

Discussion Paper from ALCSC

Aug. 14, 2003

1. GLC Roadmap (from ACFA GLC Project Report):

The attached diagrams (A), (B), and (C) on the next page illustrates the “Roadmap” towards GLC in physicists’ wishful, optimistic thinking, aiming at maintaining a concurrent operation period between LHC and GLC:

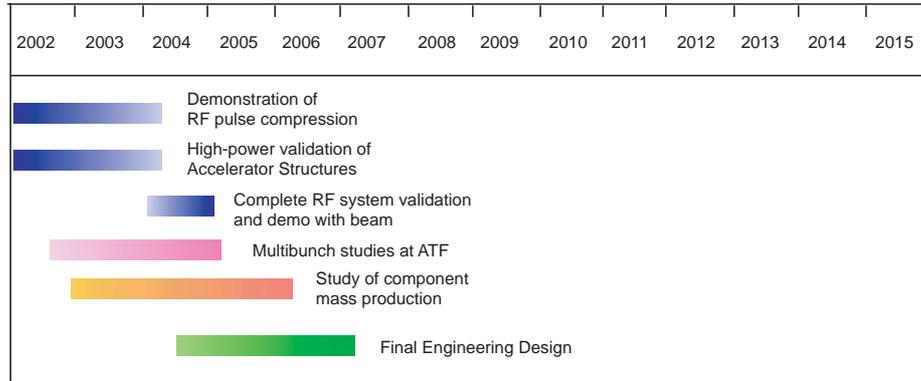
- (A) Activities on accelerator development and design;
- (B) Activities on site studies and selection;
- (C) (Activities on issues with organization and international cooperation for construction and operation.

2. Project Management: Project Office and Management Style (from ACFA GLC Project Report)

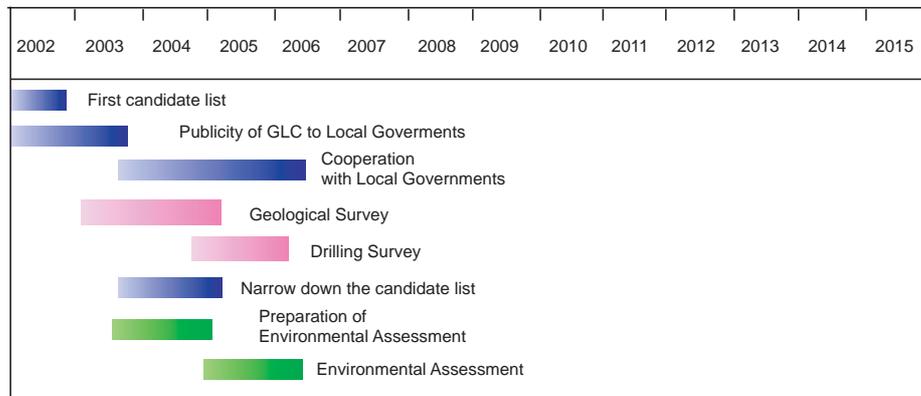
(1) Pre-GLCC: Precursor Organization Prior to GLCC

- Membership:
 - Accelerator / Physics groups from major laboratories willing to make long-term commitment to LC.
- Missions:
 - Conduct advanced-stage R&D and produce engineering design of the whole LC accelerator complex with consensus document on the cost estimate.
 - In-depth studies of prospective site candidates.
 - Interface with government representatives and facilitate promotion of the project and provide necessary technical information during the negotiation processes.
- Term:
 - Until GLCC is legally established.

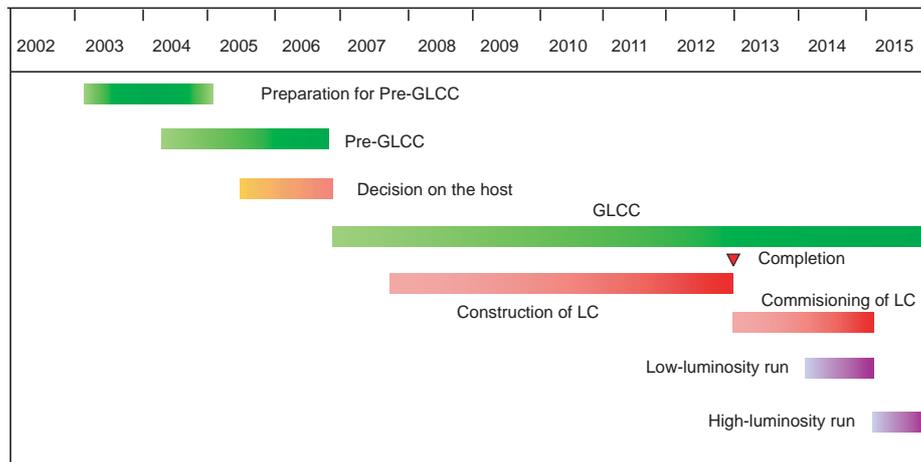
(A)



(B)



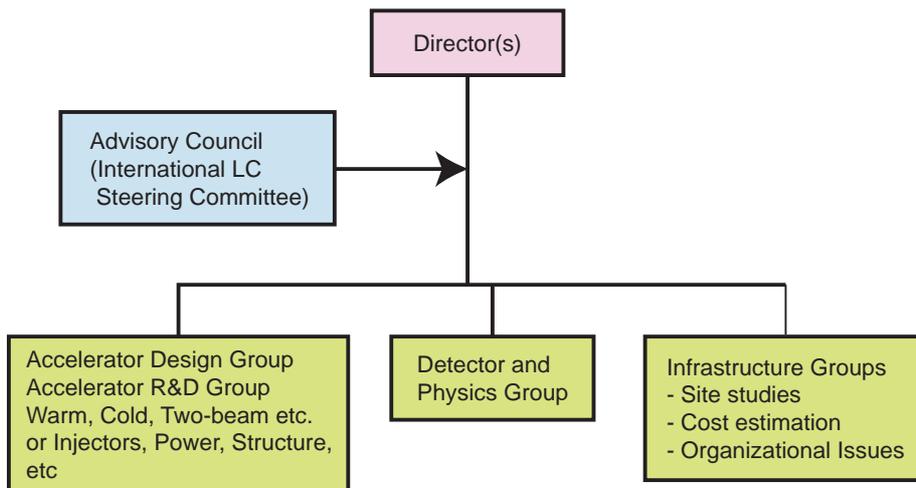
(C)



- Date:
 - Preparatory discussions in 2004 while the Wise Persons Committee's discussion of the ultimate technology.
 - Set up pre-GLCC immediately after the technology choice.

- Structure: See the attached figure
 - Venue of the pre-GLCC is selected by the Advisory Council.
 - Regional centers: one in Asia, North America, and Europe, each, preferably located in a large laboratory.
 - Close regional coordination for R&D and engineering design.
 - ILCSC will be considered to complete its initial mission when pre-GLCC is launched. Pre-GLCC may incorporate most of the ILCSC members as its advisory panel members.

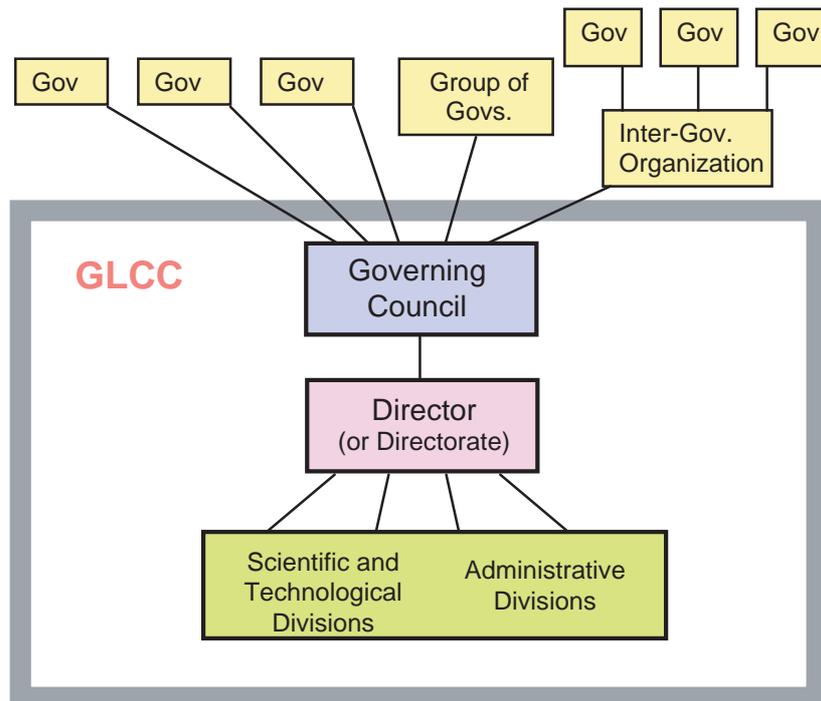
- Creation of Task Force
 - ILCSC should create a task force to determine the role of pre-GLCC.



(2) GLC Organizational Structure:

Possible structure of an international organization for building and operating GLCC in physicists' perception

- An international organization "GLCC" which resembles CERN, rather than extension of existing national / regional laboratories.
- Assume an adequate legal status, deriving from a treaty-based agreement among participating member countries.
- Director / Directorate to be responsible for coordination of final design, construction, commissioning, operation and upgrade of the LC accelerator complex, while reporting to the Council.
- Council, including representatives of member countries / regions, oversees the activities executed by the Director (or Directorate)



3. Forum of Funding Agencies

Existing forum like FALC should be of an interim nature for unofficial exchanges of information and ideas, before a formal discussion framework is established with certain official agreement among participating parties.

- Missions:
 - Discuss first and negotiate later on issues including:
 - ✓ Mechanism of finding necessary resources
 - ✓ Site selection
 - ✓ Allocation of necessary resources among countries / regions
- Date:
 - Informal forum: already existing
 - Official forum: during pre-GLCC's working
 - Terminated when GLCC is formed

4. Wise Persons' Committee (WPC)

- Missions:
 - Make recommendation on LC technology to ILCSC
- Members:
 - 4 persons nominated from each region.
 - Non-overlapping with those of parameter- and accelerator-subcommittees.
 - Each region responsible to nominees' qualification.
 - Nominees are, preferably:
 - ✓ one should have significant experience of management of large project or that of leading large accelerator facility,
 - ✓ two should have experience of leading large experimental group,
 - ✓ one should be highly appreciated theoretical physicist.
- Date:
 - Selection of members: September, 2003.
 - Conclusion of the committee: before the end of 2004.
- Others:
 - Meetings except for executive sessions should be open,
 - Parameter subcommittee provides critical parameters on physics,
 - Accelerator subcommittee assists WPC by providing any information that the WPC asks, concerning issues associated with the accelerator technologies,
 - ILCSC closely collaborates with WPC by responding whatever WPC requests, say, visiting relevant labs, meeting places, possible agenda, etc.

5 Issue on Cost Estimate

The cost for construction and operation of the LC is an important factor to make a technology choice. However, the detailed cost estimate is only possible after full R&D is made and the engineering design is completed. This is exactly what preGLCC should do. Hence WPC needs a special guidance of how to deal with the cost estimate given by each proponent:

- The cost estimate of each proposal should include those for construction and operation.
- The construction cost should be estimated at a generic site.
- Important questions exist concerning the treatment of contingencies, escalation, labor costs, budget evaluations for construction and operation of component production facilities, conventional facilities and others. AC (or its sub-WG) may be assigned responsible for devising a set of formulae for reviewing the cost estimates for LCs on equal footing in mutually translatable languages.
- Each region reviews the reliability of each cost estimate, which is presented to the accelerator sub-committee (AC).
- AC reviews all of them and makes a report on the current cost estimate of each project.
- The report is given to WPC for discussion.

The cost for construction and operation depends obviously on the site. This difference is crucial for site selection but should not be used for the technology choice. It is a matter of an interested country / region which wishes to host the LC.