

15 March 2021

ILC International Development Team: -status report-

Presentation at Plenary Session of
LCWS 2021
CERN, 15-18 March 2021

Tatsuya NAKADA
EPFL (Swiss Federal Institute of Technology Lausanne)
ILC International Development Team, Executive Board Chair

Reminder for how it happened

- In February 2020 ICFA/LCB meeting at SLAC:
after the presentations by
Mr. H. Masuko, Deputy-Director General, MEXT Research Promotion Bureau
Hon. T. Kawamura, Chairperson of the Federation of Diet Members for the ILC
ICFA asked the LCB to propose a way to move to the preparatory phase for the ILC to be constructed in Japan.
- LCB worked out a proposal to setup the International Development Team (IDT), with KEK as the host, to pave a way to establish the ILC Pre-laboratory.
- In June 2020, LCB/LCC ended their terms defined by the ICFA.
- In August 2020 ICFA meeting
ICFA setup the ILC IDT and appointed the members of the Executive Board, with an aim to establish the ILC Pre-lab within ~1.5 year.
- Since then,
the IDT Executive Board has started working.

Why Pre-lab?

- **Facilities and resources are needed** for the technical and engineering preparation work now to obtain a reliable cost estimate for the ILC that will be essential **for the negotiation and reaching an agreements on the international cost sharing**. (Some of the costs depend strongly on the site.)
- **Framework and support** is needed for the community for developing the ideas and preparing proposals for the experiments at the ILC facilities.

Some organisational structure is required, although it is before the decision of the ILC.

Why IDT?

- The ILC is envisaged as **a global projects with a fair share of the cost, mostly in the form of in-kind contribution for the accelerator, among the participants**, while the infrastructure cost should be taken cared by the host country, i.e. Japan: \Rightarrow a truly international project.
- The natural consequence is that the Pre-lab will also be a global enterprise, thus making an international effort to set-up.

Reminder for ICFA mandate for the IDT

- Clarifying the function and organisation of the ILC Pre-Lab based on the KEK International Working Group report,
- Developing a common understanding for the condition to start the ILC Pre-Lab,
- Providing an international framework for the ILC accelerator effort and coordinating further R&D and engineering design work for the ILC in order to sustain the community effort and to guarantee a smooth transition to the ILC Pre-Lab phase,
- Providing an international framework for the ILC physics and detector activities and coordinating physics and detector R&D effort in order to sustain the community effort and guarantee a smooth transition to the ILC Pre-Lab phase,
- Discussing with international partners (e.g. universities, national and regional laboratories) for resources needed for the ILC Pre-Lab, and
- Providing necessary information to the national authorities to support their discussion of the establishment of the ILC Pre-Lab.

Reminder for IDT organisation

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.

WG1

- Members:
 - Members from Europe (nominated by the Laboratory Directors Group)
 - ▶ Paul Collier, Brian Foster, Juan Fuster Verdu, Maksym Titov and TBC (Eckhard Elsen)
 - Members from Americas (nominated by the national laboratories)
 - ▶ Bruce Dunham, Stuart Henderson, Reiner Kruecken, Joseph D. Lykken
 - Liaison to the Japanese community, industry, politics and candidate site region
 - ▶ Satoru Yamashita
 - Ex Officio (EB members)
 - ▶ Andrew J. Lankford, Shinichiro Michizono, Hitoshi Murayama, Tatsuya Nakada, Yasuhiro Okada, Steinar Stapnes, Geoffrey Taylor
 - Scientific secretary
 - ▶ Tomohiko Tanabe

⇒ **WG2 and WG3: talks by S. Michizono and H. Murayama, respectively**

Recent activities

- Communication team is working: e.g., (almost) monthly ILC Newslines and discussion on other activities on going.
- WG1 started to work on the Pre-lab organisation and legal framework
- WG2 has been busy compiling the list of technical work and make it work packages.
- WG3 newly organised with sub-groups and regular meetings and work started.
- Preparation of the interim Pre-lab proposal: ~30 page document

ILC Newsline

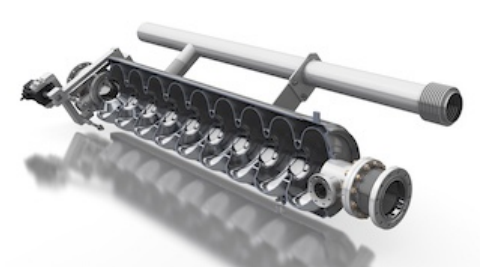
ILC Newsline | The Newsletter of the International Linear Collider

11.03.21, 00:35



26 FEBRUARY 2021

DIRECTOR'S CORNER



[ILC Pre-Lab preparation on the accelerator](#)

by Shinichiro Michizono

Let's talk cavities and cryomodules! Accelerator Director Shin Michizono brings us up to date with the latest developments on the ILC machine as well as plans and tests for the next phase, leading to the next big milestone, the Engineering Design Report.

AROUND THE WORLD

[New organisation in Tohoku, the ILC's potential host region](#)

by Rika Takahashi

Interim Pre-lab proposal contents

- Organisational structure and governance model
- Possible legal structure and Pre-lab start-up scenario
- Work packages for Machine technical work
- Machine engineering design work
- Civil engineering and site related work
- Timeline for preparing the physics programme
- Reference cost for the Pre-lab work

Preliminary draft with all the contents exists, and editorial work starts now. Also waiting for the final report from the technical review on the work package list. Plan to finish in a month or so.

Current idea for the Pre-lab governance model

- Pre-lab is set up as an international collaboration of national, intergovernmental and university laboratories governed through the Memorandums of Understanding (MoUs).
- Technical preparation works are defined as work packages and delivered by the participating laboratories as in-kind contributions..
- Assembly of the participating laboratories is the highest decision making body of the Pre-lab. A forum for the funding agencies and national authorities to monitor the progress.
- Directorate headed by the director is running the Pre-lab and coordinate the overall work, but the execution of the work packages are fully under the control of responsible laboratories, including the resource acquisition.
- Pre-lab facilitates the community to develop ideas, to make R&D and to form collaborations for designing and proposing the ILC experiments.

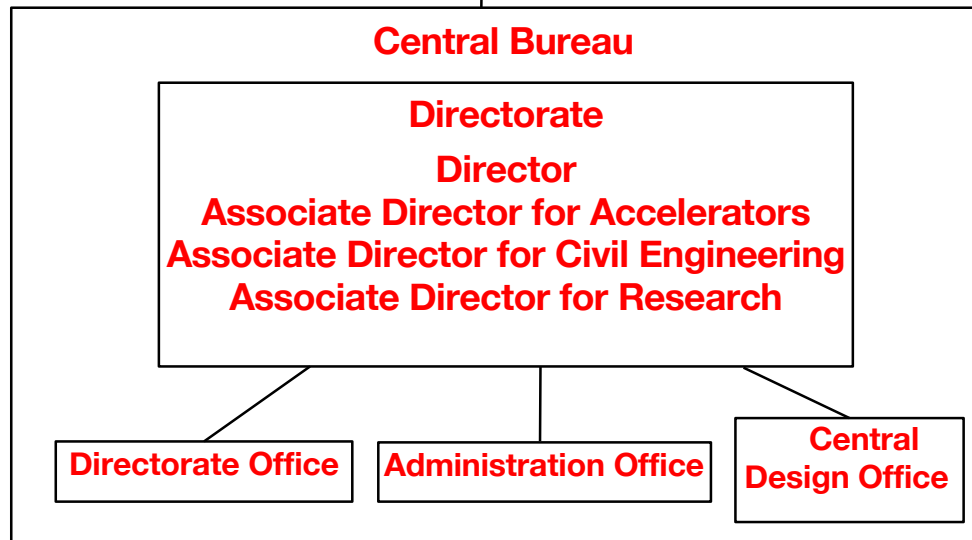
Current idea for the Organisational structure

Decision making body by the representatives of laboratories providing In-kind contributions



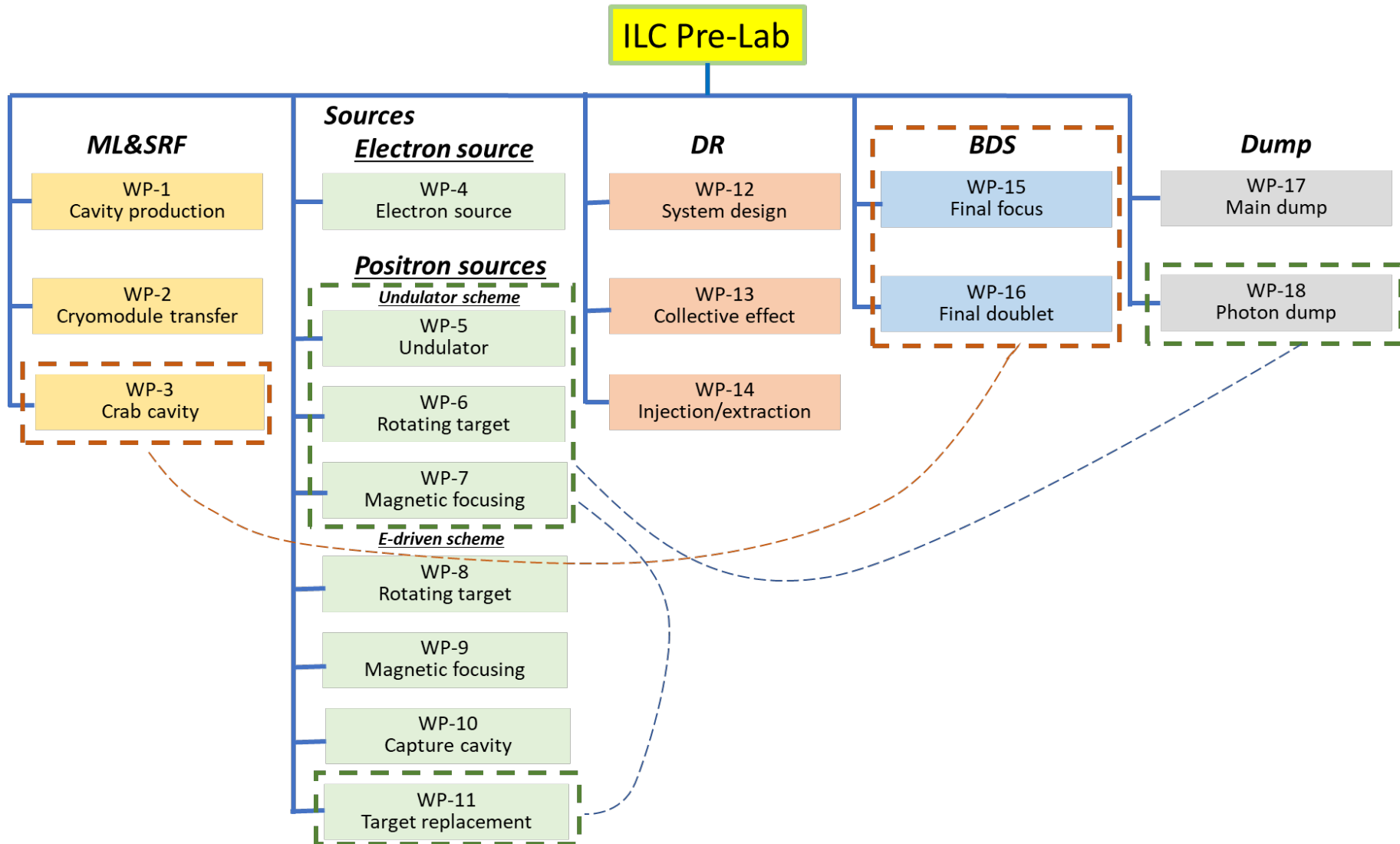
A forum of funding agencies and national authorities the monitor the progress

Executive body of the Pre-lab and supporting groups located in Japan



Participants (stakeholder) of the Pre-lab providing work package deliverables as in-kind contributions

Pre-lab machine work packages



Technical preparation reference cost

- Should be used as a reference by the laboratories for their resource evaluation.

Actual cost needs to be worked out by the laboratories, since it depends on the laboratory to laboratory, e.g. Needs for additional infrastructure costs, etc...

1. ML&SRF:
WP-1
WP-2
WP-3
2. Electron Source:
WP-4
3. Positron Source:
3.1 Undulator scheme:
WP-5
WP-6
WP-7
3.2 e-Driven scheme:
WP-8
WP-9
WP-10
WP-11
4. DR
WP-12
WP-13
WP-14
5. BDS
WP-15
WP-16
6. Dump
WP-17
WP-18

Under review now!

- ILCU = 2012 US\$ estimate
- More detailed breakdown will be available upon request for the laboratories

IDT work plan for the coming days

- IDT is now **ready to start discussion with laboratories**
 - to identify matching between the work packages and **interest and expertise of laboratories**.
 - to understand conditions where the laboratory **could consider to signup for a work packages**.
- Further develop the governance model and organisational structure reflecting the political development
- Explore ways to **start the Pre-lab**
- Keep **stimulating the physics community** through promoting new physics ideas and facilitating common effort.

NB: It is planned that the progress will be assessed by the ICFA end of this year