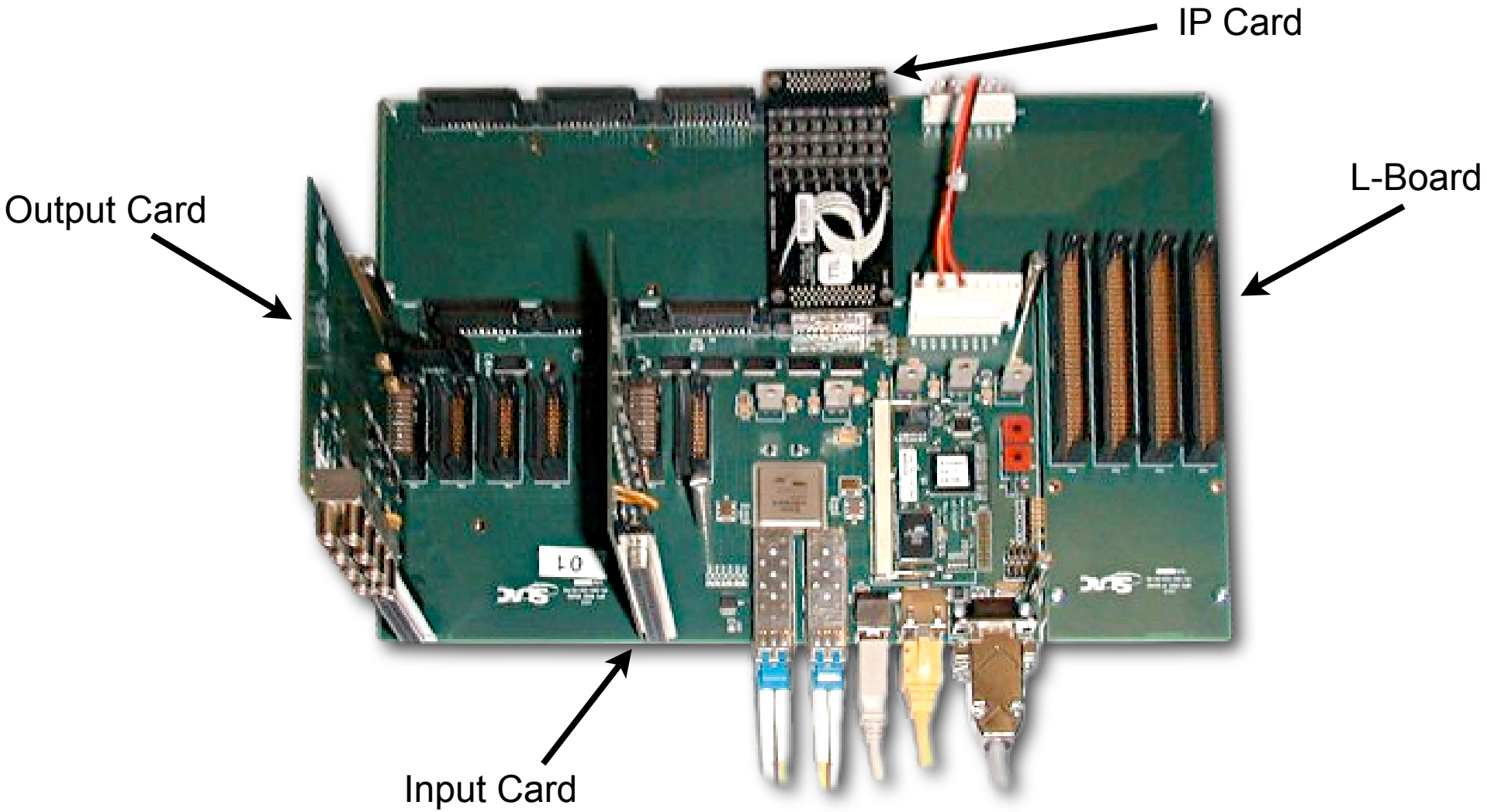
MPS Link Node



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MPS Software

- Four software projects
  - Link Processor
    - MVME 6100 IOC software
  - Link Node
    - FPGA firmware
    - ColdFire IOC software
  - MPS User Interface
    - Desktop computer
  - MPS Database
    - Database

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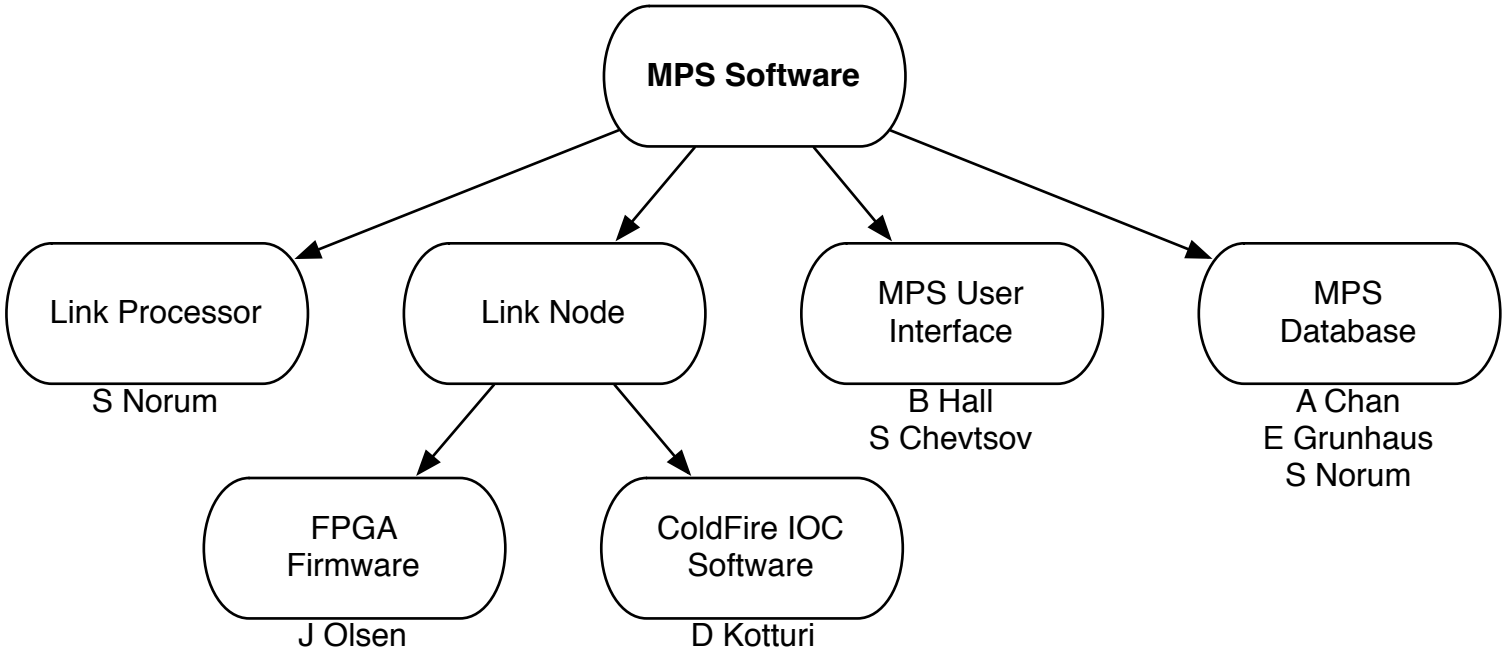
MPS Software



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Link Processor

- Remaining
  - Testing
  - BLM/PIC Integration
  - Final Algorithm

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Link Node

- Remaining
  - John Dusatko
    - PIC/BLM QINT ADC
  - Jeff Olsen
    - BYKIK Faults
    - QADC System Integration

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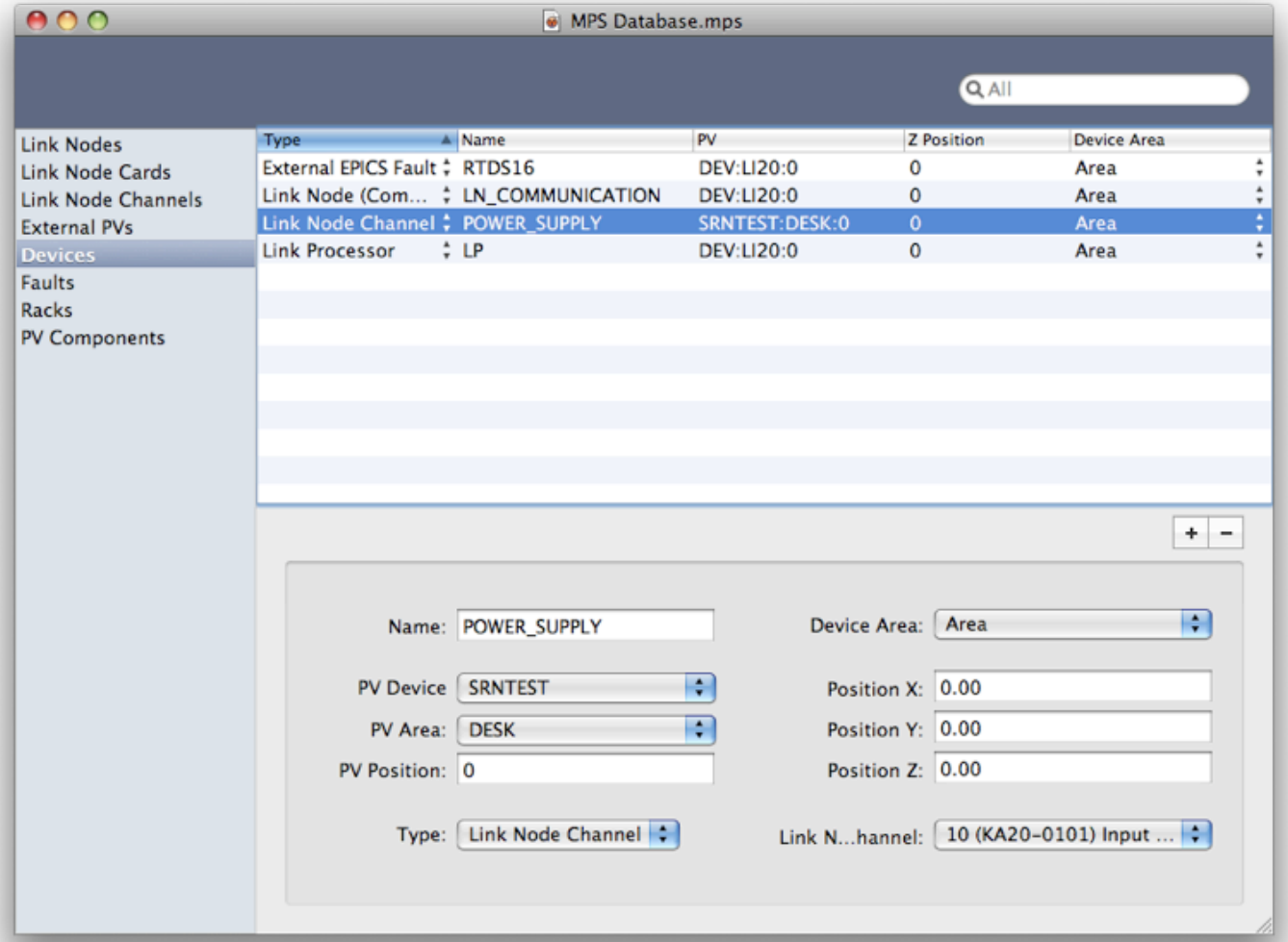
MPS Database



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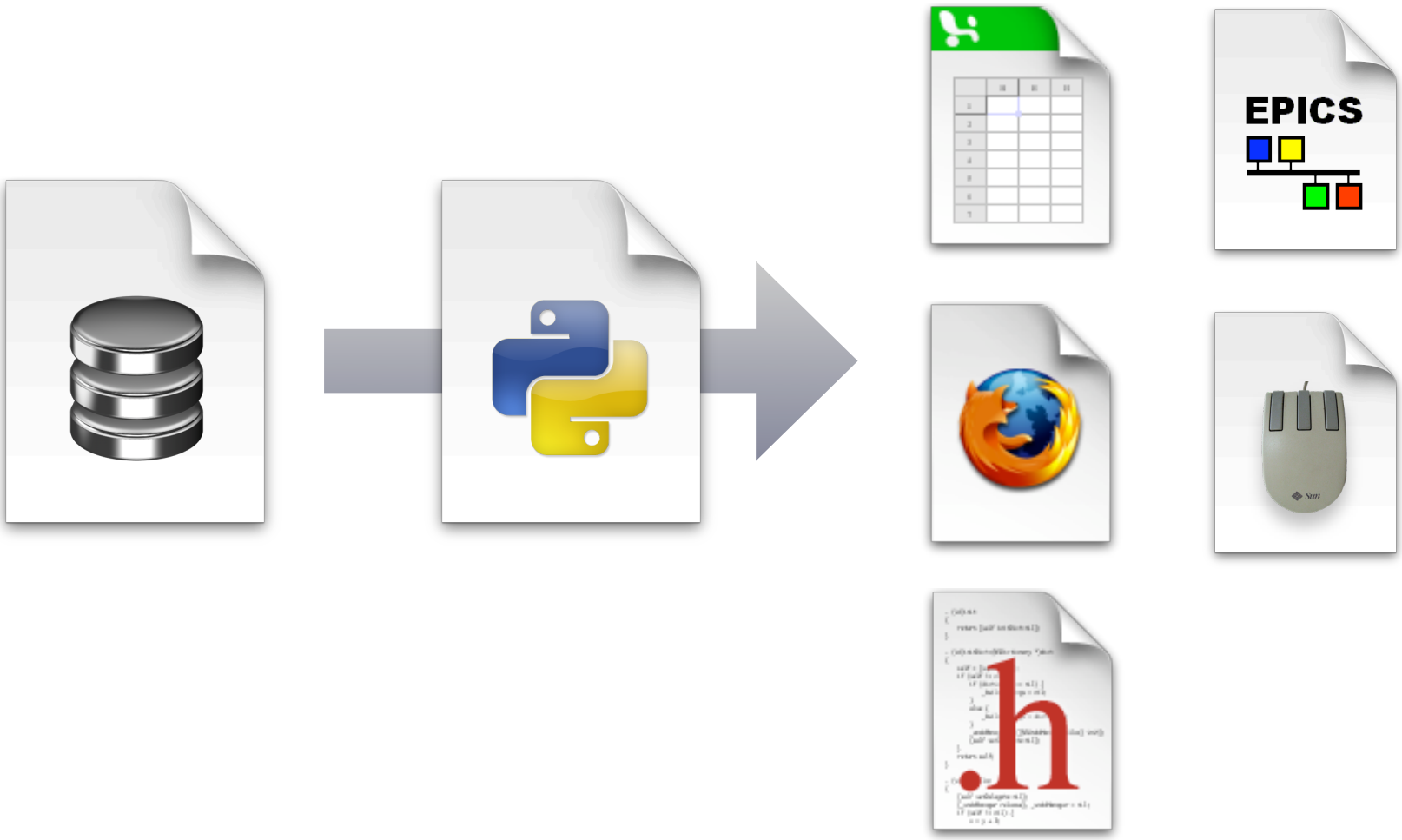
MPS Database



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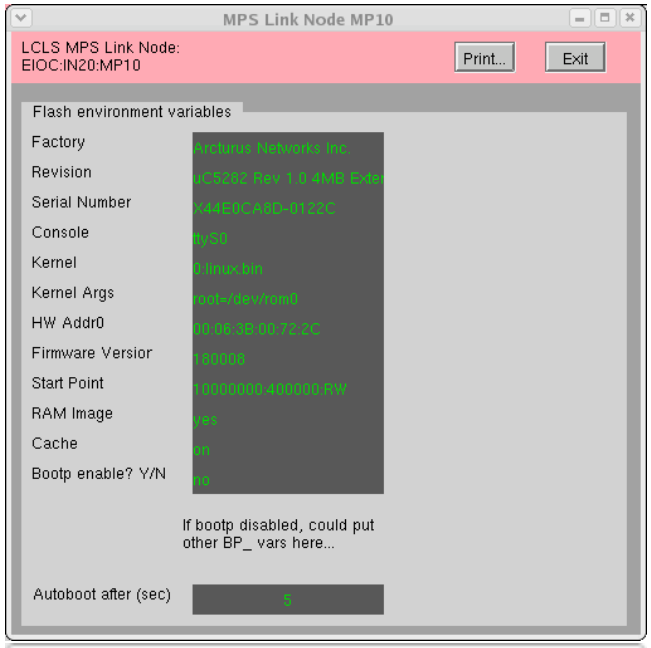
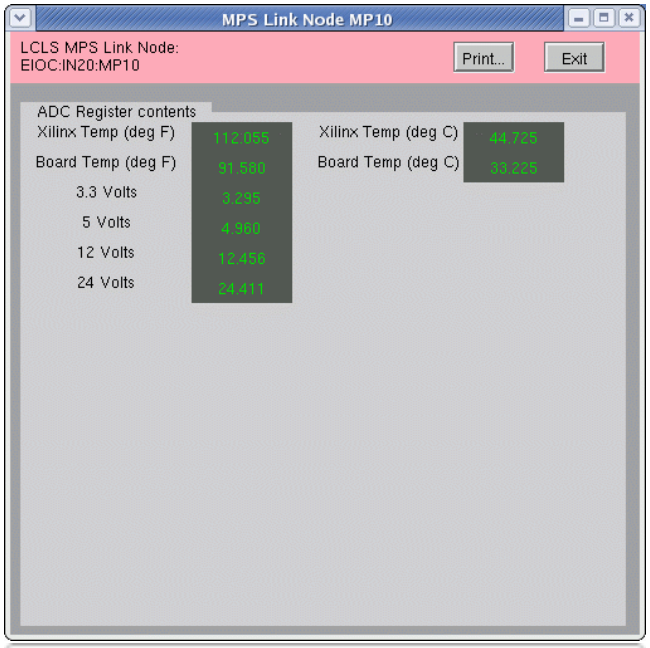
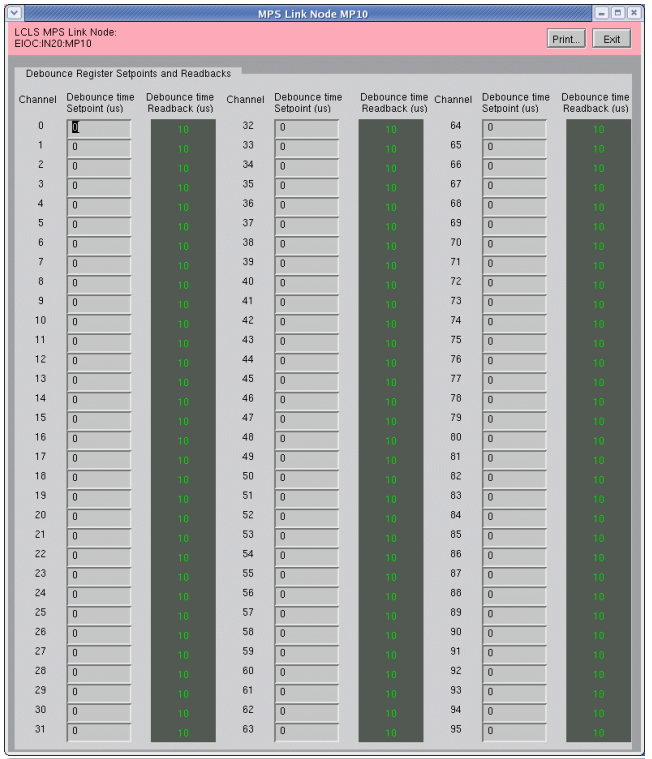
Link Node ColdFire User Interface







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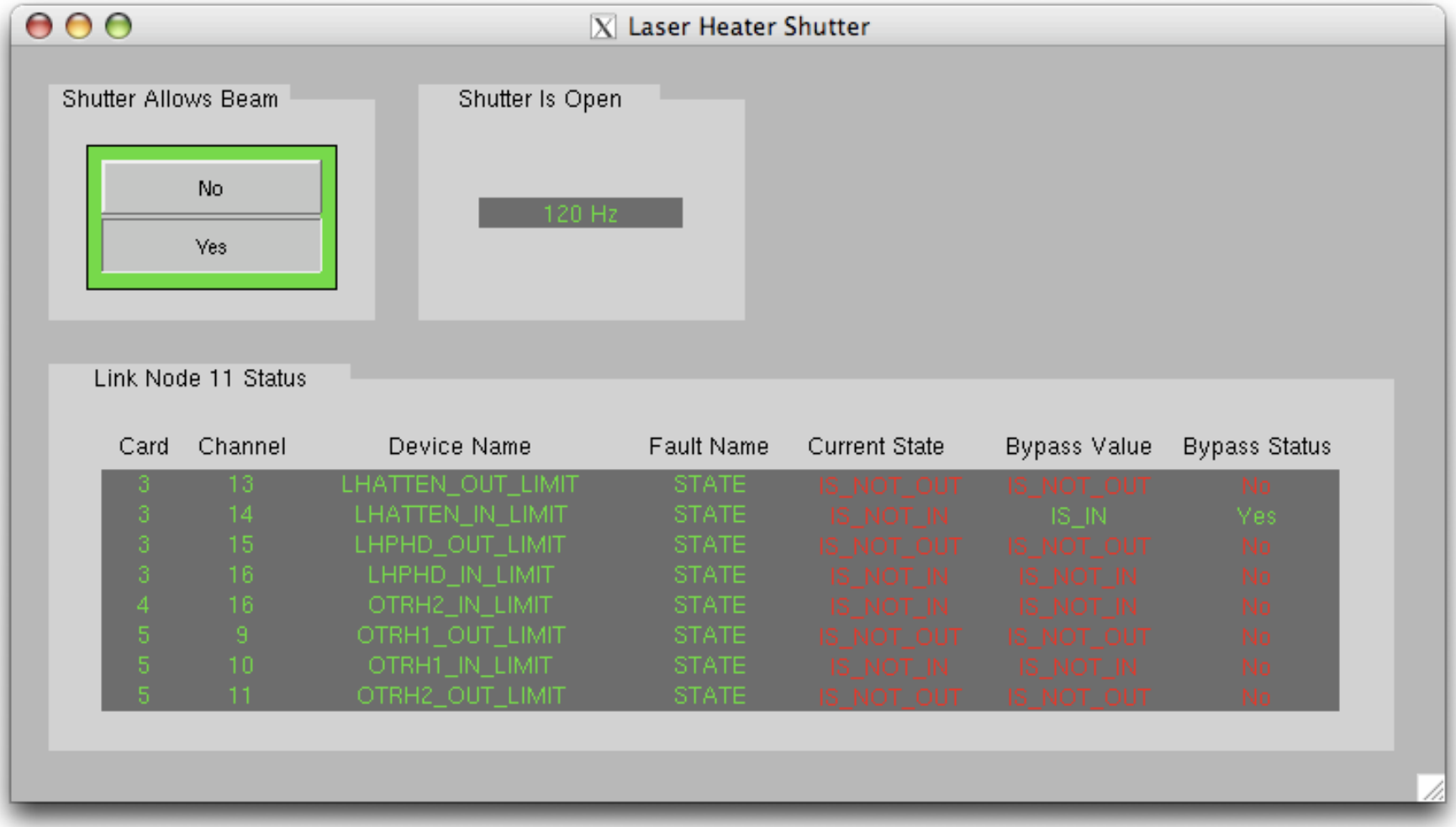
MPS User Interface



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Testing and Production

- Beam Test
- Laser Heater Shutter

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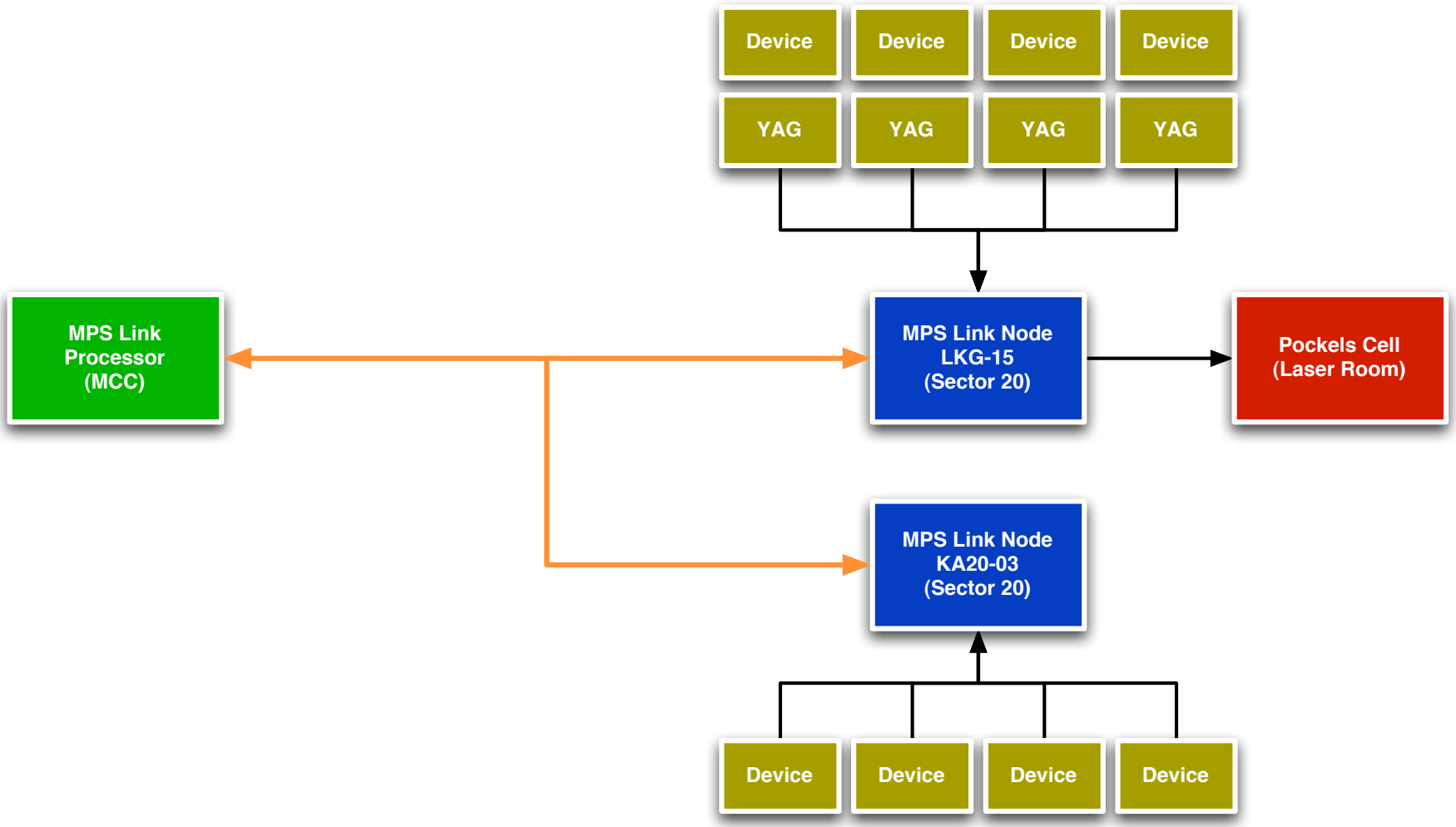
Beam Test



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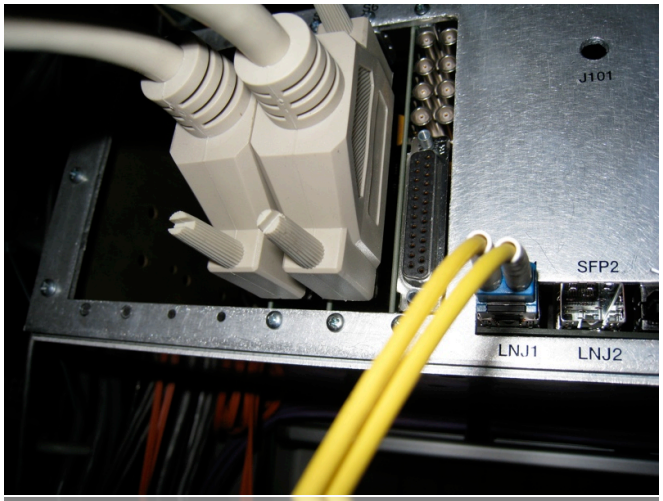
Beam Test



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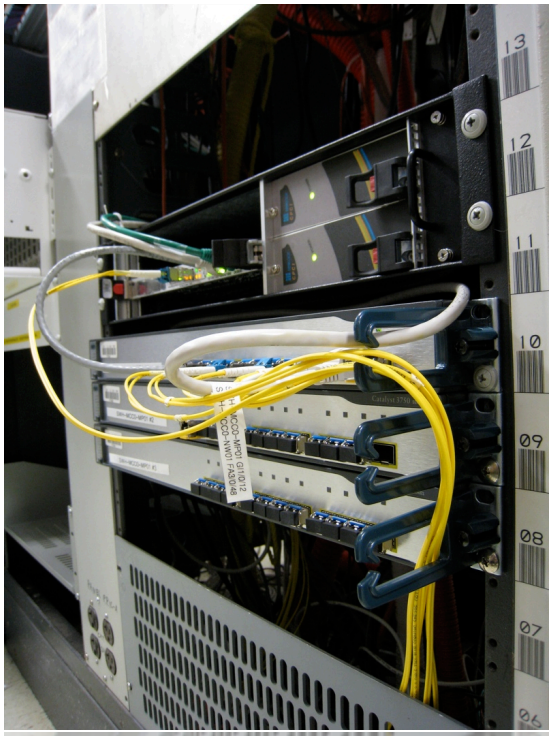
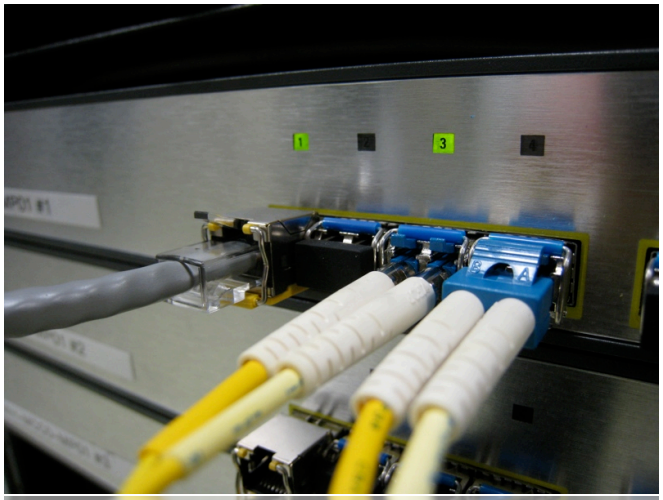
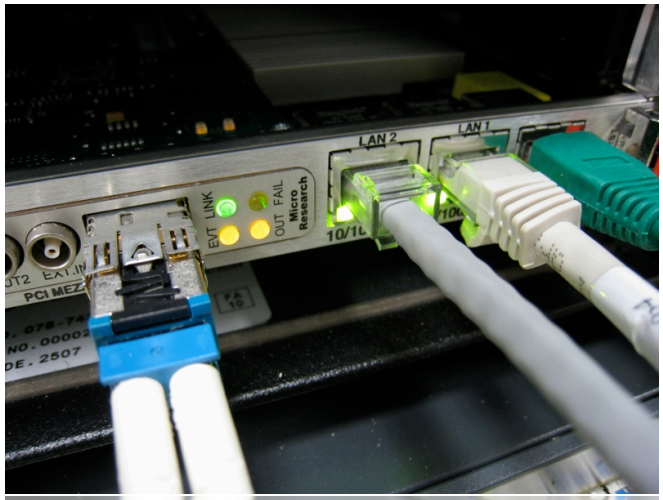
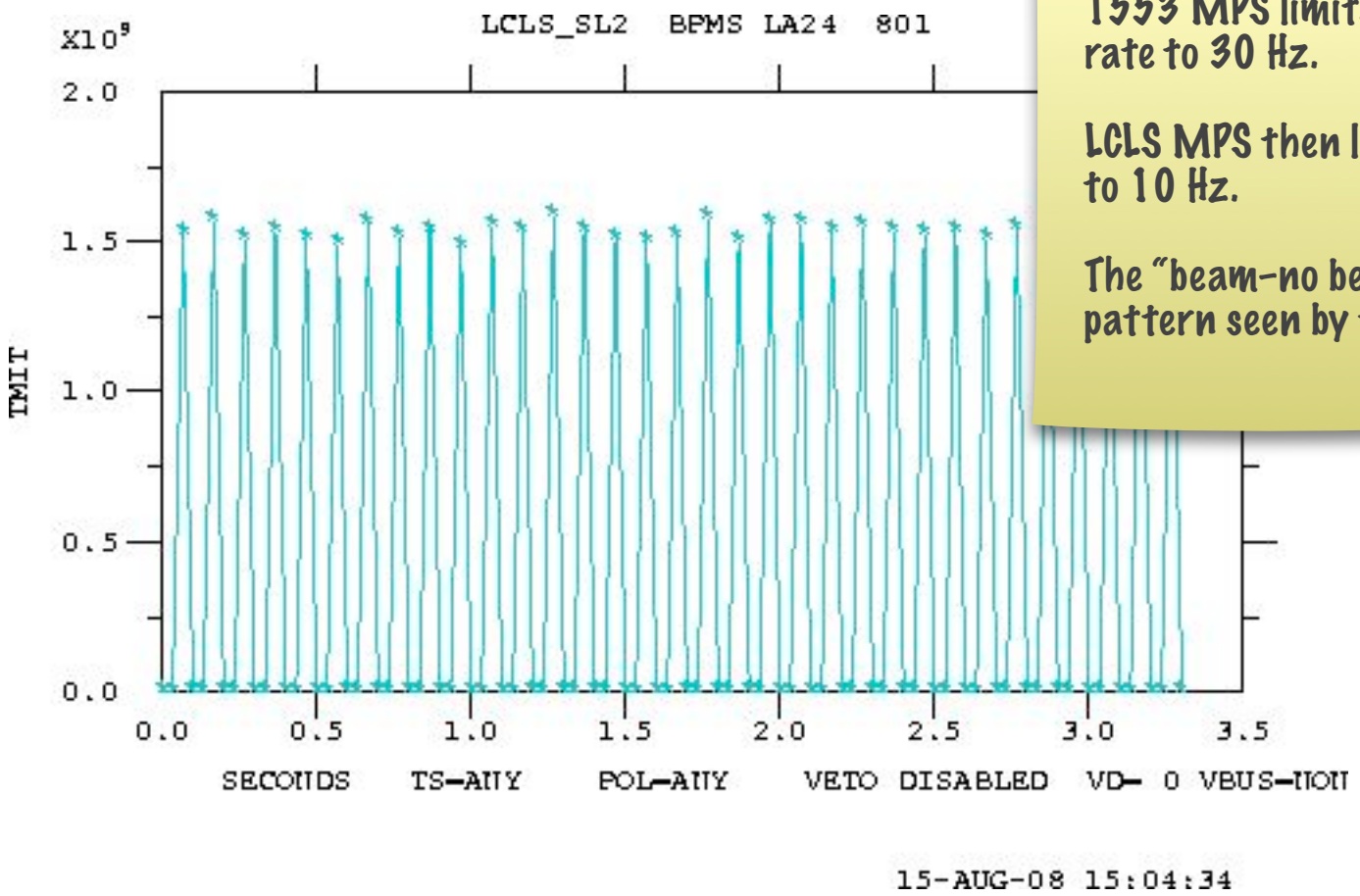
Beam Test







10 Hz Beam Limit

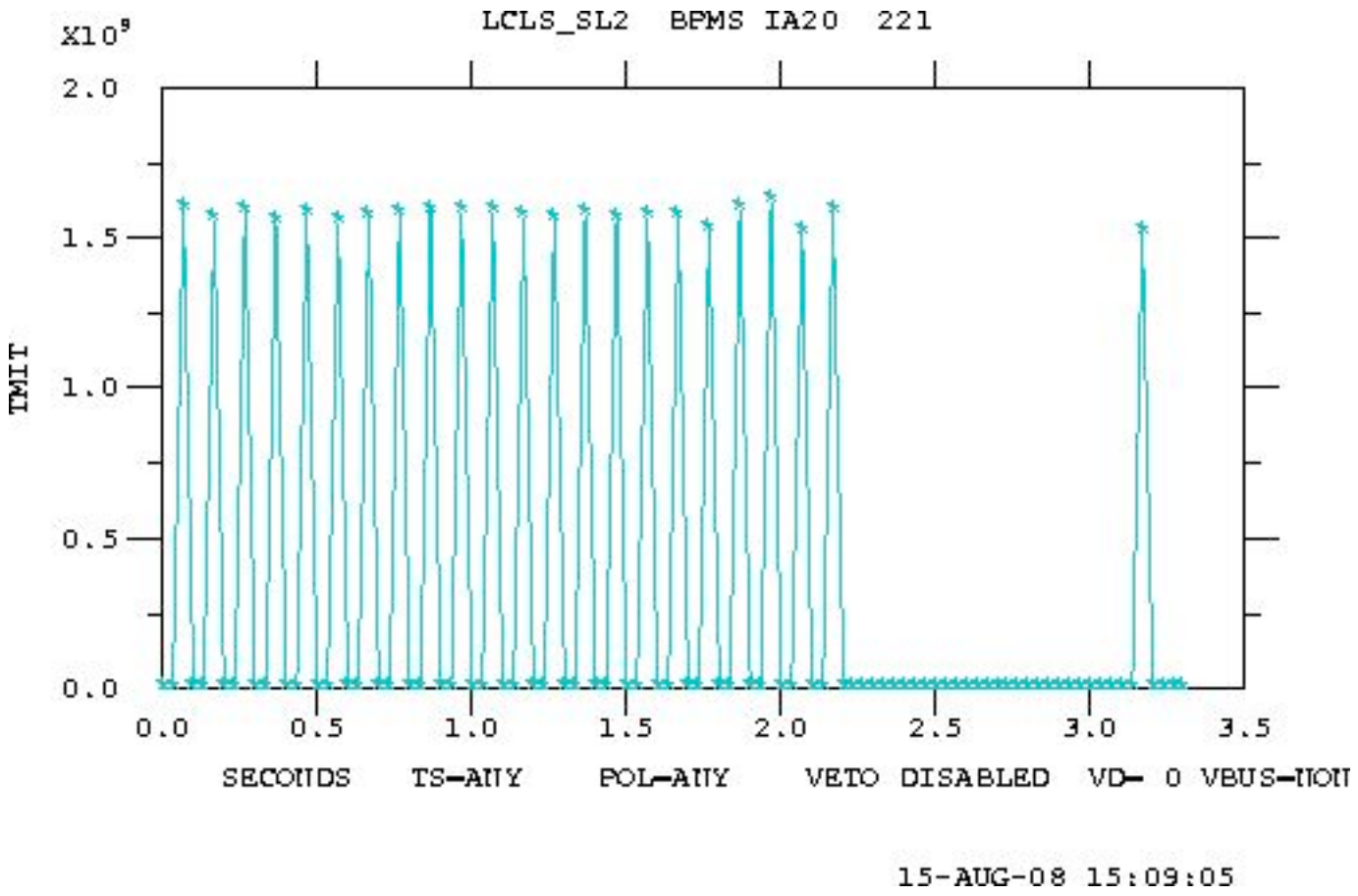


1553 MPS limits beam rate to 30 Hz.

LCLS MPS then limits rate to 10 Hz.

The "beam-no beam" pattern seen by the BPMs.

Transition from 10 Hz to 1 Hz



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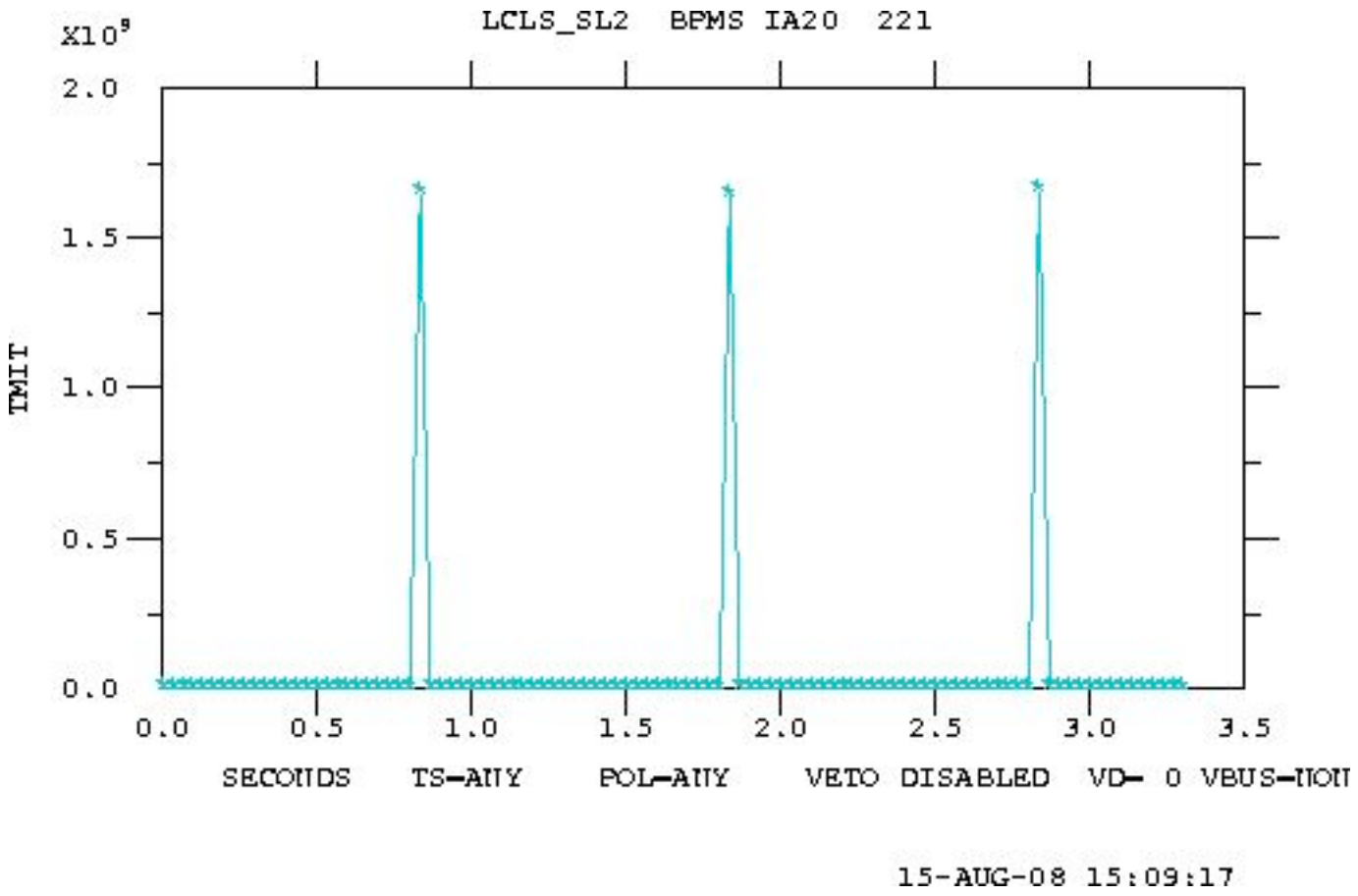
1 Hz Rate Limit



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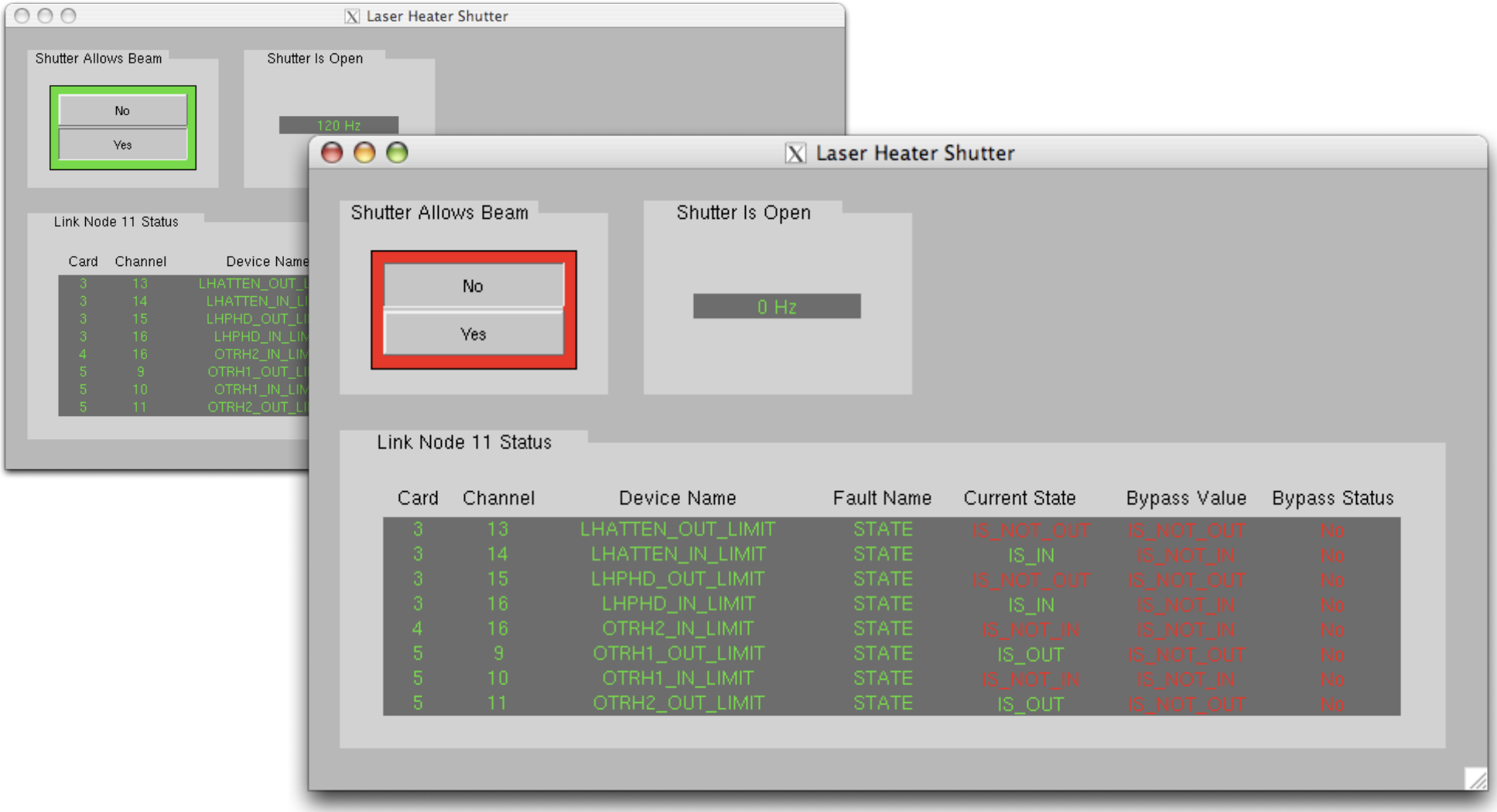
Laser Heater Shutter



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