Report of the
SLC–SLD Technical Cooperation Task Force

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The group has met twice. For the second meeting, physicists in charge of the SLC areas were invited: J. Clendenin (e^- and e^+ sources), P. Krejcik (damping rings), F.-J. Decker (linac), and P. Emma (arcs and final focus). In both meetings, there was concensus that SLC is operating below its capabilities, and that it is in all of our best interests to improve this. There are many factors which contribute to the poor performance, not all of which are well identified or characterized. It was also agreed that the technical cooperation of SLD physicists would be highly desirable and useful.

While the charge put to the task force indicated that there should be a "preference for areas where we (SLD) have special expertise", the SLC physicists felt that broader participation, as long as it was consistent and well focussed, would also be very helpful. For example, they felt that evaluating performance and investigating problems is generally lacking, so that an SLD physicist could contribute after gaining familiarity with the technical issues and the use of the SCP.

In addition to this general need, some specific areas of potential technical cooperation were noted:

- Background tuning. This has been a traditional area of cooperation, and SLD expends a considerable amount of time and effort on this activity. At a minimum, a second expert (in addition to T. Usher) is required.

- Laser wire. M.Woods and S. Wagner have put forth a significant effort on this, and many SLD personnel have helped with the laser room facilities; more SLD help might be needed.

- 120 Hz data analysis. SLD's data includes a small number of accelerator-related quantities written out at 120 Hz. SLC has ennumerable quantities, but can only snatch 512 beam crossings, hence excluding the low-frequency domain.

- Luminosity delivery and measurements, event rates, and comparisons.

- Feedbacks. (1 Hz jitter.)

- Satellite pulses.

- Various SLD/SLC items: noise hardware and electronics, radiative Bhabha counters, beamstrahlung, CDC HV trip logic maintenance (FB31), laser wire signal detection, etc.
  $\Rightarrow$ an SLD commissioner for these systems ?

The task force believes that assigning SLD representatives to each of the major SLC areas would help establish a common sense of purpose, and most importantly would allow the representatives to determine what technical problems exist and how best to connect these to potential problem solvers. The effort of the representatives would need to be significant and sustained. They would attend the area meetings and also report to SLD on their activities.

A weekly SLC accelerator physics meeting which concentrated on SLC performance issues might be a good forum in which the representatives, as well as SLC physicists, could report their efforts. Continuity over time of format and goals would likely be helpful. An appropriate forum could be the existing 9:00 Monday (or Thursday) accelerator physics meeting.

So the main recommendations are:

1. Establish SLD representatives for each of the major SLC areas, namely e^- and e^+ sources, damping rings, linac, and arcs/final focus.

2. There should be a forum dedicated to SLC performance issues and goals which would bring the areas together to agree on overall problem areas and define accelerator experiments. SLD should fully participate in this process, including reporting on activities and helping to define accelerator studies.

3. Individuals to work on particular issues should be identified. As new technical issues are identified, the SLD representatives mentioned above should facilitate this process.

It is not necessarily the case that helpers have SLC expertise, but that they are willing to spend the effort and learn enough to be useful problem solvers and information gatherers.

The task force realizes that a key to the success of this scheme is finding the "right" people. And finding people who are not already over-committed to existing SLD responsibilities.

The task force should assist in identifying problems and people to work on them. We should help SLD management identify potential area representatives. This should be accomplished as soon as possible, preferably before June 15, so that it will be well established during this run. Progress should be reported at the weekly SLD Commissioning meetings. This effort will be evaluated after the end of this run (August SLD week), after which SLD can decide if it should continue, be modified, etc.