Proposal for updating the test mass realtime control library

K. Izumi for VIS and commissioning teams
2018 Jan. 24th

The range of the impact

Once the proposals written in this document are implemented, the following realtime models will be affected:

- PRM
- PR2
- PR3
- BS
- SRM
- SR2
- SR3

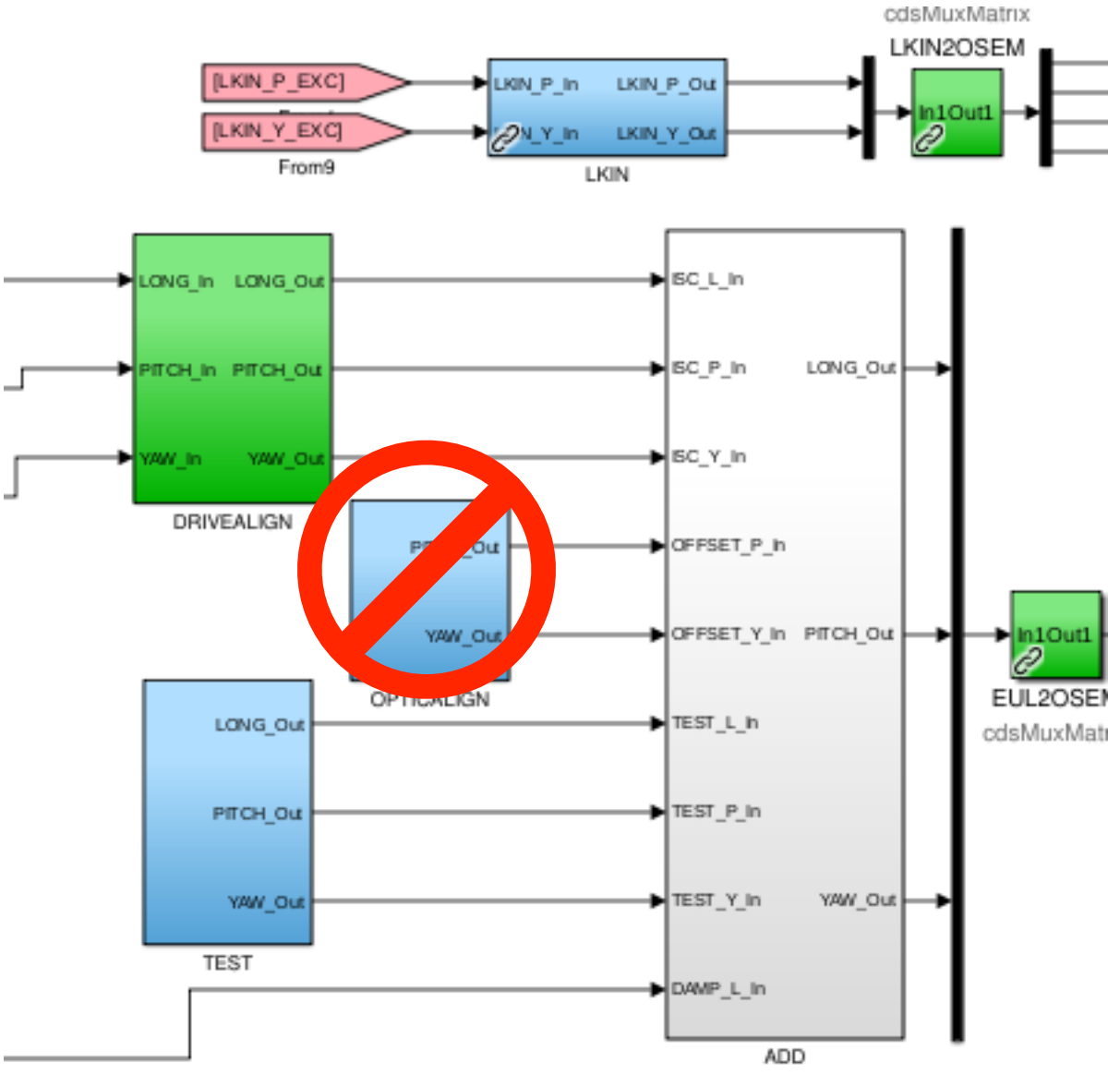
Those are the ones which use the test mass realtime control library (named TM_MASTER.adl) in simulink.

List of proposed updates

a) Removal of the OPTICALIGN block.
b) Removal of the unused oscillator and demodulator.
c) Merging the OLDAMP and DAMP blocks into a single library block. Also, name the new block OLDAMP or something appropriate.
d) Recovery of the library link for the master switch block.
e) Recovery of the library link for the BLRMS blocks used in the OPLEV block.
f) Getting rid of several irrelevant optical lever channels from the DAQ list.

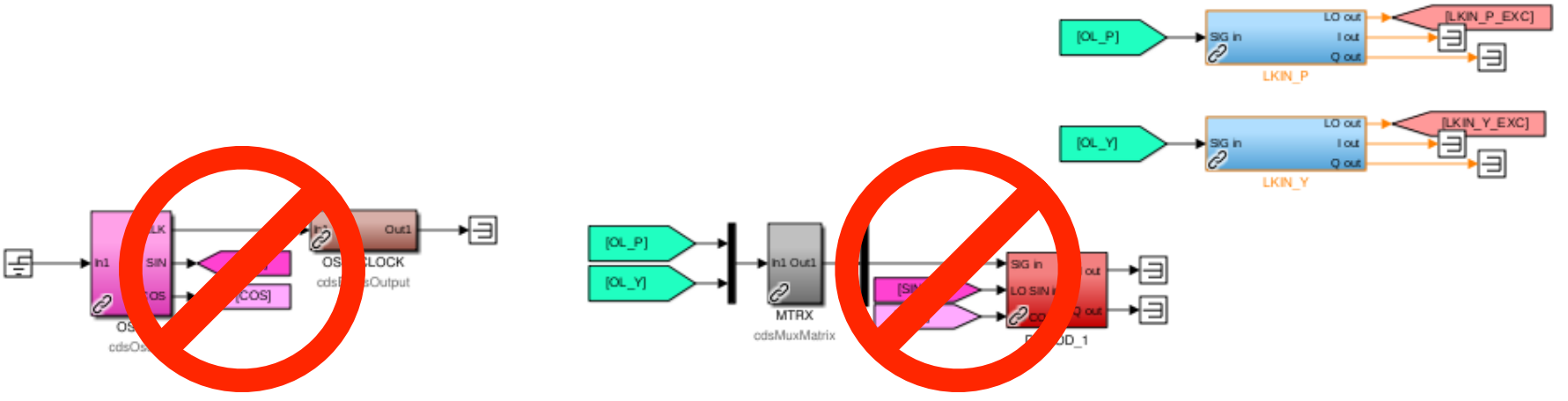
More detailed information can be found in the following pages.

Proposal (a)



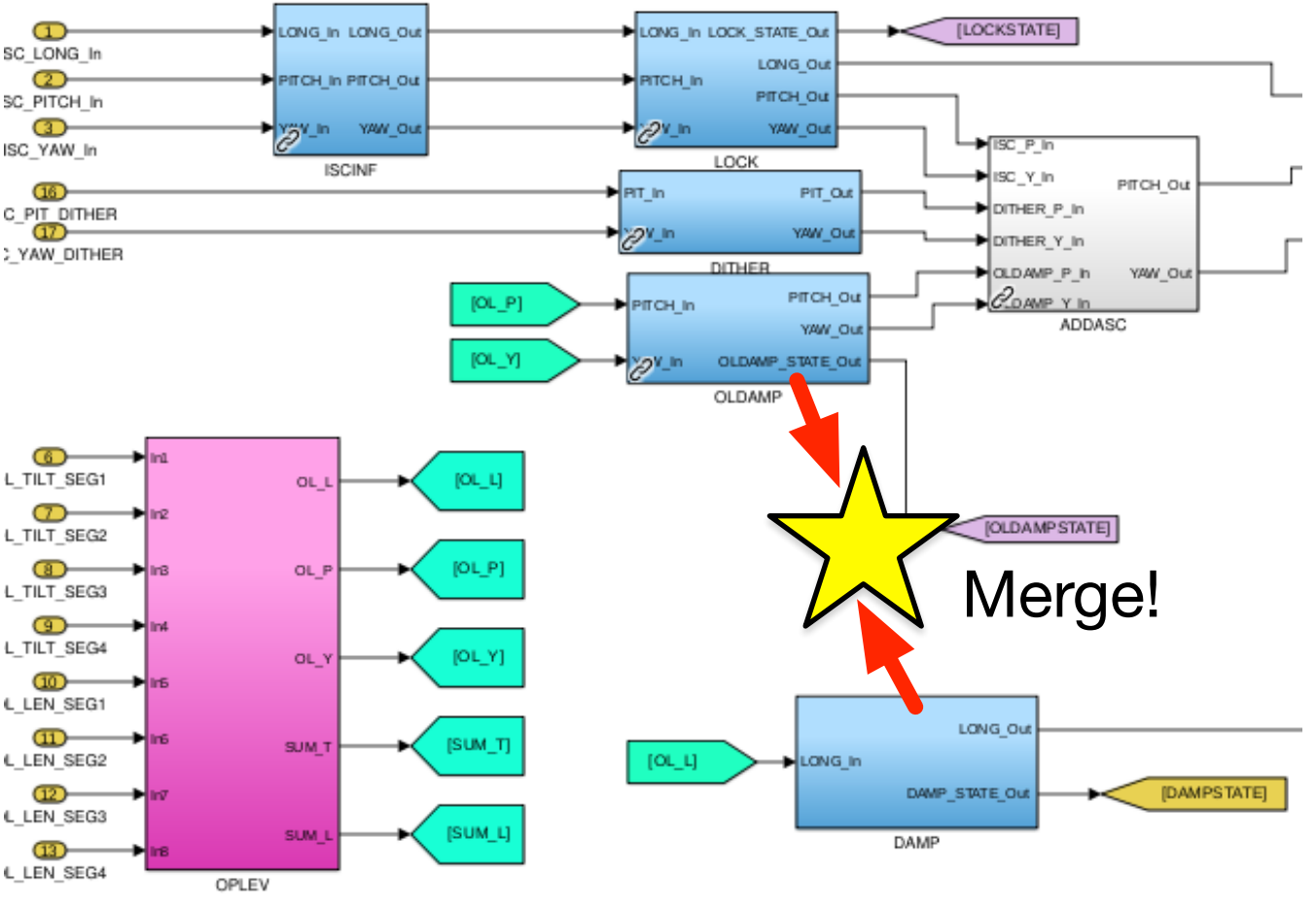
OPTICALIGN doesn’t have to be at the bottom stage. Remove it.

Proposal (b)



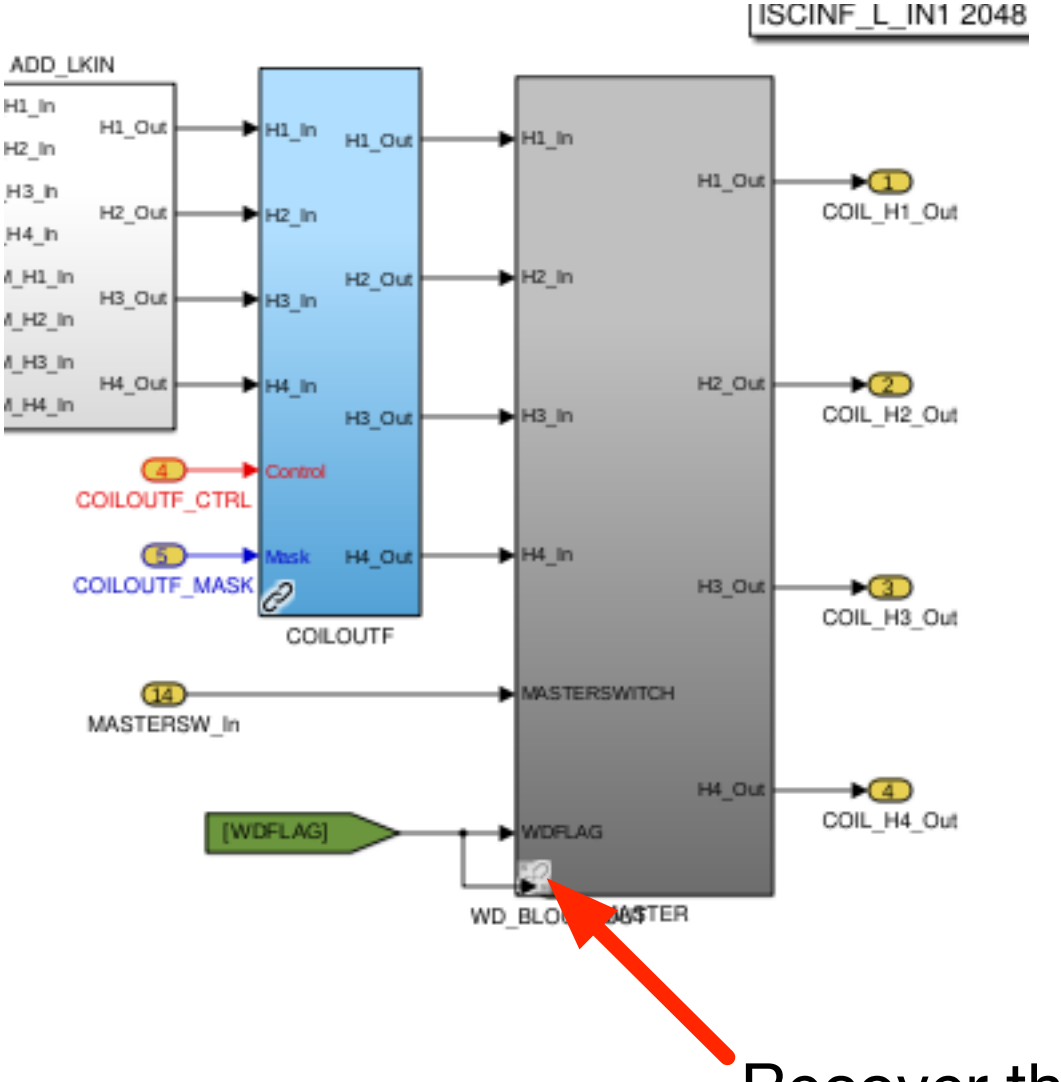
They don’t seem to be useful. The clock output is not even going anywhere. Also, the LKIN blocks (shown upper right) can do the same job.

Proposal (c)



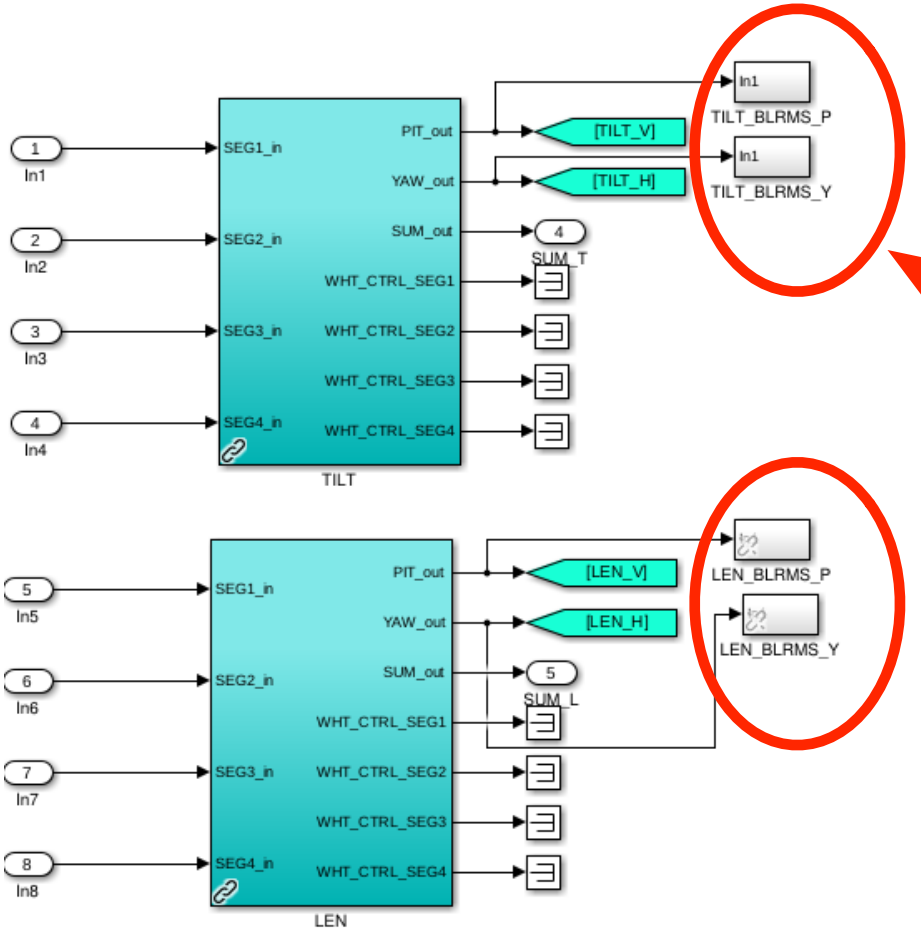
Also, make a new library block in VIS_LIB.mdl that contains the functionalities of both OLDAMP and DAMP.

Proposal (d)



Recover the link.

Proposal (e)

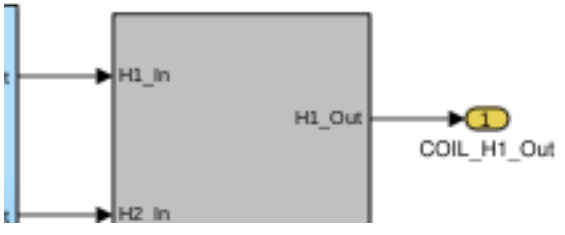


They should be linked from VIS_LIB.mdl

Proposal (f)

#DAQ Channels
OPLEV_TILT_SEG1_IN1 2048
OPLEV_TILT_SEG2_IN1 2048
OPLEV_TILT_SEG3_IN1 2048
OPLEV_TILT_SEG4_IN1 2048
OPLEV_LEN_SEG1_IN1 2048
OPLEV_LEN_SEG2_IN1 2048
OPLEV_LEN_SEG3_IN1 2048
OPLEV_LEN_SEG4_IN1 2048
OLDAMP_P_IN1* 2048
OLDAMP_Y_IN1* 2048
DAMP_L_IN1* 2048
OPLEV_TILT_SUM_OUT 2048
OPLEV_LEN_SUM_OUT 2048
ISCINF_L_IN1 2048

Get rid of them.



Then, add the new test points for the diagonalized optical lever signals.