Status of the ILC

-Activities of the International Development Team (IDT)-

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Contents

1) Introduction

The IDT established by ICFA in August 2020 has been supporting the Japanese HEP community, who had proposed to host the ILC in Japan as a global project.

- Working Group 1: Giving advices for founding the ILC Preparatory Laboratory, Pre-lab: (MEXT considered that it was premature for establishing a Pre-lab.)
- Working Group 2: Forum of the accelerator community interested in the ILC: Through regular meetings, it established the accelerator work packages for the Pre-lab proposal and ILC Technology Network (ITN). It follow the ITN activities as well as the ILC Cost Update work.
- Working Group 3: Forum of the community interested in ILC physics: Through regular meetings, it organises various initiatives to promote and develop further the ILC physics potential, collaborates with other e^+e^- Higgs factory physics groups and coordinates the conference presentations.
- International Expert Team: Analysing the development in the ILC international discussion: It reported the analysis on the cause of the current deadlock in the international discussion and will seek a way to make a step forwards.

2) Current activities to keep the ILC as a forefront option

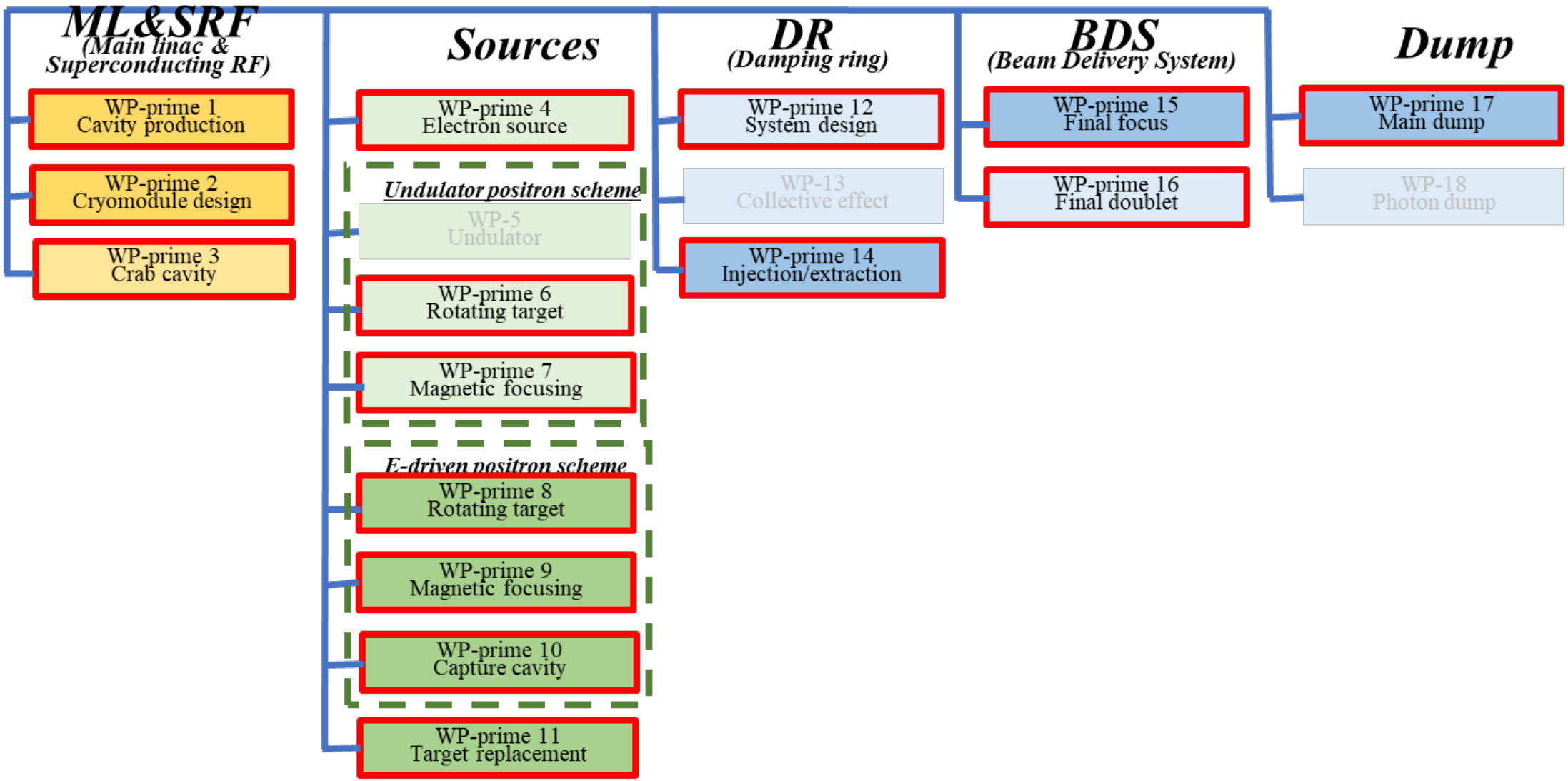
1. Continuing the engineering work:

The ILC Technology Network is being established for executing some of the time critical Pre-lab work packages, also useful for the accelerator advancement in general. Extra funding for the KEK by MEXT and resources from national laboratories for Europe (also CERN) and Asia, or from the US-Japan programme.

- Main linac and SRF
- Sources
- Damping ring
- Beam delivery system
- Beam dump

FR, DE, ES, IT, JP, KR, UK laboratories have identified subjects of interest and some work started, US laboratories require funding through U.S.-Japan Science and Technology Cooperation Program in High Energy Physics. At the moment, project is managed by the WG2 steering group with S. Michizono as an interim leader. Once a sufficient number of laboratories (currently CERN, KEK and Korea University) are formally engaged, it should develop an independent structure agreed by the ICFA to be discussed at the ITN satellite meeting on Friday.

Time-critical WPs



2) Current activities to keep the ILC as a forefront option

2. Updating the ILC cost

The ILC cost is being updated to take
a) inflation and currency fluctuations, and
b) three different energies, 250 GeV, 350 GeV and 500(550?) GeV
into account, by early 2025.
NB: For the 250 GeV staging document in 2017(8), a) were not so important, but now they are!!!

In general, it will reply very much on the knowledge gathered during the TDR work:

- For SRF cryomodules, experiences from EU-XFEL LCLS-II-HE and results of inquiries to industries will be incorporated.
- The rest of technical system will be based on applying appropriate scaling factors to the solid TDR database.
- Civil construction and site will be reevaluated without mentioning explicitly a particular site.

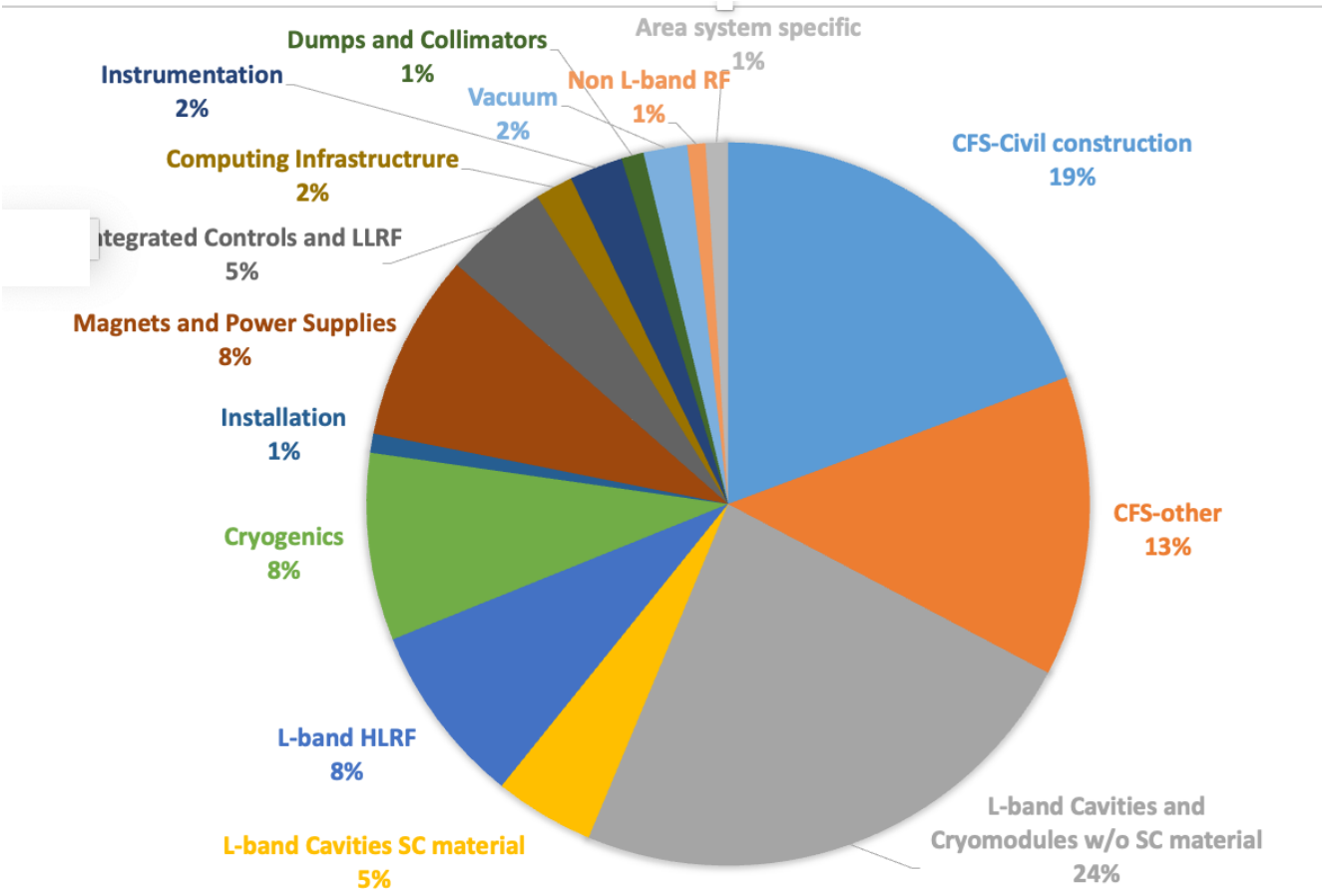
The cost will be given in ILC value Unit (2023USD). Effort will be made to present the cost in a transparent manner: it could be translated for different currencies and locations.

Cost update task force members:

Gerry Dugan	(Cornell)
Benno List	(DESY)
Marc Ross	(SLAC)
Hiroshi Sakai	(KEK)
Nobuhiro Terunuma	(KEK)
Nick Walker	(DESY)
Akira Yamamoto*)	(KEK)
and from IDT EB	
Andy Lankford	(UCI)
Shinichiro Michizono	(KEK)
Steinar Stapnes	(CERN)

*)Task Force leader

Cost distribution for ILC250



2) Current activities to keep the ILC as a forefront option

3. Supporting the ILC Japan and KEK effort in the aspect of the international discussion

- The ILC Japan and KEK came to the following conclusion: To make a progress in the ILC discussion with the Japanese government, a consensus on promoting the ILC as a global project among the partner countries must be established first, before discussing the site and host issue, which will then be the second step. In this second step, the Japanese community hopes that the Japanese government will begin to consider favourably expressing their interest in hosting the ILC. They are seeking support by the politicians, MEXT and industries for pursuing this road.
- Vis-a-vie the European Strategy update, this is a delecae issue considering the global benefit and needs of particple physics as whole, taking the very long-term view in consideration.
- IDT, through IEP, has started to bring this idea for discussion with countries with strong ILC communities in the coming IEP meeting in Prague on 21 July.

3) Conclusions

- ILC remains as a forefront for the next HEP collider project, i.e. a Higgs factory with the engineering work by ITN
- ILC cost update will be completed in early 2025 for the discussion in the European Strategy process.
- IDT will continue supporting the ILC community through WG2 and WG3
- IDT will continue supporting the Japanese HEP effort in the aspect of international discussion through the IEP (next meeting on 21 July in Prague). This is a delicate issue vis-a-vie the European Strategy Update.
- IDT participates in the general study of a Higgs factory and follows, with an interest, recently started effort to develop a long-term vision/roadmap for a linear collider.