Comments on the TESLA/SBLC Conceptual Design Report (accelerator chapters)

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April 1996

Contents of the CDR

It has been generally agreed that our report should describe the conceptual design of an e+e- Linear Collider for both the S-Band and TESLA approaches. Instead of mixing SBLC and TESLA in common sections (as originally planned for those sections other than Linac Technology), it appears a better solution (w.r.t. the readability of the document) to have two separate chapters on the accelerator designs. This does not mean that there are two separate design groups. In fact, many aspects are studied essentially by the same people for both approaches (e.g. beam delivery system, positron source, etc.).

The detailed accelerator design is for a 500 GeV c.m. collider. Therefore, all sections describing the individual subsystems of the machine should refer to the 500 GeV parameters. However, a consistent concept for the energy upgrade will be included, to be described in a special section of the report. The partyline is that a 1st stage upgrade to 800 GeV can be done without having to change the machine length or geometry (by installing new higher-gradient cavities and doubling the rf-pulse power for TESLA and by approximately doubling the rf-pulse power for S-Band). This "adiabatic" upgrade has consequences e.g. for the layout of the beam delivery system, the beam optics in the linac, the space requirements for the tunnel, etc., which should be briefly described in the respective sections. The upgrade beyond 1 TeV, which requires to increase the length of the machine, will also be described in the above mentioned special section, but a detailed layout for this option concerning e.g. the Final Focus and collimation, is beyond the scope of this report.

As a guideline for the preparation of the CDR, a table of contents containing the proposed structure of the accelerator chapters has been produced, see the LATEX file attached to this mail. The names of the colleagues in charge of coordinating the main sections are included. For several individual subsections, the names of the persons who have volunteered to contribute these parts are also listed.

In the outline, the other chapters (Physics, Detector, FEL) which are part of the complete document are also indicated. Furthermore, the additional options of a stretcher ring for Nuclear Physics and (possibly) a linac-ring e-p collider are shown as appendices. Integration of the FEL and the other option(s) has impact on certain parts of the accelerator chapter, which will need some coordination in the near future.

Technical aspects

It sems unavoidable to use a standard text format for a document of this size and with so many contributors. So everybody is kindly asked to write the text in LATEX and provide the pictures as POSTSCRIPT (preferably ENCAPSULATED POSTSCRIPT) files, whenever possible. Text and pictures should be transferred by e-mail to **brinkman@mail.desy.de**. Please describe which section/subsection is sent, and a list of figures. If available, use the attachment function for transmitting the files (we use the PINE program here to extract the files from the mail). Those of you who are on the AFS-system, just send an e-mail with a list of files and the (public) directory from which they can be copied.

It is intended to make drafts of sections available on the WWW (DESY homepage, accelerator division). Following suggestions by several colleagues, the access will be restricted to members within our community (more precisely: to everybody who knows the user-ID and password). To begin with, tables of the basic machine parameters will be available on the Web within the next days.

Size of the report

Again w.r.t. the readability of the document, we should restrict ourselves to certain page limits. A reasonable size for each of the accelerator chapters is about 250 pages. As a rough guideline to the authors, page limits for the main sections are shown in the table. They are not meant as absolutely rigid, but everybody is asked to be well focused on the really essential points in his/her contribution, so we have a chance to stay roughly within these limits.

Time schedule

Our goal is to complete the CDR by the end of this year. It is foreseen to have a collaboration meeting to discuss the report during the week from Oct. 28 to Nov. 1 at DESY (presumably in the 2nd half of that week, following the TTF meeting). By then a complete draft of all sections should be available on the Web. Since some editing, etc., will be necessary, the contributions must arrive

section	# of pages
Overview	20
Linac Technology	50 (80 for TESLA)
Beam Dynamics	20
Injection System	30
Damping Ring	20
Bunch Compressor	10
Beam Delivery System	30
Instrumentation and Controls	20
Infrastructure	15
Civil Engineering	15
Radiation Safety	8

Table 1: Page limits for the main sections of the CDR accelerator chapters.

here well in advance of the meeting, preferably no later than **Sept. 1**. This schedule is rather tight, but otherwise it will be hard to keep the goal.