

## **DERNIERES NOUVELLES DE L'ILC**

### **IDT-EB Prelab document**

(cf S. Stapnes @EU-ILC June meeting)

**... and MEXT feedback**

### **ILCX Workshop in October 2021**

# ILC INTERNATIONAL DEVELOPMENT TEAM

Public web site: <https://linearcollider.org/>

ICFA

ILC-IDT

Executive Board

Andrew Lankford (UC Irvine): Americas Liaison

Shinichiro Michizono (KEK): Working group 2 Chair

Hitoshi Murayama (UC Berkeley/U. Tokyo): Working group 3 Chair

Tatsuya Nakada (EPFL): Executive Board Chair and Working group 1 Chair

Yasuhiro Okada (KEK): KEK Liaison

Steinar Stapnes (CERN): Europe Liaison

Geoffrey Taylor (U. Melbourne): Asia-Pacific Liaison

Working group 1  
Pre-lab set-up

Working group 2  
Accelerator

Working group 3  
Physics & Detectors

Scientific secretary: Tomohiko Tanabe (KEK)

Communication team led by Rika Takahashi (KEK)

Unlike LCB/LCC, **ILC-IDT is focused on the ILC.**

KEK provides administrative, logistic and some financial support.

**The Proposal for the ILC Preparatory Laboratory is now published:**  
<https://arxiv.org/abs/2106.00602>

“This proposal is intended to provide information to the laboratories and governmental authorities interested in the ILC project to allow them to consider participation”

**Supplemented by Technical Preparation Document:** <https://zenodo.org/record/4742019#.YLfkLi0RrQY>

**Several announcements, e.g**

<http://newsline.linearcollider.org/2021/06/01/ilc-preparatory-laboratory-proposal-released/>

**Endorsed by IFCA, (being) sent to IDT WGs, ICFA, ECFA and Lab directors**

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## 3 Required legal structure and Pre-lab start-up process

### 3.1 Legal structure

The Pre-lab as a whole will be organised and governed as a collaboration of laboratories worldwide regulated through Memoranda of Understanding (MoUs). However, members of the Central Bureau will mostly be employed in the host location in Japan. Thus a Japanese legal framework would be required for the employment of the members and operation of the Central Bureau. If such a legal framework can also accommodate the whole Pre-lab organisation, it may strengthen the governance of the Pre-lab, although that is not mandatory.

The most appropriate solution for the legal structure for this purpose appears to be a “General Incorporated Association” (GIA) under Japanese law. A GIA can be easily started by “founders”, at least two of them who are natural or judicial person, registering it to an appropriate authority following Japanese law. Other members can join and govern the GIA as “stakeholders” through the “General Assembly” of the GIA together with founders. With this structure, the members of the Central Bureau can be paid as employees of the GIA. If the GIA is recognised as “nonprofit”, no corporate tax will be charged for the income such as the government grant and common fund payment by the laboratories.

The GIA could be only for operating the Central Bureau in Japan with a simple structure. If it were to incorporate the whole Pre-lab, an additional structure needs to be defined through “Articles of Association”.

The GIA must be established before the Pre-lab since it forms the legal structure under which the Pre-lab operates. Other than this, the two organisations can evolve in

# PRELAB ORGANIGRAM

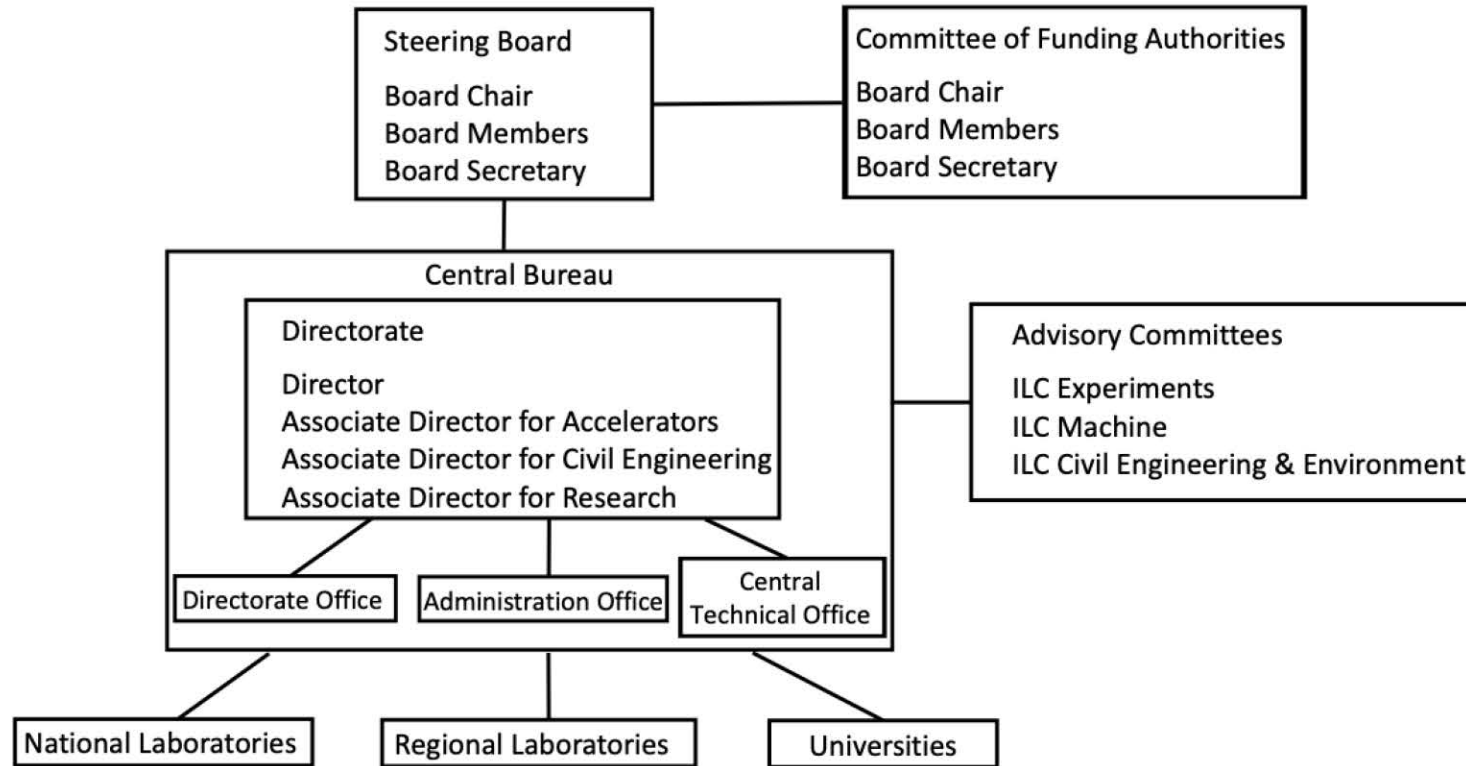
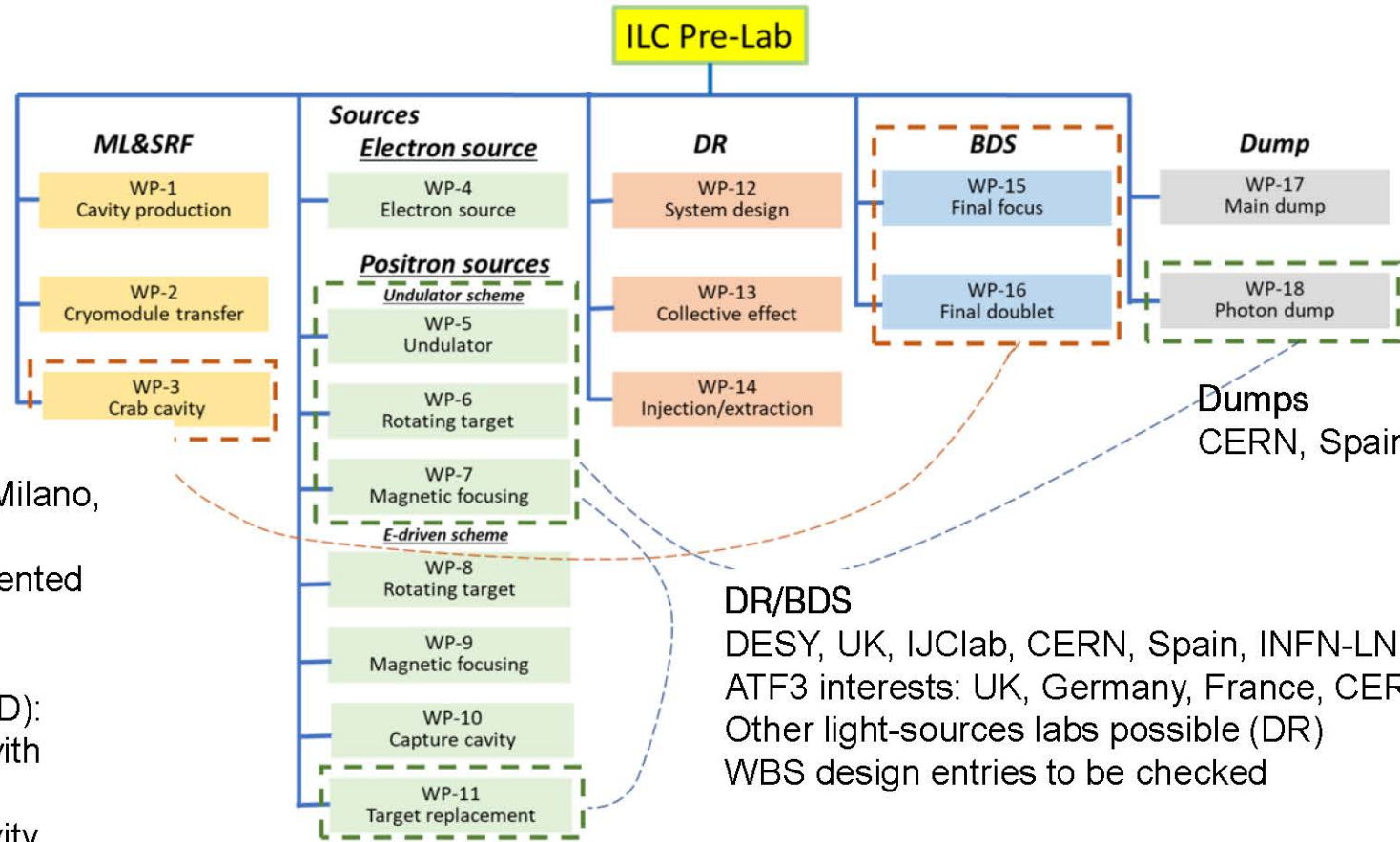


Figure 1: Pre-lab Organisation Chart

# Pre-lab work-packages



## ML & SRF

CEA, CERN, CIEMAT, UK, INFN Milano, DESY

Not all European SRF labs represented (see later)

Additionally (in WBS but not in TPD):

- Long term cryo collaboration with CERN.
- HiEff RF another relevant activity
- SRF “basic” R&D for fabrication improvements or long term performance improvements (i.e. for upgrades)

Dumps  
CERN, Spain

## DR/BDS

DESY, UK, IJCLab, CERN, Spain, INFN-LNF  
ATF3 interests: UK, Germany, France, CERN, Spain  
Other light-sources labs possible (DR)  
WBS design entries to be checked

## Sources

DESY, UK, CERN

IJCLab also, other groups also possible (FCC-ee, Dafne)

Table 2: List of estimated material costs and human resource requirements for deliverables of the technical preparation activities, where ILCU is defined in the text. (Resources for the infrastructure needed for deliverables are not included.)

## PRELAB RESOURCES



Domains	Material cost [MILCU]	Human resources [FTE-yr]
Main Linacs (ML) and SRF	41.25	285
Electron Source	2.60	6
Positron Source	5.85	15
Damping Ring (DR)	2.50	30
Beam Delivery System	2.20	16
Dump	3.20	12
Total	57.60	364

Table 3: Estimated human resource requirements for engineering design and documentation.

Item	Human resources [FTE-yr]
Accelerator/Engineering design and integration	75
Sources	35
Damping Ring (DR)	30
Beam transfer system from DR to ML	25
Main Linacs (ML)	60
Beam Delivery System	25
Total	250



# EXPERIMENTS TIMELINE

- **2021:** The IDT calls for EoIs, to be presented in a dedicated workshop after Pre-lab start
- **2022:** Assumed start of the Pre-lab.  
EoI presentations in dedicated workshop. The process of moving from EoI presentations towards LoI documents is community driven. Initial dedicated ILC R&D funds will be needed.
- **2023:** LoI submissions and presentations. The ILCXAC will initiate its evaluation of the LoIs. R&D continues.
- **2024:** ILCXAC recommendations of initial ILC experiments to proceed towards TPs. R&D towards the TPs.
- **2025:** TP submissions and presentations of these experiments.  
Continuation of R&D and recommendations by the ILCXAC based on the submitted TPs.
- **2026-27:** Approval of the experiments, based on the TP and ILCXAC recommendations, by a committee set up by the ILC Laboratory. Recommendations to proceed towards Technical Design (TDR) Reports. Funding requests for construction are being prepared and submitted according to the relevant procedures for the participating institutes.
- **2027:** The ILC laboratory allows construction to start and construction funding spending for experiments or experimental subsystems based on TDRs approvals.

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*Likely to be delayed...*

# **MEXT FEEDBACK ON SUBMITTED DOCUMENTS**

(June 21)

**KEK informed the IDT EB that the Pre-lab budget request would not be made for the 2022 Japanese fiscal year since MEXT considered it to be premature.**

**It is anticipated that MEXT will quickly start forming a panel to review the submitted documents for validating the proposed process, where the technical part on the accelerator and infrastructure is under the responsibility of the Pre-lab. The forthcoming work by the IDT already planned should also provide sufficient evidence to the panel demonstrating that the Pre-lab will be able to deliver its promise.**

**KEK also informed us that MEXT expressed their intension to exchange opinions with government agencies in the United States and Europe on the ILC.**

## ILCX 2021: Let's discuss about possible experimental opportunities at the ILC

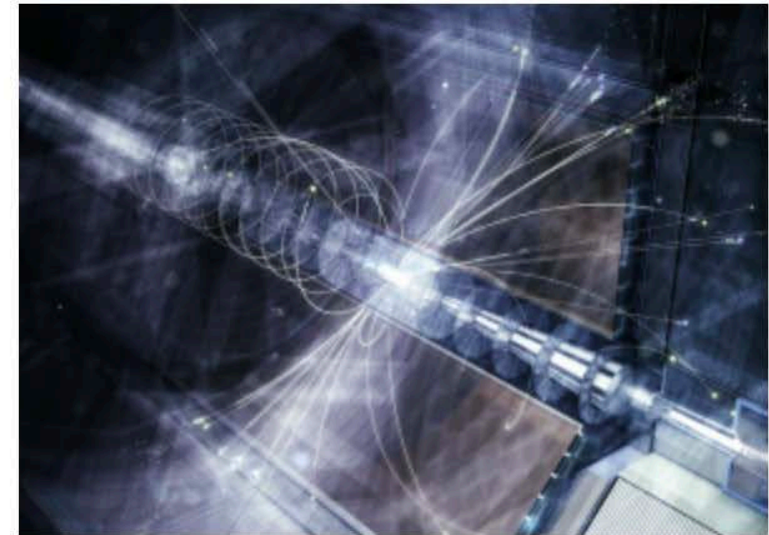


Hitoshi Murayama | 1 June 2021

The ILC International Development Team (IDT) will hold the ILC Workshop on Potential ILC Experiments (ILCX) , from 26 – 29 October, 2021.

With the growing anticipation that the preparatory laboratory (Pre-lab) will be launched in the near future, we would like to initiate serious discussions about all the possible experimental opportunities at the ILC laboratory. The workshop will address all the aspects of the collider program at the Interaction Point (IP), including ideas for new detector technologies or concepts, detector performance and physics reach, software and computing, and theoretical developments. In addition, possible beam dump experiments, forward detectors near the IP, off-axis far detectors, experiments with extracted beams for particle physics and other areas of science, including e.g. nuclear physics, condensed matter physics. Some of these ideas will require additional infrastructure and civil engineering, and therefore need to be incorporated into the ILC site planning during the four years of the Pre-lab, hence discussions is needed rather soon.

The workshop organizing committee is the Executive Board of IDT, and the program committee is the Steering Group of Working Group 3 (Physics and Detector). Given the uncertainties with the COVID-19 situation, three possible styles are being prepared in parallel: (1) in-person meeting in Tsukuba, Japan, (2) hybrid meeting on the KEK site, and (3) fully online meeting. Decision between (1) vs (2,3) will come by the end of June. In the case of in-person meeting, a visit to ILC-related sites at KEK is being arranged on Oct 25, while an excursion to the candidate ILC site in Tohoku is being planned after the workshop.



ILC collision image. Image: Rey. Hori

The ILCX2021 website has opened. <https://agenda.linearcollider.org/event/9211/>

# ILCX: Timeline & Milestone

Timeline	Milestone
mid-May	Website open
mid-May	1st announcement
early June	Program coordination & session convener nomination
late June	Decision of Plan-A/B or Plan-C
late June	1st circular & registration open
mid-Sep.	Decision of Plan-A or Plan-B
26 October	Day 1 of WS

We are here

