Advanced LIGO Engineering Change Request (ECR)

ECR Title: TCS RF Distribution Cleanup **DCC No: E1500180-v1**

Date: 2/19/2014

Requester: Daniel Sigg **Impacted Subsystem(s): TCS/RF Distribution**

Description of Proposed Change(s): Bring the RF distribution for the TCS in line with the rest of the system. This change adds an low-loss RF cable between the CER and the mechanical room, adds an RF patch panel to the TCS rack in the mechanical room, adds a readback for the RF distribution amplifier cable (DB25 cable), adds a readback for the frequency of the TCS AOM (short RF cables), adds 4 baluns where necessary and updates the documentation for the RF distribution system.

Reason for Change(s): The RF distribution system has gone through some changes such as the addition of an RF synthesizer in the mechanical room. We never properly updated the RF distribution drawings, or established EtherCAT readbacks. This is mainly a cleaning up.

Estimated Cost: small (some cables, patch panel and baluns are probably at hand).

Schedule Impact Estimate: small (can be done during maintenance time)

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: __O1_____**
- ☐ **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.):
E1100591, D1100683, E1201049,
TCS drawings

Advanced LIGO Engineering Change Request (ECR)

Disposition of the proposed change(s):

The disposition of this proposed engineering change request is to be completed by Systems Engineering and indicated in the "Notes and Changes" metadata field in the DCC entry for this ECR. The typical dispositions are as follows:

- **Additional Information Required**: in which case the additional information requested is defined. The ECR requester then re-submits the ECR with the new information using the same DCC number for the ECR but with the next version number.
- **Rejected**: in which case the reason(s) for the rejection are to be given
- **Approved**
- **Approved with Caveat(s)**: in which case the caveat(s) are listed
- **TRB**: the ECR is referred to an ad-hoc Technical Review Board for further evaluation and recommendation. It is the System Engineer's (or designee's) responsibility to organize the TRB. The System Engineer (or designee) then makes a technical decision based on the TRB's recommendation. Links to the TRB's documentation (charge, memos, final report, etc.) are to be added to the "Related Documents" field for this ECR.
- **CCB**: a change request for approval of additional funds or schedule impact is to be submitted to the Configuration Control Board. Links to the CCB's documentation (CR, etc.) are to be added to the "Related Documents" field for this ECR.

Concurrence by Project Management:

Acknowledgement/acceptance/approval of the disposition is to be indicated by the electronic "signature" feature in the DCC entry for this ECR, by one the following personnel:

- Systems Scientist
- Systems Engineer
- Deputy Systems Engineer