GG5

ILC Engineering&Costing – Industrial Issues

„Linear Collider Forum of Europe“

Michael Peiniger, ACCEL (Europe)

Principle issues in industry for ILC (example SRF Linac)

- Early involvment in R&D and prototyping of critical components

  -to get a realistic picture of the technological requirements and costs as soon as possible (good experience in Europe)

- Strong interaction with the labs and funding agencies in all regions

  -to get a realistic basis for short and long term business planning (human ressources, investments, financials)

- Standardisation of the design and specifications/technologies

- Transregional exchange on the learnings at labs and industry during all the project phases

  -to take advantage on the resulting savings in all regions

Can companies deal with different design standards ?

Yes, but value of global standardisation should result in identical desigh standards, which is of no basic problem for industry

Technical information sharing

Is a must, except for the company specific procedures

example cavities: build to print, but machine level company specific

Interlectual properties to be bought if it‘s in advantage to ILC (usual way)

This has been accomplished in many other projects and should be no problem also for ILC

Build to performance versus build to print

During R&D/prototyping phase optimise the procedures and the specifications together with industry and let industry build their mind on potential risks (costs, techniqe, schedule).

Go out to pre-series and series production only if labs and industry understands each other on the potential risks and agree that the potential risks can be handled.

Specialized industry will give performance guarantees (also on complete modules) subject to a risk analysis between the level of the requirements and it‘s corresponding costing.

If risk is low pricing will be low. If risk is high pricing might push the budgets. If risk is too high (serious) industry has no chance to make it. Way out would than be „build to print“ with the performance responsibility on the labs.

So, if ILC conditions allow, set the (e.g. acc.-field-) limit to a value acceptable for specialised industry and push them to ultimate limits with a smart bonus model.

Infrastructure investment

Costs for infrastructure, specific to a project and of no more value after the project, are project costs.

This was true in the past (e.g. LHC, LEP, CEBAF, SNS) and will also apply to XFEL and ILC, ITER etc.

As the potential SRF market will be substantially smaller than in the days of ILC, the majority of the costing for the production infrastructure for ILC are project costs.

Time critical infrastructure may have to be invested prior to contract placement to industry.

Industrial studies

Especially after the experience with SSC and also LHC competent industry need to be involved in the overall project costing.

With the GDE‘s goal to have accomplished a sound costing of the ILC project until end of 2006, industry has to be implemented into the costing procedure from now on.

From what we have learned in this Snowmass workshop so far it might be worthwile to implement a point of contact, may be working group, within the GDE, to coordinate the necessary regional industrial studies and the respective industrial information exchange between the regions.

Issues to address and to further discuss in the GG5-session (proposed by Shekar Mishra)

- 1) Vision of how industry plan to grow in each region to meet the challenge of ILC production. Issues of investment in the infrastructure needed and who should put resources in to them. See XFEL topic
- 2) Model of work between laboratory and industry. See XFEL topic
- 3) Industrialization issues within the three regions See XFEL topic
- 4) Inter regional industrialization issues to work out
- 5) How do we handle intellectual property in regions and inter-regional for this international project.

  Compare with other projects like LHC, ITER
- 6) How do we handle and work on a open cost estimate. Industry to participate from the beginning
- 7) Role of developing countries. to be discussed
- 8) Global participation of international companies on civil construction

  there are potentially more parts one cannot „devide into 3“