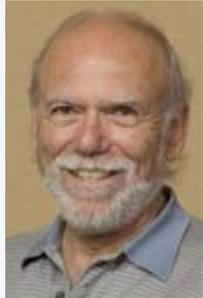


## Director's Corner

17 January 2008



Barry Barish

### Collective wisdom

In [last week's Corner](#) I mentioned the Global Design Effort Executive Committee (EC) face-to-face meeting held at DESY this past Sunday. I said that we hoped to come up with a revised plan for the next phase of our ILC R&D programme, and I report today on our conclusions and consensus as to how we propose to redefine our plans and goals in response to the new budget constraints. Similar replanning for the detector efforts is addressed by Sakue Yamada in this issue and we are in discussions together to make sure the detector and accelerator plans are consistent.

The GDE is a youthful organisation without a large formal management structure. For example, the directorate consists of one person, myself. From the beginning, in the absence of a larger structure, I have relied heavily on committees for

both policy and technical advice and decisions. In particular, for policy and strategic issues, I created a small Executive Committee (EC) of senior leaders who meet frequently, both in teleconferences and face to face to work with me and advise me on essentially all such issues. The present membership is the three regional directors (Brian Foster, Mike Harrison and Mitsuaki Nozaki), the three project managers (Marc Ross, Nick Walker and Akira Yamamoto) and two senior accelerator leaders (Ewan Paterson and Kaoru Yokoya). All members attended last Sunday's meeting.



Some members of the Executive Committee at a meeting in Rome last year.

The meeting consisted first of reports by our regional directors on the detailed situation and impacts on the ILC R&D programmes in the US and UK, followed by an analysis of the impacts on our *Engineering Design Report* efforts by the project managers. We then worked together on strategies for how to move forward under the new budget limitations. For planning purposes, we are assuming US ILC R&D funding will be restored in FY09, but at a reduced level. If the funds are restored, the actual amount will not be established for some time, but we will get a first indication in a few weeks from the FY09 President's budget.

We then examined the different areas of the ILC R&D work and discussed various approaches for the future. We quickly decided not to just generally stretch out our present plan. The fact is the impacts of the budget cuts are far from uniform, being concentrated in areas where the main efforts came from the US and UK. It is a big challenge to mitigate those losses and at the same time maintain the priorities of our programme.

By the end of our EC meeting we agreed on the top-level elements of a new plan. It will be discussed much more in future weeks, including at the coming FALC meeting, at the P5 meeting in the US, at the [Sendai GDE meeting](#) in Japan in early March and in many internal meetings and discussions. We will flesh out and modified the plan as a result of those discussions. Our plan involves judiciously reducing scope of R&D work while keeping the schedule for several highest priority items and stretching out other parts of the programme.

The proposed new plan, which we are calling the Technical Design Phase (TDP) to avoid any confusion with our present *Engineering Design Report* effort, will be carried out in two stages. The highest-priority technical risk items will be completed as originally scheduled in 2010 and much of the rest of the programme stretched to 2012. We believe this plan is doable, will maintain momentum and will achieve the most critical goals early enough to propose the ILC to governments, whenever Large Hadron Collider results justify this.

The first part of the Technical Design Phase, TDP-I, will significantly reduce technical risk through carrying out our global high-gradient program (S0) and by testing electron cloud mitigation at CEsrTA (Cornell). The other part of phase I will be targeted [value engineering](#) or cost studies on the largest cost drivers, conventional facilities and main linac technologies. We believe we can accomplish these crucial goals on our original schedule of 2010.

The second part, TDP-II, will be completed in 2012 and will complete preparations to be ready for undertaking detailed final engineering design and industrialisation. A central feature of this second phase will be the assembly and testing of a complete radiofrequency unit (three cryomodules plus beam) at KEK. We also plan to complete the cryomodule design, produce a documented technical design and a reliable cost rollup. Finally, we will develop a project plan for implementing ILC construction.

Unfortunately, this plan presently has some holes and weaknesses due to lost resources, including the positron source and damping rings, as well as limitations in developing full superconducting radiofrequency (SCRF) capability in all three regions. Other plans like the development of global capability and industrialisation will suffer. We plan to make full use of the work for the XFEL (X-ray free-electron laser), will seek closer collaboration in areas of mutual interest with the Compact Linear Collider (CLIC) and with the generic SCRF development in the US and Japan, all of which will augment our ILC R&D programme.

We are in the midst of a very problematic time for our ILC aspirations, but we are "still standing" and determined to move forward. The most important thing in our determination to keep moving forward is the fact that a linear collider remains the highest-priority long-range physics goal for our field, following the LHC. The plan I have briefly described today is the result of the "collective wisdom" of our Executive Committee, much like advocated in Plato's *Republic*. Of course, this plan will need to be evolved through extensive interactions with the rest of the GDE and the detector leadership and community over the coming weeks to make it a reality, but we have a starting point that comes from our very best joint efforts!

-- Barry Barish