

Advanced LIGO Engineering Change Request (ECR)

ECR Title: ECR:

DCC No: E12xxxxx-vx

Fiber Polarization Correction

Date: 10/2/2012

Requester:

Impacted Subsystem(s):

Daniel Sigg

ISC

Description of Proposed Change(s):

Add a motorized polarization controller at the launch point of the fibers (MSR).
Add a polarizer and a sampler to each fiber exit port in the end stations.

Reason for Change(s):

We observed during OAT that the polarization of the fiber beam on ISCBT10R changed slowly over time. This required us to manually adjust a halfwave plate. Worse, we had no diagnostics to indicate the problem. Adding a polarizer and measuring both the passed-through and the rejected beam will remedy this problem. Adding a motorized polarization controller further allows us to correct for polarization drift automatically.

Estimated Cost:

Fiber Control MPC1-2-2-2-FC-UPC-R (3 dual channel units): 34,500
Optics (polarizer, sampler, mounts): \$4,800
Total: \$39,300

Schedule Impact Estimate:

None.

Nature of Change (check all that apply):

- Safety
- Correct Hardware
- Correct Documentation

- Improve Hardware
- Improve/clarify Documentation
- Change Interface
- Change Requirement

Importance:

- Desirable for ease of use, maintenance, safety
- Desirable for improved performance, reliability
- Essential for performance, reliability
- Essential for function
- Essential for safety

Urgency:

- no urgency
- desirable by date/event: Feb 2013
- Essential by date/event: _____
- Immediately (ASAP)

Impacted Hardware (select all that apply):

- Repair/modify. List part & SNs: _____
- Scrap & Replace. List part & SNs: _____
- Installed units? List IFO, part & SNs: _____
- Future units to be built

Impacted Documentation (list all dwgs, design reports, test reports, specifications, etc.):

D1100607, MSR drawing

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Disposition (to be completed by Systems Engineering):

TRB

CCB

Approved

Additional information required. Define:

[Requester re-submits with new information with the same DCC E-number for the ECR but the next version number.]

Concurrence by Project Management: (Acknowledged Electronically in DCC)

Project Systems Engineer: Dennis Coyne

Project Systems Scientist: Peter Fritschel