

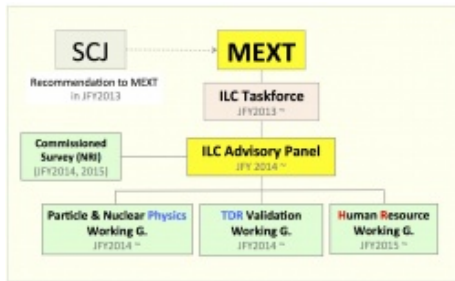
NEWSLINE

THE NEWSLETTER OF THE LINEAR COLLIDER COMMUNITY

DIRECTOR'S CORNER

One step further with the ILC Human Resource Working Group activities at MEXT, Japan

by Akira Yamamoto



The Japanese ministry of education, culture, sports, science and technology MEXT has been investigating the ILC project and the feasibility for it to be hosted in Japan with three working group activities on “Particle and Nuclear Physics” and “Technical Design Report validation” since JFY2014 and “Human Resource ensuring and training” since JFY2015, under the supervision of the ILC Advisory Panel coordinated by MEXT.

AROUND THE WORLD

International Linear Collider community meets at ECFA workshop LCWS16

by Ricarda Laasch



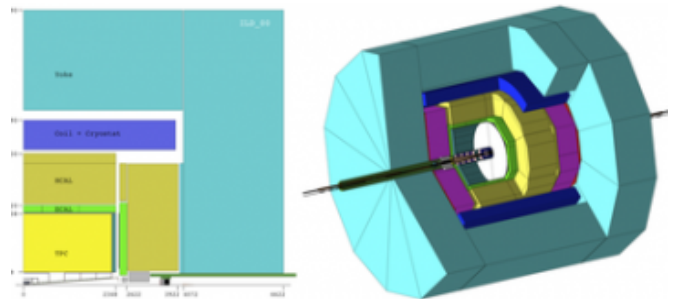
The European Committee for Future Accelerators (ECFA) hosted a Linear Collider Workshop from 30 May to 5 June in Santander, Spain, and offered many opportunities to exchange knowledge and technical know-how to over 200 scientists from all around the world. The ILC community and the

CLIC community used this workshop to come together and present their recent developments and new findings in many plenary talks and a large number of parallel sessions. Both projects show their steady progress. But not only science and advancements were the focus of the workshop – also industrial partners and important political developments had their slot on the packed workshop schedule.

FEATURE

The new ILD structure

by Nina Laskowski



The International Large Detector (ILD) is one of two detector concepts which are under study for the International Linear Collider. ILD started about ten years ago with the merger of two different concept groups. The concept group developed a detector design which was documented in the ILC’s Technical Design Report TDR. Over the past few months ILD has given itself a new structure, to address the future challenges of the ILC project.

IN THE NEWS

from *Iwate Nippo*

21 June 2016

ILC建設に年1100人必要 文科相の有識者会議部会

ILC計画に関する文部科学省の有識者会議の「人材の確保・育成方策検証作業部会」は20日、同会議に提出する報告書案をまとめた。報告書は7月7日の有識者会議での議論を経て公表される。(The working group under MEXT's expert panel which is discussing the human resource toward the ILC presented a draft of their report on 20th June. They will publish final version after the review of expert panel on 7 July.)

from *The Kitakami Times*

16 June 2016

Ingress in Ichinoseki and learning about the ILC

The teams then hit the streets and headed to locations designated as portals on the Ingress map. On the way I pointed out the ILC flags stretching down a main street, banners and signs, posters in shop windows, and other messages of support for the ILC.

from *Kitakami Times*

31 May 2016

The "Oshu ILC City Development Vision"

After careful thought, we decided on two messages: "ILCを東北に," which means "Bring the ILC to Tohoku," and "ILCとともに歩むまち," which means "A City Moving Forward Together with the ILC." The messages touch on our fervent hope for the ILC to become a reality, and our enthusiasm for working together with the ILC in the future.

from *Iwate Nippo*

28 May 2016

ILC出前授業がスタート 奥州市、小中24校で実施 (ILC Guest Classes Start at Oshu City: 24 Elementary, Junior High Schools)

上條種稔 (たねのり) 君は「ILCができるかもしれない未来のことも思い浮かべて、自分の将来の夢を考えたい」と目を輝かせた。(“I want to imagine a future where the ILC might be built and think of my own future dreams,” said Tanenori Kamijo, with bright eyes.)

Read full translation provided by *Iwate & the ILC* website [here](#).

from *Iwate Nippo*

15 May 2016

The world will start moving once Japan indicates their position on the ILC

Interview with Lyn Evans: “I would like the relevant officials of Iwate to call on the national government for cooperation. There is steady scientific evidence for building the ILC. I also think that there is a meaningful societal component in bringing new relationships to the areas affected by the 2011 disaster. I want the Japanese government to move forward with us.”

from *Iwate Nippo*

15 May 2016

New experiments searching for unknown particles – Operations start up at CERN

Dr. Nagano said, “The results of experiments at the LHC will further raise the value of the ILC. I'd love to do research in Iwate in the future.”

from *Iwate Nippo*

14 May 2016

Arrangements being made to set up a Japan-U.S. group – Going to U.S.A. at the end of the month for a mutual dialogue

In May 13th, it was made clear that arrangements are being made to set up a cooperative group of U.S. and Japanese government officials that will deliberate on specific issues regarding the International Linear Collider project (ILC).

from *Iwate Nippo*

13 May 2016

Basic Concept for Community Development [around the ILC] – Symposium in Sendai

“The ILC and the Creative Reconstruction” was a symposium held in a hotel in Sendai on May 12th to celebrate the 2016 G7 Finance Ministers and Central Bank Governors' Meeting in Sendai. The event was organized by the Tohoku Economic Federation (Tokeiren), which explained its outline for a “Grand Design”: a regional development plan being devised around the ILC. (Full translation provided by *Iwate & the ILC* website)

from *Iwate Nippo*

13 May 2016

Expectations that local companies can take part [in the ILC] – Sendai Symposium

The participants expressed their expectations of the region developing through industry growth and internationalization, but also brought up challenges like developing a cooperative structure so that small-to-medium-sized businesses can take part in the ILC.

CALENDAR

Upcoming events

[38th International Conference on High Energy Physics \(ICHEP2016\)](#)
Chicago, IL, USA
03- 10 August 2016

Upcoming schools

[The 2016 European School of High-Energy Physics](#)
Skeikampen, Norway
15- 28 June 2016

[Linear Collider Physics School](#)
Frauenchiemsee, Germany
20- 27 July 2016

[View complete calendar](#)

PREPRINTS

ARXIV PREPRINTS

[1606.06690](#)
Leptogenesis from Oscillations of Heavy Neutrinos with Large Mixing Angles

[1606.06647](#)
A few comments to a method for producing positrons for ILC

[1606.05296](#)
Constraining new physics with collider measurements of Standard Model signatures

[1606.04943](#)
The Leptonic Higgs Portal

[1606.04437](#)
Influence of incoherent scattering on stochastic deflection of high-energy negative particle beams in bent crystals

[1606.04433](#)
Search for anomalous quartic $ZZ\gamma\gamma$ couplings in photon-photon collisions

[1606.04144](#)
Higgs bosons production and decay at future e^+e^- linear colliders as a probe of the B-L model

[1606.02361](#)
Precision gaugino mass measurements as a probe of large trilinear soft terms at ILC

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One step further with the ILC Human Resource Working Group activities at MEXT, Japan

Akira Yamamoto | [23 June 2016](#)

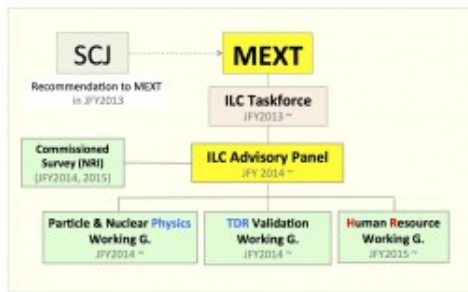


Figure 1: Schematic of the MEXT-coordinated advisory and working groups.

The Japanese ministry of education, culture, sports, science and technology MEXT has been investigating the ILC project and the feasibility for it to be hosted in Japan with three working group activities on “Particle and Nuclear Physics” and “Technical Design Report validation” since JFY2014 and “Human Resource ensuring and training” since JFY2015, under the supervision of the ILC Advisory Panel coordinated by MEXT (see the organisation in Fig. 1)

The Human Resource working group has just held its last meeting on Monday, 20 June, this week, and the activity progress is summarised in Fig. 2. The working group has been chaired by Prof. Takayoshi Nakano (Director of Research Center of Osaka University, RCNP) and composed of ten working group members from academic and industrial fields in Japan. I have been one of the members and I was in charge of reporting the ILC human resource preparation plan described in the KEK-ILC action plan (announced in the KEK news in Jan. 2016). Dr. Lyn Evans, as the former Project Leader of the CERN-LHC accelerator project, was specially invited for the hearing of the CERN-LHC accelerator construction experience, and Lyn much contributed with participation to the working group discussion in April this year based on his experience report (which I gave in his stead). It has been very well received in the working group discussion, as the fact that a similarly large scale accelerator project has been successfully built and operated in international cooperation centred at CERN for more than 20 years after its construction decision made in 1994.



Activity progress of the human resources working group.

The working group is about to submit the working group report to the parent (upper) committee, the ILC Advisory Panel, on 7 July. The draft report in preparation consists of four sections of 1) Summary of the human resource plan in the ILC-TDR and in the KEK-ILC action plan, 2) human resource status in academic and industrial fields to support large accelerator projects, in Japan and abroad, and the relation to the ILC project, and 3) scoping for the human resource necessary to be realised for constructing the ILC project with the international cooperation and domestic/regional support expected for international collaborators in Japan. It should be noted that the CERN-LHC experience as a fact is well reflected into the report, as an important outcome from Lyn’s participation and support the discussion in the working group meeting. The working group report is to be discussed in the next ILC Advisory Panel meeting and to be announced in public afterwards. It is expected to be

an official and open document, soon after also to be translated to English. I am hoping the working group activity and the report will be useful and constructive for the ILC project towards the green light to be reached.

[GOVERNANCE](#) | [HUMAN RESOURCES](#) | [ILC ADVISORY GROUP](#) | [JAPAN](#) | [MEXT](#)

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AROUND THE WORLD

International Linear Collider community meets at ECFA workshop LCWS16

Ricarda Laasch | [23 June 2016](#)



A packed session during LCWS 2016.

The five days were filled with various presentations in small sessions and lively discussions during coffee breaks. Many plenary talks and dedicated sessions summarised and presented the current status of specific areas including detector and accelerator R&D. In the general plenary session overviews on the current status of CLIC, the ILC and on political developments including the European Strategy for Particle Physics (ESPP) and the ILC hosting process in Japan were given.

Within the current European Strategy for Particle Physics the high luminosity LHC upgrades, future energy frontier machines and various neutrino projects are given top priority, but also future e^+e^- machines like ILC and CLIC are supported in this strategy. Many ILC enthusiasts were delighted to hear the statement in the talk of Eckhard Elsen about the European Strategy that: “The

initiative from the Japanese particle physics community to host the ILC in Japan is most welcome, and European groups are eager to participate.” Elsen also mentioned that the next strategy update is planned for 2019.

Another highlight of the workshop was the talk of Satoru Yamashita from the University of Tokyo who talked about the Japanese political and scientific progress towards the ILC. He opened with a status report from Japan, pointing towards the governmental discussions going on in Japan and with other governments around the world. He also stressed the efforts of the scientific community to further advance the Technical Design Report for the site specific needs of the Kitakami site. He explained that many different organisations like the Japanese embassies, universities and industry are active in promoting the ILC worldwide and of course within Japan to reach scientists, the general public and decision makers alike. He stated: “Although decisions by the Japanese Government will not be made in a one-year timeframe, we maximally strengthen our actions to optimise chances to get real progress in this time scale.”

This thinking was also mirrored in the talk from KEK director general Masanori Yamauchi and in his answer to the question if Japan will make a decision concerning the ILC before the European Strategy will be released in 2019. The answer was positive. They wish to finalise the decision-making progress before the European Strategy is released. He also added that this decision then could be used as input for it.

A steady progress within the ILC community to further improve the design was shown during the sessions and the meetings of the [Change Management Board](#). Within this session Mike Harrison and his colleagues reviewed possible changes for the ILC design with regard to the Kitakami site. In this specific workshop they had presentations concerning the positron source lattice update, the cryogenic layout and the [shield wall reduction](#).

“This workshop showed a steady improvement for the ILC in many areas,” said Dmitri Denisov, America’s representative on linear collider physics and detectors board. “Not only in the design including cost and construction optimisation but also on the physics case.” New

results from the LHC were discussed and of course the implications for the ILC. Would it be possible to detect the new particle which was hinted at 750 GeV with the ILC? How could we study it? What other theoretical concepts could be studied at this unique machine? Many such questions were asked and discussed intensely between experts from all around the world. "In almost every theoretical model our understanding of nature benefits considerably from the ILC and its capabilities," summarized Denisov.

The idea of a photon-photon collider was discussed based on the assumption that some studies can only be done with such kind of collisions. A collider like this could be built in a very similar way as the ILC using the same technology for acceleration but introducing lasers for photon production and only accelerating electrons instead of electrons and positrons.

More topics from other projects ranging from superconductive cavities and detector designs to software simulations and theoretical models were openly discussed at this workshop. "Every lesson we can learn from other projects helps to improve our design and brings us a step closer to the ILC realisation," said Denisov. Speakers at all these sessions were not only senior scientists because many young scientist had the opportunity to discuss their work with all participants. "Giving young scientists and students the chance to be part of a project like the ILC is not only an opportunity for them but also for the project," commented Denisov. "Overall this workshop showed the ILC is actively moving forward on all parts of the project."

Therefore many enthusiasts are looking forward to the next LCWS workshop to be held in Japan from 5 to 9 December 2016. This next workshop will be an opportunity to get a first view at the possible site of the machine because the workshop will take place in Morioka, one of the cities "closest to home" for the ILC as possible right now. It is also one of the many centers of ILC design activity and public outreach.

[ACCELERATOR R&D](#) | [CHANGE MANAGEMENT BOARD](#) | [CLIC](#) | [ECFA LC2016](#) | [ILC](#)

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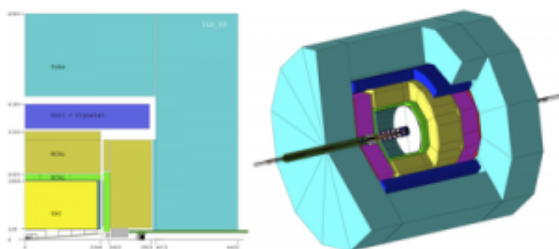
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FEATURE

The new ILD structure

[Nina Laskowski](#) | [23 June 2016](#)



Artist's impression of the ILD detector.

The International Large Detector (ILD) is one of two detector concepts which are under study for the International Linear Collider. ILD started about ten years ago with the merger of two different concept groups. The concept group developed a detector design which was documented in the ILC's Technical Design Report TDR. Over the past few months ILD has given itself a new structure, to address the future challenges of the ILC project.

ILD is not only large in size, but also has many members: by now 71 groups from around the world have signed up to ILD. The new structure rests on two

main pillars: The institute assembly under the leadership of Jan Timmermans (NIKHEF) and the executive team (ET) with the spokesperson Ties Behnke (DESY). Each institute has one vote in the institute assembly, which is the final decision body in ILD. The executive team is responsible for the operational side of the concept. Within the there are four groups exist. These are the physics group under the leadership of Keisuke Fujii (KEK, deputy Jenny List, DESY), the Software and reconstruction group coordinated by Frank Gaede (DESY, deputy Akiya Miyamoto, KEK), and the technical group led by Claude Vallée (CPPM Marseille, deputy Karsten Büßer, DESY). The executive team is supplemented by four additional members elected by the institute assembly: Henri Videau (LLR), Alberto Ruiz (Santander), Yasuhiro Sugimoto (KEK) and Graham Wilson (Kansas).

With this re-organisation ILD has prepared itself to answer to the challenges to push for and to realise an ambitious project like the ILC in Japan. The immediate goal is to re-define ILD, optimised for cost and performance, and incorporate the latest advances in technologies and tools. ILD is doing this in close cooperation with detector R&D groups like CALICE or LC-TPC. Ultimately though the goal of ILD is to support the drive for the ILC as much as possible, and help to make ILC a reality.

[DETECTOR R&D](#) | [ILD](#) | [MANAGEMENT](#) | [TDR](#)

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