LIGO Laboratory / LIGO Scientific Collaboration

04/-01 HAM-ISI Model Update

Release Notes

Version 2

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Distribution of this document
Advanced LIGO Project

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This update is to bring the the HAM-ISI model up to speed with the T1600062 BSC-ISI update. This document lists the items requested in SEI aLog 987 and comments. It also describes how they were assessed or postponed. Please refer to T1600062 for screenshots and details.

1) frame updates:
  a) store drive channels at same rate as HAM-ISI model (2048)
N/A

  b) store GS-13s, cart basis, at full model rate
GS13 signals were stored at 2048 in both the commissioning and the science frame. This was switched to matching the model rate.

  c) stop storing multiple copies of the ground STS-2s
Ground STS2 signals are already stored in the STS library block. The following channels were removed from the master model's list of DQ channels.
SENSCOR_GND_STS_{DOF}_FIR_IN1
Note: those used to be stored at a sample rate of 512.

2) fix the blend glitch - temp fix checked in, make a real fix.
BTL temp fix in place. Larger fix pending.

3)
  a) implement the 10 sec mandate on the BIO for LLO
Add BIOWAIT block to the BIO signal path in the WD block. This was aleady performed in isi2stagemaster.mdl by BTL.

  b) add monitor channels for the individual HAM bios
issue only appears at Stanford. S1:ISI-HAMX_BIO_IN_CD_V1_STATUS are blank on HAM-ISI WD screens. → tried recompiling with latest models from the SVN on 03/10. Problem still here but not relevant for the sited.

4) fix low case names of the STS-2 commands in the BIO_OUT block
N/A

5) make an MEDM screen with the STS-2 commands and monitors
N/A

6) St1-2 FF and St1 compensation
https://alog.ligo-la.caltech.edu/SEI/index.php?callRep=882
add path to compensate all of the st2 drive.
N/A

7) change the way the T240 gain switching is done
https://services.ligo-wa.caltech.edu/integrationissues/show_bug.cgi?id=915
N/A

8) increase number of allow saturations for BSC-ISI Wds to match the HAM-ISI numbers.
https://services.ligo-wa.caltech.edu/integrationissues/show_bug.cgi?id=1125
Already in place.

9) add "saturations since model start" epics channel to SEI watchdogs
https://services.ligo-wa.caltech.edu/integrationissues/show_bug.cgi?id=1134

Created a new version of ISIWDSATCOUNT.c called ISIWDSATCOUNT_vb.c. The new version computes the number of saturations since last model restart.
→ We created a new c-code file to allow updating models separately without impacting models that may still rely on the old code.

Note: svn up-ed hepitemplate and made sure it was not using ISIWDSATCOUNT.c.

Switched WD block function call from ISIWDSATCOUNT_.c to ISIWDSATCOUNT_vb.c and added new SAT_SINCE_RESTART epics output and related reset momentary input to master model.

10) Allow recording the mass positions for the STS-2s
N/A

11) add Reflected memory path for gnd STS-2s so we can isolate against only the differential motion
Next update

12) a) the outdated, top-level, binary IO blocks should be upgraded.

JeffK's Request. To be clarified for next update

12) b)we'd like to upgrade the reset momentary to use the
${userapps}/cds/common/src/LONG_PULSE.c
c-code where the duration of the pulse is user-defined such that it can send out the desire ~0.5 [sec] voltage pulse. (This is presumably what the additive STS2_Reset_ADD was trying to do).
No STS on HAM-ISIs, no re-centering BIO command, N/A

12) c)All of the cdsEpicsIn parts need to have their channel names capitalized in order to be functional.
N/A

12) d)The CAL, SIGSEL, and PERIOD should be changed to epicsBinIns, such that they can appear as rocker
N/A

13)   create ISI to SUS point library block to be placed on the top level model

Block already created as part of the BSC-ISI T1600062. Installed at LHO by HughR (LHO alog #26363).

14) SEI aLog 943

14) a) Add an SCSUM block after the ST2, SENSCOR block, just like what is in place for the GND to ST1 sensor correction in the ST1 block

N/A

14) b) Store the new sensor correction channels
${IFO}:ISI-${OPTIC}_ST2_SCSUM_T240_${DOF}_IN
${IFO}:ISI-${OPTIC}_ST2_SCSUM_CPS_${DOF}_IN
at 256 [Hz]

In place before update. Channels stored in commissioning frames only. At sample rate of 256.

c) Store the pre-existing channels feed forward channels
${IFO}:ISI-${OPTIC}_ST1_FF12_${DOF}_IN1
at 256 [Hz] in order to help diagnosis and characterization of these control paths.
Already in place. Stored in both the commissioning and science frames at 2048.

15) Employ tilt sensor correction from ST1 to ST2, recently proven successful in augmenting translational degrees of freedom (see LHO aLOG 25623)

N/A

16) BSC-ISI: Remove T240 signals going into ST2 SENSCOR. Instead pick off 6x signals of T240-L4C blends and send them into ST2 SENSCOR + send resulting drive signals to ST1 to allow compensating for ST2 drive there - to make it available to compensate for back-reaction.

N/A

17) ISI WD request - let the ISI model run w/o tripping if the SUS model goes down give a 60 sec. window to operator. (HughR)

Next Update

18) Last minute update – we need to add the SUSPOINT_EUL and CAL_CART channels to the DQ list. Same rate as saved by SUS.

Done

19) Do this for the HAMs as well ←This is what we will do next.

Purpose of this update. Done.

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20)   Remove user Dackill – approved

Removed the user dackill from the HAM-ISI master model.

Made sure the reset all button of the MEDM screen was still working. It does reset the WD, even though it returns the following error:

Error: ECA_TIMEOUT - User specified timeout on IO operation expired at /opt/rtcds/userapps/release/guardian/CaTools.pm line 175.

--S1:ISI-HAMX_DACKILL_RESET-- didn't connect.

...Indeed this channel doesn't exist anymore.

→ We will leave the MEDM screens as they are so the WD+Dackill can still be reset on platforms that haven't been updated yet.

→ This remains to be done on the BSC-ISIs.