

ILCJ-CTF

2023/1/21 Kick Off Meeting

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ILCJ-CTF aim

- Organize RD effort of ILC physics, detector, and accelerator to realize ILC in Japan.
- Sharpening, clarifying, and broadening the physics of ILC.
- Solving technical issues (reliability, engineering design), performance improvement of ILC accelerator and detector.
- Promotion within the high-energy and related communities.
- Member : M. Kuriki(Chair), S. Asai, N. Saito, T. Suehara, M. Tomoto, Y. Ushiroda, and M. Ishino.

How to Facilitate ILC activity

- The overcoming the project's gap is an issue not only for ILC, but also for every high-energy physics project.
- Staged project initiation, e.g. CD process, is not common in Japan. Budgets are suddenly approved and huge projects are required to be initiated in short time.
- The project has to be “ready” before it is officially approved.
- The purpose of this TF is to stimulate community-wide efforts for research activities of the ILC prior to formal approval of the project.



What is management?

- Project management is the process of leading the work of a team to achieve all project goals within the given constraints.
- Specific knowledge, skills, tools and techniques (elements) should be delivered as required to complete the project.
- Some elements can be supplied by the voluntary cooperation of individuals due to interest : Generic.
- On the other hand, many elements are generally difficult to supply through voluntary cooperation. Therefore, those elements need to be supplied by organizational involvement: Project Oriented.

Promotion of Project Oriented is the key.

- Management work is essential for Project Oriented elements, because it will not provided without management.
- All elements are indispensable. Management work for Project Oriented elements is the key of the project execution.
- It might be similar to the social infrastructure. Investment to the infrastructure is not attractive, but any activity is not possible without it.



Category of RD items

- It is essential to define appropriate categories for research subjects because various nature subjects should be addressed.
- This categorization is important for the strategy to implement this R&D effort.
- **Applicability** is the key. If the applicability of an issue is high, it could be implemented in another context. In other word, the justification is possible for reasons other than the project.
- In addition, the **temporal characteristics** are also important.

Category of RD items

- **Time Characteristics**

- Issues assuming 250 GeV ILC are defined as **ILC in the near future.**
- Issues assuming ILC Energy Upgrade are defined as **ILC in the far future.**

- **Applicability**

- Issues with high applicability are defined as **Generic.**
- Issues which are applicable only for ILC are defined as **Project Oriented.**

	A) Near Future	B) Far Future
1) Generic	A1: Generic and assumed in ILC 250 GeV	B1: Generic and assumed in ILC energy upgrade
2) Project Oriented	A2: Project oriented and assumed in ILC 250 GeV.	B2 : Project oriented and assumed in ILC Energy upgrade.

- A1 and B1 have high general applicability and can be positioned on a broad technological context and have potential for a wide range of collaborative research. Therefore, we will support the establishment of joint research organizations and budget applications for these proposals.
- A2 and B2 are necessary for project execution but are difficult to place in a general technical context. These issues require organizational promotion including funding support.

ILCJ-CP (Collaboration Package)

- Collaboration Packager(CP) is the approved item by ILCJ-CTF.
- Support for CP by ILCJ-CTF depends on the category.
- A1 + B1 : Support for organization and applying competitive grant.
- A2 + B2 : Support for organization and research activity.
- All CPs will be conducted in collaboration with KEK and/or ICEPP.

ILCJ-CP Framework

Category	Support	Supporter
A1 Detector	Support applying to Grant	EFG and DTP (IPNS)
B1 Detector	Support applying to Grant	EFG and DTP (IPNS)
A2 + B2 Detector	Financial support	ICEPP and IPNS
A1 + B1 Accelerator	Support applying to Grant	KEK Acc. and PASJ
A2 + B2 Accelerator	Support research	Acc. RD budget

- In this WS, we focus on issues for A1+B1 Detector and Accelerator.
- We discuss A2+B2 detector in the next WS.
- This was done because the topic of detector technology in general is an appropriate entry point of interest.

ILC Detector Activity

- ILD and SiD had been studied as ILC detector concepts.
- Concepts for ILC and SiD had been fixed, but the technology for each detector is not fully determined. Any new technology can be introduced before the real construction.
- A completely new concept other than SiD and ILD is possible by assuming a state-of-the-art detector technology.
- In addition, industrialization, assurance, and quality control is important from the project management point of view.
- Various interesting items can be positioned as studies for ILC detectors.

ILC Accelerator Activity

- The basic technology for ILC had been well established as reported by IDT prelab. proposal.
- Even though, there are tons of accelerator issues to be studied before ILC construction;
 - Industrialization,
 - Performance Assurance,
 - Specific design,
 - Engineering design,
 - Performance improvement.

Collaboration with

Advanced Industrial Science and Technology (AIST) 

- An effort to extend collaborative work for (but not exclusively for)
 - engineering design of the detector
 - mass production, quality control,,,
- First remote meeting on January 13, 2023
 - AIST 5 persons
 - former board of director, electronics and Manufacturing, Metrology Institute
 - ILD
 - Takeshita(Shinshu), Suehara(Kyushu), Takahashi(Hiroshima)
 - Possible collaboration in the area of
 - new material for TPC GEM
 - Bonding issues for Si-ECAL
 - Mass production for Scintillator-ECAL
 - Power pulsing
 - > AIST could consider works inside AIST as well as coordination for outside of AIST
- NEXT
 - will visit AIST for further discussion possibly in February (or March)

Need your participation

- We encourage your participation on the various issues proposed today.
- If you have any new suggestions, please propose it. ILCJ-CTF might actively support it.
- Your participation will be a steady step toward the realization of the ILC.



ILCJ-CTF is a promotion unit

- Today is just a kick-off meeting. A series of WS will be held periodically.
- In addition to the WS, we will have meetings for individual groups. Members of ILCJ-CTF will visit your laboratory to discuss possible collaboration for ILC project.
- An invitation is welcome.
- We might visit your laboratory without any invitation.

