

# 40m upgrade action items

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- Lab rehab
- Vacuum envelope
- Active seismic isolators
- Optics and suspensions
- PSL, Control and DAQ electronics

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- Lab rehab:
  - » Lab building rehab should be done by October – Fred Asiri, Steve Vass
  - » New roof, new control room, new entrance/changing room, larger IFO area, new electrical and cable trays. We're moving into new control room NOW. – Steve Vass
  - » Old PSL and electronics all gone. In-vacuum optics to be removed in fall.
- Vacuum envelope
  - » New vacuum control system to be commissioned by end of summer. – Dennis Ugolini
  - » OOC seems clean. OOC seismic stack is under construction; will need to be cleaned. Install in winter – Fred Asiri, Steve Vass
  - » 12-meter MC vacuum envelope can be installed at any time; maybe same time as OOC. May want to make it longer by adding a pipe. – Steve Vass
- Active seismic isolators
  - » Go ahead with plan to support all four test mass chamber stacks on STACIS active seismic isolators. Mechanical engineering, installation -Larry Jones
  - » Maybe possible to have this done within 6 months...

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## ■ Optics and suspensions

- » Start with LIGO-I-like suspensions. Maybe, by 2002, replace with multiple pendulum prototypes
- » 3"x1" optics on SOS suspensions (exactly like LIGO MC and MMTs) for the 3 MC optics, PRM, SRM, BS – Garilynn, Janeen
- » 4"x3" optics (or whatever minimizes re-engineering chore) on scaled SOS/LOS suspensions for the 4 test masses, in order to minimize thermal noise due to attachments. – Garilynn, Janeen
- » Flat ITMs, specified ROC on all other optics
- » Coatings appropriate for currently proposed LIGO-II configuration are already specified. But wait till last minute in case they change their minds!
- » Assemble, hang, balance - Sany Yoshida
- » Output mode cleaner... worry about it later
- » Would like to place orders for suspended optics + spares SOON . – Garilynn, Janeen
- » Ditto, for all "support" optics (MMT, folding and steering mirrors, pickoffs, telescopes, oplevs, etc) – Mike Smith
- » Review of optical layout – Mike Smith and others

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- Control and DAQ electronics
  - » PSL to be delivered by winter.... – Peter King
  - » Would like to have a brainstorm session with all interested parties on what might be different at LIGO-II – Jay, Rolf, Rick, etc
  - » Assemble a complete inventory of required racks, crates, OTS items like CPUs/ADCs/DACs/BIOs, whiteners / dewhiteners / AAFilters; etc – Rick, AJW
  - » Would like to go ahead and procure and assemble a system for now, if it isn't too much wasted money... – Rick, AJW