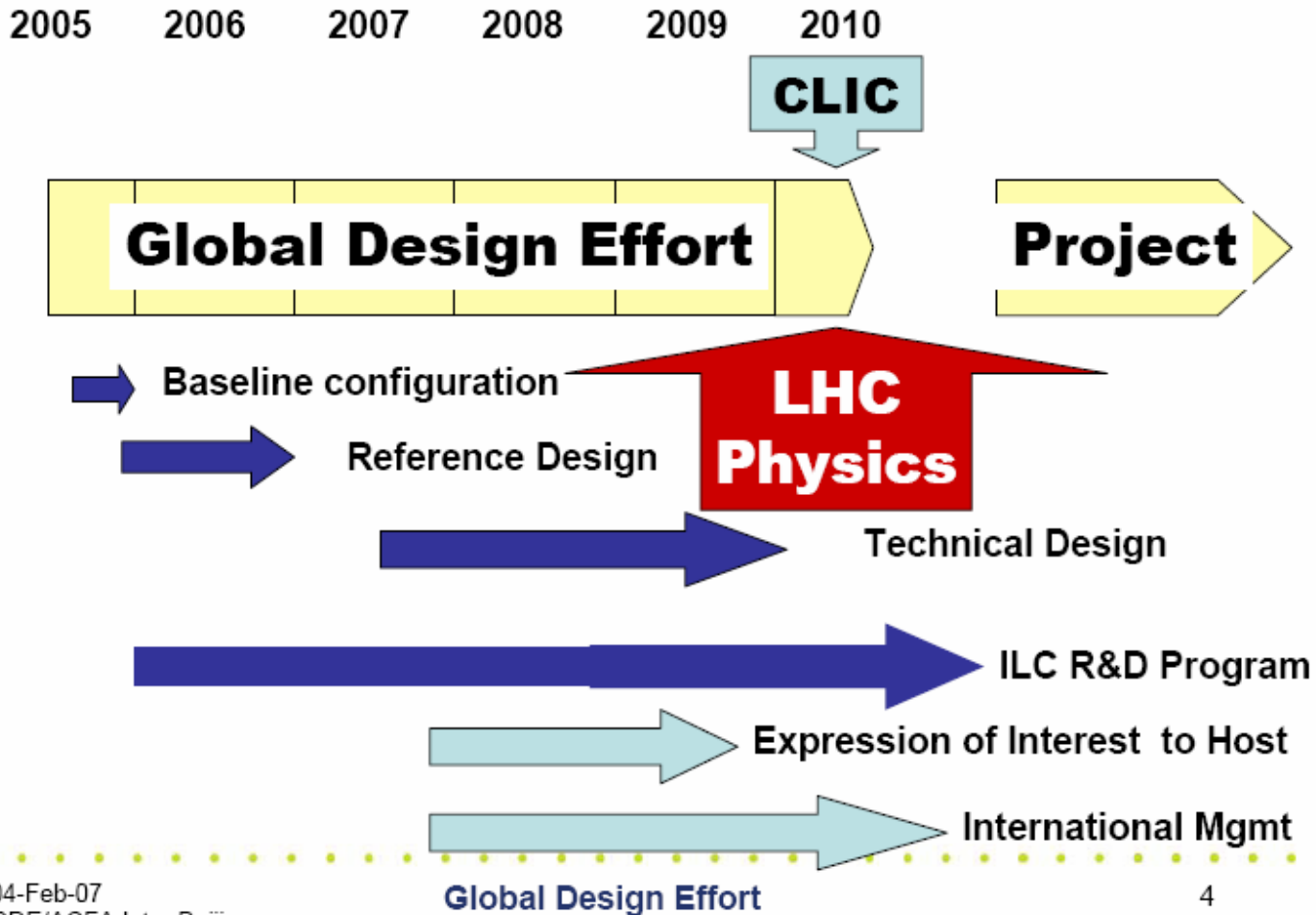




The GDE Plan and Schedule



Personal View

- The community should prepare for the opportunity that we expect around 2010
- This means having engineered detector designs ready, along with the machine EDR (+ ~1 year)
- Organizing in this way will enhance credibility with funding agencies
- SiD should plan for this process, and work to engage a larger global “collaboration”
- Must maintain some openness to revision in design with future revelations
 - keep critical R&D alive

The WWS Roadmap

WWS Roadmap calls for 2 Detector Engineering Design Reports (EDRs) when the Machine EDR is complete (2010). This is a make or break time for the ILC. The machine and the detectors need to be ready for it.

Working back, that means (my interpretation):

- Two international, complementary Detector Designs must be defined by 2008
- The four extant, regional Detector Concepts in 2007 need to coalesce spontaneously into two (mine and a combination of the others)

or

- Two of the four extant, regional Detector Concepts in 2007 must be selected, and the appropriate marriages arranged to preserve the ILC community and international balance.

or

- ???

How Should SiD Respond to WWS Roadmap?

An uncertain world! What should SiD do?

- **Play Ball.**
Participate in WWS Roadmap Process, the Inter-Concept Jet Reconstruction Working Group, and the ongoing subsystem R&D reviews.
- **Internationalize SiD**
Recruit new collaborators, especially Asian and Europeans, to help with optimizing the SiD design.
- **Get moving on the SiD Conceptual Design Report**
We need to understand, optimize, and complete our design.

Define our R&D needs(is being done)

Interactions with R&D collaborations should/could improve

Be open/receptive to alternate approaches

For those areas, where choices are not obvious

Bring in new expertise to work on this within SiD

Make decisions later.....within SiD

Become more global and grow collaboration

Individual seminars; small workshops after

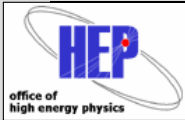
before conferences/larger workshops. Others ?

Grannis suggested name change (do not agree).

To make it clear where we stand and want to go, the suggested name is

Detector 1 or I,a,A, α
Based on Si tracking

You get drift



ILC timeline



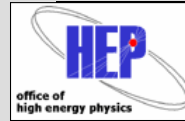
DOE Undersecretary for Science, Ray Orbach talked at HEPAP in February, and advocated that the US should examine the nature of its HEP program in the case that the ILC is stretched out relative to the GDE technically limited timeline.

GDE timeline (RDR):

- Technical (Engineering) Design Report by 2010
- Start construction in 2012
- End construction in 2018 (7 year construction)

How do we interpret Dr. Orbach's comments?

3



ILC timeline*

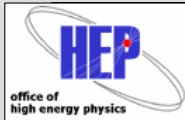


1. The GDE value estimate (\$6.7B \$FY07 + ~\$1.5B FY07 for explicit labor) is sufficiently high that it is not sensible to request a decision now to approve the project.
2. The value estimate will have to be translated into US methodology (contingencies, escalations, relevant overheads, detectors, US-specific costs relating to hosting, R&D ...). It is important to get a cost that does not change, includes all relevant pieces initially, and avoids scope changes. Don't rush to do the translation.

A valid translation requires (among other things), validation of the GDE estimate, assumptions on what the US is responsible for, and site selection.

* PG understanding

4



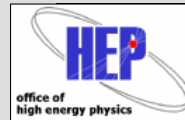
ILC timeline*



3. Putting the ILC R&D effort on a firm international footing is a very high priority now. Partners need to buy in for the EDR phase.
4. Experience with large international projects (e.g. ITER) show that negotiations relating to site, governance, cost-sharing etc. take time. (3 years for ITER from well defined EDR).
5. Seven year construction time for a very complex project is probably not realistic.
6. It is imperative to keep US HEP in general, and Fermilab as the potential site, healthy in the interval before the ILC. Planning this interim period with eye to possible delays is needed.

* PG understanding

5



ILC timeline comments*



The ILC remains the highest priority for DOE HEP and is the top Office of Science priority for intermediate term facilities, based on its scientific potential. There is no retreat from the goal of realizing the ILC.

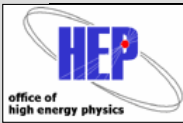
Confirmation of the physics case at LHC remains crucial.

The focus at this time should be on a vigorous, coordinated international R&D program.

More than the end date, the important milestone is the decision to proceed. If a decision were reached to build the ILC in the US, the US program would be healthy through the construction period (as was CERN during LHC construction).

* PG understanding

6



FY2007 Funding

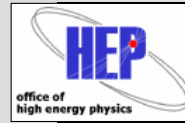


The continuing resolution delayed FY07 decisions. Final appropriations not bad for HEP, but ILC was limited to \$42M without identified support for detector R&D.

DOE plan: \$1800K for detector R&D to be split between supplemental proposals submitted in fall 2006 and continuation of the 'base' program.

NSF plan: Expect overall ILC support to be at least at FY2006 level. (In FY06, NSF awarded \$235K for accelerator R&D, \$300K for detectors, ~\$500K GDE support). Presently expect ~\$375K for detectors, with hope to improve this as budget becomes better defined.

8



Detector Concepts*



Although the main thrust of DOE/NSF funding at present is on generic detector R&D, we understand that over the next several years there will be a growing need to support R&D to define specific detectors.

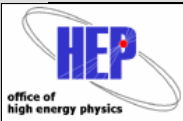
Proposing and building collider detectors takes a comparable time to accelerator construction.

Typically, detector selection process and R&D funding are done by the host laboratory, with funding agency oversight. ILC, as an internationally managed machine, without a site or host lab, breaks new ground and needs new measures.

I continue to be worried that existing detector concepts break along largely regional lines.

* PG personal comments

12



Detector Concepts*



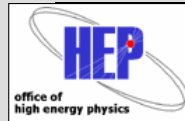
As I understand the present WWS stance, the development and selection of ILC detectors would continue under WWS control with narrowing to 2 detectors by end 2008 - a laudable goal.

Will a free-standing WWS be effective to direct the detector effort as the concepts develop? WWS does not have the organizational structure, funding agency mandate or clear authority needed to manage funds or manage the proposals evaluation process.

The current evaluation of global R&D directions and priorities (e.g. Tracking in Beijing) is useful. The recommendation to create a Detector R&D Coordination Board is welcome.

* PG personal comments

13



Detector Concepts*



Although itself a somewhat ad hoc organization, GDE has achieved stature as the interim ILC 'Laboratory'. It has the ear of funding agencies (through FALC) and can speak for the community to governments. Its reporting line through ILCSC gives structure.

I think it may be useful to bring the detector program under GDE/ILCSC, now that the RDR is complete. To do this would require significant additions to the GDE structure. The recent letter from ILCSC to WWS (to form an International Detector Advisory Group) is a useful start in this direction.

Downside would be relinquishing some community control over the experimental program. The benefit could be greater visibility for the detector effort within governments.

* PG personal comments

14

