ILC Political News

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8/5/2015

Outline

- LCB/ICFA 26/27.2
- PAC Paris 13/14.4
- April Japan meetings
- Diet members delegation to Washington
- Europe
- Summary & Future

LCB/ICFA JLAB 26/27.2.2015

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LCB Agenda

1) Linear Collider Overview
2) ILC Accelerator Status
3) CLIC Status
4) Linear Collider Detector Status
5) PAC Meeting
6) Subcommittee 1 on Governance
7) Subcommittee 2 on International Agreement for ILC Project

S. Komamiya reported on meetings of the Subcommittee, and the need to have members on it in addition to lab directors. A major topic for the Science Council of Japan is the human resource needs of the ILC. There is a need for an approximate time profile of available expert manpower that may be available for the ILC, taking into account other world projects needing the same expertise, such as XFEL, LCLS-II, LBNF, etc.

8) Regional Reports

LCB/ICFA JLAB 26/27.2.2015

ICFA Agenda

1) Discussion on ICFA and Accelerator Science
2) InterAction Report
3) FALC Report
4) ICFA Seminar – next one is Vancouver 2017
5) ILC Progress in Japan - Nozaki
6) Linear Collider School
7) ICFA-ICUIL Collaboration
8) Proposed ICFA Panel on Sustainable Accelerators and Colliders
9) ICFA Panels

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9) ICFA Panels

Beam Dynamics Panel

Weiren Chou … asked for ICFA approval of the 16-19 November 2015 Frascati Beam Dynamics Workshop on High Luminosity Circular e+e- Colliders. This led to a discussion of why ICFA is involved in studies of such machines, since ICFA had agreed at its February 2013 meeting:

“the Higgs workshop had been useful, but this should not be continued as a workshop series. ICFA members felt there should not be a circular e+e- Higgs collider design study under ICFA”.

There was no ICFA support for the proposed Frascati Workshop.

10) Reports from Laboratories & Regions

11) Next Meetings – August at LPS, Feb. 2016 in KEK

12) AoB

S. Komamiya said that the Japanese government will need a rough estimate of accelerator physicists with the appropriate expertise who could be available to work on the ILC. ICFA will send out a request for such estimates to institutions with personnel in this area.

PAC LAL 13/14 April

PAC LAL 13/14 April

Still no written conclusions. See my Newsline of 16th April:

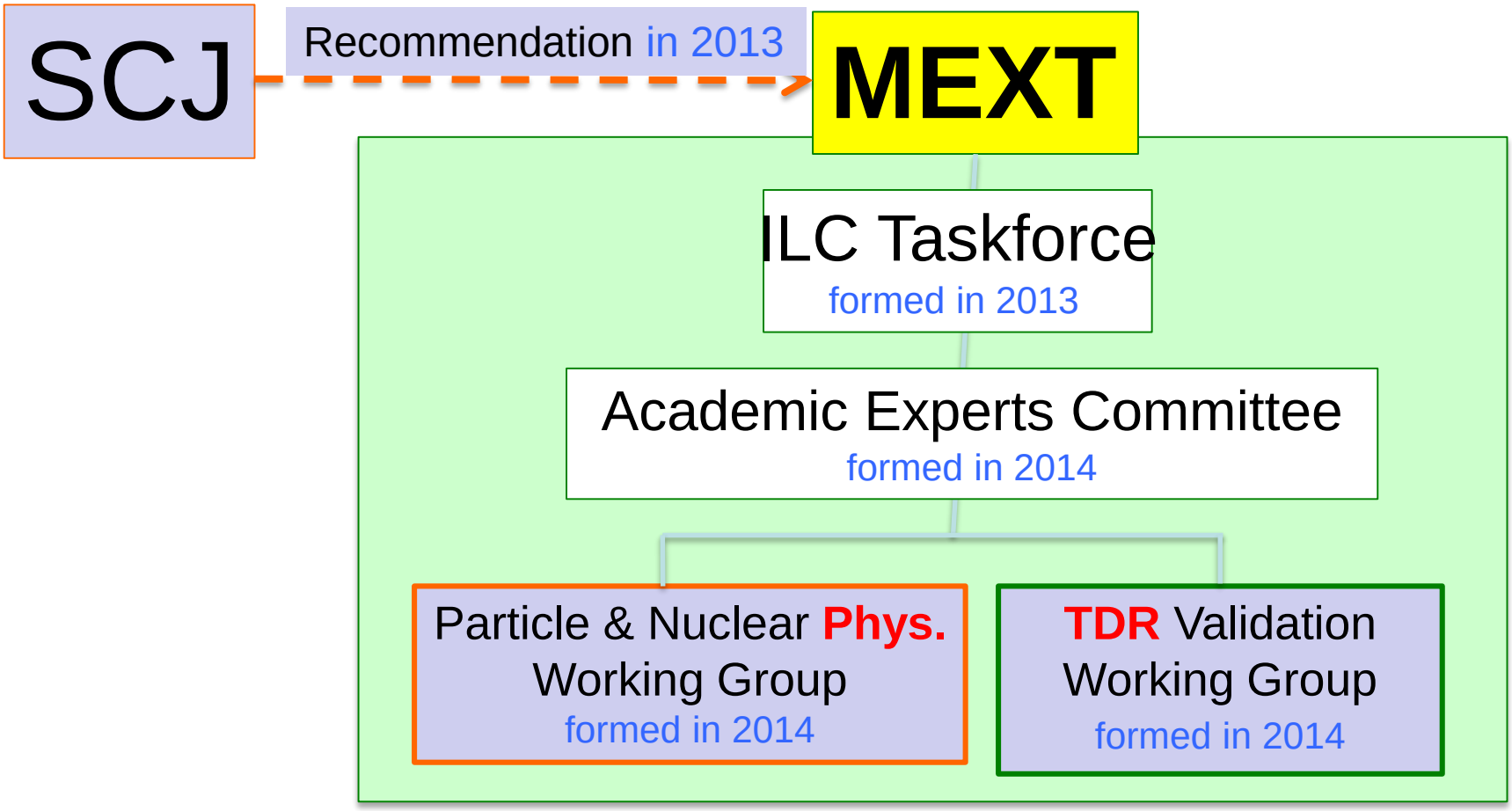
In summary, the PAC recognised that in many ways the ILC was a project "on hold" waiting for a Japanese decision on hosting. As time goes on there is a clear danger that experts will leak away from the project, making a timely decision from Japan on the currently foreseen time scale of the greatest importance. The committee was extremely impressed by the progress both on the machine and particularly on the detectors given the very limited resources available.

Current Status in MEXT

Taken from talk by Akira Yamamoto to LCC Executive using ALCW at KEK.

This is still dynamic as documents from MEXT committees are translated into English!

MEXT's Organisation



MEXT, ILC Physics WG Members

- T.Kajita : Chair, Director of Institute of Cosmic Ray Research, Univ. Tokyo – Cosmic-ray physics,
- S. Okamura: Hosei Univ., (former Professor of Univ. Tokyo) -- Astrophysics
- H. Koiso: Head for KEK-B Accelerator of KEK -- Accelerator
- S. Komamiya: Chair, HEP Committee of Japan, University of Tokyo – Particle physics
- H. Sakai: RIKEN, and former Prof. of Univ. of Tokyo. – Nuclear physics
- H. Shimizu: Tohoku University – Nuclear Physics
- S. Tanahashi: Nagoya University -- Particle Physics (theory)
- K. Tokushuku: Deputy Director of IPNS (physics), KEK, Particle physics
- T. Nakano: Osaka University, Director of RCNP – Nuclear physics,
- T. Nakaya : Kyoto University – Particle physics (neutrino),
- T. Hatsuta: RIKEN -- Nuclear and Hadron Physics (Theory),
- S. Matsumoto: IPMU, University of Tokyo, Particle physics (Theory),
- M. Yamauchi, Director of IPNS (Physics), KEK – Particle physics,
- T. Yamanaka ; Osaka University, -- Particle physics (rare K decay),
- H. Yokoyama, University of Tokyo – Science literacy, public relation in S&T

ILC TDR Verification WG Membership

H. Yokomizo	Chair, Former Deputy Director for JPARC Center – Accelerator Science
T. Koseki	KEK, Head of JPARC Linear Accelerator --- Accelerator Science
T. Kato	JAEA, Deputy Director for JPARC Center --- Cryogenics
S. Kamigaito	RIKEN, Head of Accelerators – Accelerator Science
T. Kumagai	JASRI, Trustee – Accelerator Science
H. Koiso	KEK, Head of KEK-B Accelerator – Accelerator Science
S. Sasaki	Hiroshima U. --- Accelerator Science and Photon Science
H. Tanaka	RIKEN, Spring-8 --- Accelerator Science
F. Naito	KEK, Head of JPARC Linear Accelerators – Accelerator Science
K. Noda	NIRM – Accelerator Science and Medical Application

Progress in MEXT Academic Expert Committee for ILC

http://www.mext.go.jp/b_menu/shingi/chousa/shinkou/038/attach/1353571.htm

	Particle and Nuclear Physics WG		TDR Verification WG (* closed mtg)
1st Academic Expert Committee (14/05/08)			
1st : 6/24	Status and Prospect for Particle Physics ILC Project and the Physics	1st: 6/30	TDR and the cost, generally reported
2nd : 7/29	Strategies at EU and Ams	2nd : 7/28*	SRF and the cost
3rd : 8/27	Cosmic-ray and astrophysics ILC Science Objectives	3rd: 9/8*	SRF and the cost (continued) CFS
4th : 9/22	Flavor and Neutrion Physics IILC Science Objectives	4th: 11/4*	ILC construction cost
5th : 10/21	Summary discussion for a report		
2nd Academic Expert Committee (14/11/14)			
6th : 1/8	Experience from SSC ILC Science Objectives	5th : 1/26*	ILC Accelerator and human resources
7th : 2/17	Science Objectives per	6th : 3/2*	Summary discussions
8th : 3/30	Summary discussion for a report		
3rd Academic Expert Committee (15/4/21)			

3rd meeting of the Special Committee on ILC Project

10:00-12:30, April 21, 2015 at MEXT

Agenda

English translations are not official

（1）作業部会における検討状況について
Report from WGs
素粒子原子核物理作業部会
Particle and Nuclear Physics WG report
技術設計報告書（TDR）検証作業部会
TDR Validation WG report
（2）技術的波及効果等委託調査について
Research contract report on technological spinoff, etc.
（3）有識者会議 における議論のポイントについて
Discussion points in this committee
（4）今後の予定について
Plan of this committee from now on
（5）高エネルギー加速器研究機構視察結果について
Report on the site visit to KEK
（6）その他
Others

Highlights of the Particle and Nuclear Physics WG report

1. Scientific Significance (Role of ILC Concerning the Future Perspectives of Particle Physics)

2. Cost (Excerpt from the TDR validation WG report)

3. Past examples of construction costs in accelerator facility implementations

4. Experiments that ILC will be able to carry out as described in the TDR

5. View points for judging if the scientific case is matching the investment

6. Scenarios at the ILC based on anticipated achievements at the 13TeV LHC

Scientific Significance

(Role of ILC Concerning the Future Perspectives of Particle Physics)

○ History and current status of elementary particle physics:

- Elementary particle physics has been making a great progress along with advances of particle accelerators, in recent years, with that of colliding accelerators in particular.
- By the end of the 20th century the correctness of the Standard Model of particle physics had turned out to be quite solid.
- In 2012, the Higgs boson that gives masses to elementary particles was discovered.
- It has also been widely recognized that the Standard Model would not be the ultimate theory.
- The mainstream of particle physics is now shifting to the quest for physics beyond the Standard Model.

○ The International Linear Collider (ILC) is a facility to do experiments and searches concerning the following items:

① Full elucidation of the Higgs boson properties and precision studies of the top quark
② Searches for new particles (such as super-symmetric particles)
③ Others (such as dark matter and extra dimensions)

○ There are significant scientific meanings as targets of future elementary particle physics to study the items listed above.

Does scientific case match necessary investment?

- The optimal strategic prospects for research should be clarified based on the results of searches for strongly interacting SUSY particles, etc. at the 13TeV LHC.

- In order to carry out the research program according to the optimal strategic prospects, it is necessary to reassess the appropriateness of the performance described in the ILC TDR.

- Since the ILC is an international project that requires the enormous cost, significant international cost sharing should be prerequisite, considering the budgetary situation in Japan.

- Considering the scale of the necessary investment for the ILC project, it is important to get understanding and cooperation from communities of other fields.

- In case timely decision should not be made concerning the ILC project implementation, the project might lose its international appeal. It is hence important to formulate a system so as not to delay the decision.

ILC and anticipated achievements at the 13TeV LHC

(1) In the case of discovery of a new particle (which appears to be consistent with SUSY):

–**Strategy: Using the ILC, elucidate new physics phenomena behind the new particle through precision measurements of the Higgs boson, etc. If the ILC energy is sufficient, discovery of some other new particles linked to the LHC discovery is anticipated.**

(2) In the case of observation (or discovery) of events hinting at a new phenomenon (dark matter, etc.) other than the above:

–**Strategy: Scrutinize the new phenomenon discovered at the LHC.**

(3) In the case of no discovery of any new particle or phenomenon at the 13TeV LHC:

–**Strategy: Search for physics beyond the standard model through precision measurements of the Higgs boson, etc. Search also for new particles that are difficult to find at the LHC. Investigate in detail possible reason for the non-discovery at the 13TeV LHC and examine whether energy upgrade would be necessary in the future or not.**

Highlights from the TDR Verification WG report

1. ILC Cost Estimate Summary in TDR

List the TDR cost including manpower in yen

List possible cost items not included in TDR

2. Technical Issues and Cost Risks in TDR

1) Risks in the cost estimates remaining
2) Technical reality/feasibility
3) Human resource for construction, operation, and management

3. Points to be considered for judging to host the project or not

1) International Cooperation
   - **Agreement for safety and legal regulation**
2) Others needed to:
   - **Consider available budget limitation in our country.**
   - **Watch the various constraints in each country**
   - **Maximize to reflect the R&D progress toward improvement of the accelerator performance.**

1. ILC Cost Estimate Summary in TDR, reported

1) Accelerator constr. : 9,907 Oku-Yen (CE, Acc and Labor.)
   1) **8,309 + 1,598 Oku-Yen**
2) Detector constr.: 1,005 Oku-Yen (Det. And Labor)
   1) **766 + 239 Oku-Yen**

3) Exclusive in TDR : preparation budget, living environment, land acquisition, access road, life-line infra-structure, computing center etc.

4) Uncertainty: ~ 25 %
5) Annual operational cost in TDR; 491 Oku-Yen

continued

2. Technical Issues and Cost Risks in TDR

1) Risks in the cost estimates remaining with;

- **Insufficient margin in cost because of the current achievement basis.**
- **Possible cost increase caused by unexpected happening, and of less sufficient study on human resources required,**

2) Technical reality/feasibility

- **Less design margin, with assuming the performance, based on the past research achievement to be realized in the project.**
- **No demonstration yet of a sufficiently large scale system**
- **Reproducibility of the component performance, even though multiple vendors are worldwide distributed and the scope for the reproducible productions.**

3) Human resource for construction, operation, and management

- **Necessary reliable plan for human resource to be involved in construction**
- **Sufficient study of management for contract and system assembly etc.**

Continued

3. Points to be considered for go or not

1) International Cooperation
   - **Agreement for safety and legal regulation**

2) Others needed to:
   - **Consider available budget limitation in our country.**
   - **Watch the various constraints in each country**
   - **Maximize to reflect the R&D progress toward improvement of the accelerator performance.**

Report on technological and economical impacts of ILC projects and status in the particle and nuclear physics researches

Nomura research Institute

- Interviews with governments, research institutions and accelerator related companies in Japan and world.
- Estimate of economical impacts

(x2.12; using experience at CERN)

Overview

- Physics WG >> *well received (Green Marks)*
  - **Scientific motivation**
  - **Science v.s. investment,**
  - **Strategy based on the LHC progress,**
- TDR WG >> *human resource issues remaining*
  - **Verification of TDR**
    - Cost over view
    - Overcoming the risks,

Continued

- Both WGs >> *remaining*
  - **International cooperation and cost sharing**
  - **Leader for for the construction, operation, and management.**
  - **Local coordination in Japan**
  - **Relation with Domestic Universities, Laboratories,**

A New Survey Contract MEXT, planned

- Subject
  - **“Survery and Analysis for Technical Feasiblity of the ILC Realization and Technical Issues for the Accelerator Construction”**

Continued

Objective:

- MEXT has been progressing survey and investigation to prepare for the go-/not-go judgment for the ILC project execution.

- In JFY2014 (H26), MEXT carried out the survey and analysis on "Technical and Economical Spin-out/Ripple-off effects" and "Worldwide Future Plan/Prospects in Particle and Nuclear Physics.

- In JFY2015 (H27), MEXT carries out the survey and analysis on "Technical Feasibility of the ILC realization", "Technical Issues for the Accelerator Construction", and " Efforts on Cost Reduction for the Accelerator Construction".

Plan from now on

4th and 5th meetings are planned in June 2015

Set up a working group investigating manpower issues

Research contract to investigate technical feasibility and R&D status

Further Plan

2015:

April 21: 3rd Academic Experts Committee (AEC)

~ May: Another survey start

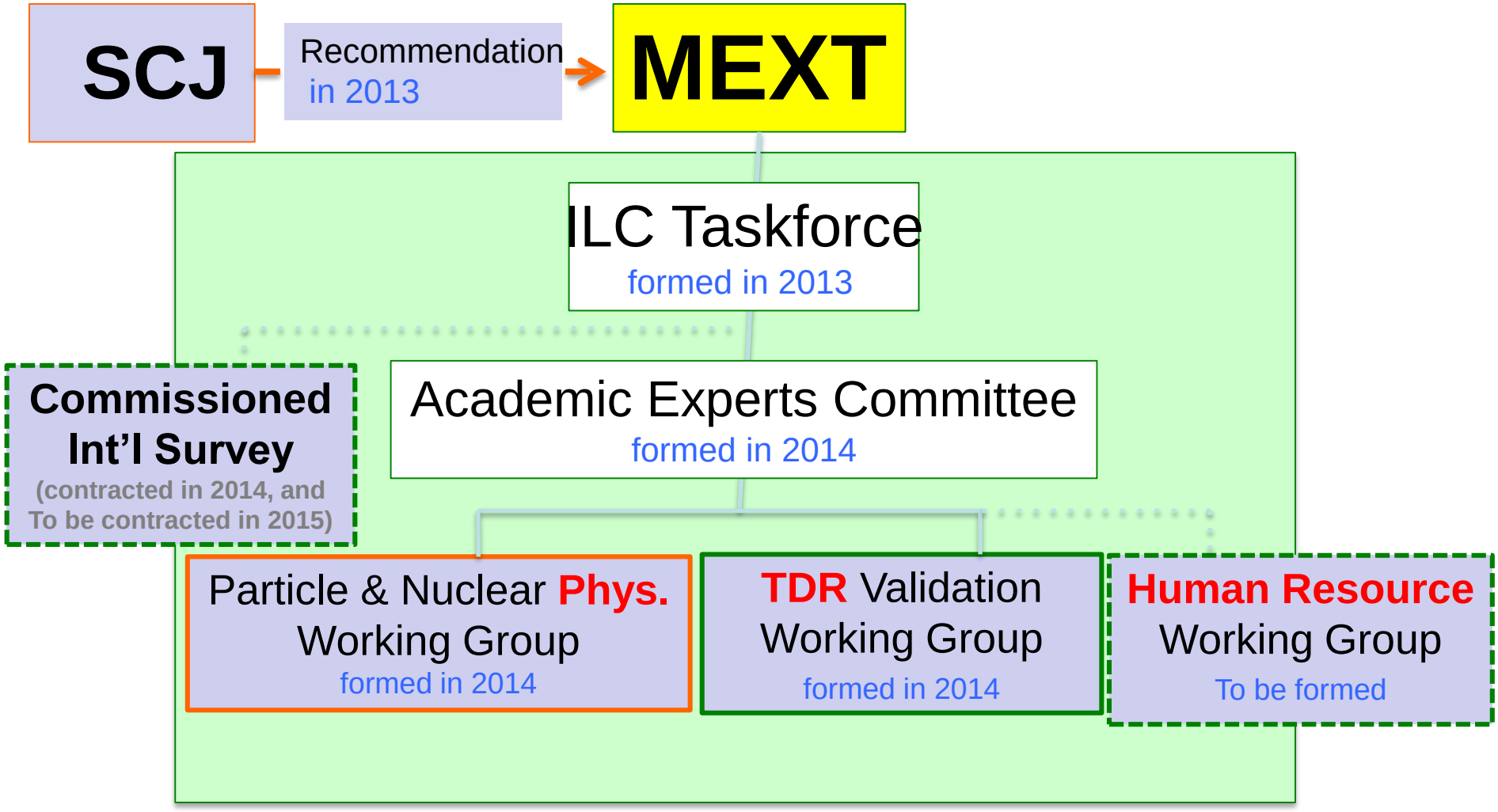
~ June: 4th and 5th AEC

2016

~ Feb. Complete the survey

~ March Expected completion of AEC.

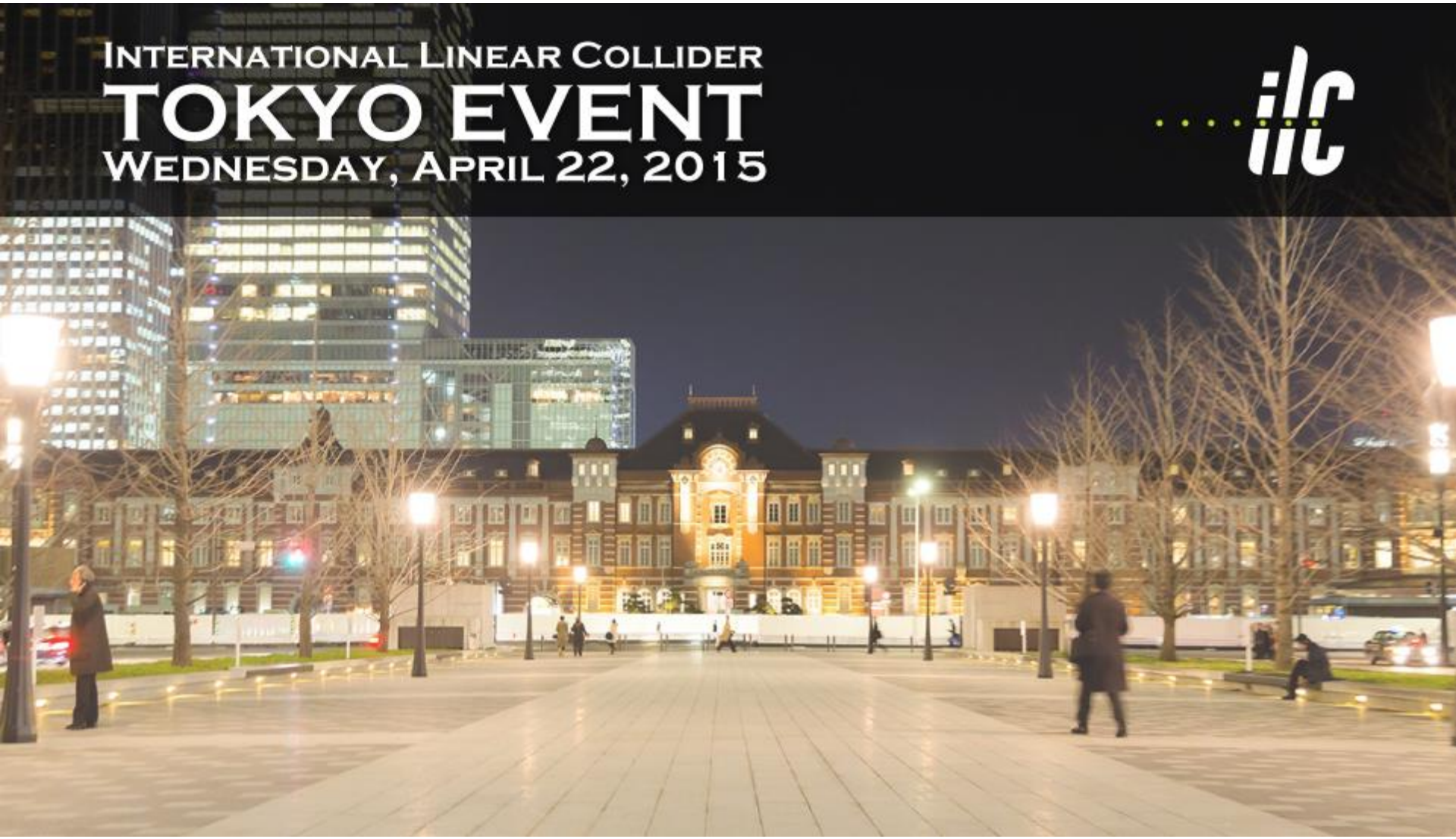
MEXT's Organization for ILC - updated



Summary

- AEC has well received both reports from “Physics WG” and “TDR WG”.
- It is still required to study further “Technical feasibility”, “Issues/Concern for the construction”, and “Cost-Reduction” through a new survey contract with a company, in coming 8 months.
- Human resource and the training plan is becoming hot issue and a new HR WG is to be established.
- AEC activity is to be continued as planned (by the end of March 2016) to figure out further clear scope

Tokyo Event


INTERNATIONAL LINEAR COLLIDER
TOKYO EVENT
WEDNESDAY, APRIL 22, 2015
ilc

Tokyo Event

Tokyo Event


INTERNATIONAL LINEAR COLLIDER TOKYO EVENT
TOKYO SYMPOSIUM
22 APRIL 2015 ASSOCIATED EVENT to ALCW 2015 TOKYO JAPAN
INTERNATIONAL LINEAR COLLIDER
TOKYO EVENT
WEDNESDAY, APRIL 22, 2015

Tokyo Statement

Statement on "Towards the realisation of the International Linear Collider"
22 April 2015, Tokyo

At the ILC Tokyo Symposium, held on 22 April 2015 at the Ito International Hall, Tokyo, Japan, the Linear Collider Collaboration (LCC) and the participants around the world at the Asian Linear Collider Workshop (ALCW) 2015 decided to issue a statement confirming their conviction of the scientific justification for a prompt realisation of the International Linear Collider (ILC).

1) The ILC's role in particle physics is to explore with exquisite detail the time just after the beginning of the Universe. This research is unique and indispensable for a deep understanding of how our Universe began, how it evolved, and how it works today. We are eager to build and work at the facility.

2) The technical feasibility of the ILC has been demonstrated in the Technical Design Report. The ILC is ready to be built following the completion of an engineering-design phase. The project is now in a phase where governmental involvement should lead to a decision to realize the project. In this context we express our appreciation of the ongoing project assessment being undertaken by the Japanese government.

3) The ILC is one of the largest scientific projects ever proposed, on a similar scale to the Large Hadron Collider project and that its realisation as an international project requires the establishment of an international framework for sharing the cost and expertise among countries. We therefore intend to facilitate discussions between governments and funding authorities to achieve this goal as soon as possible.

Lyn Evans
Director of the LCC, on behalf of the LCC and scientists at the ALCW 2015.

Diet Members' meeting at evening event

Diet Members' visit to Washington

Hudson Institute

Participants from Japan

Hon. Takeo Kawamura — *Member, House of Representatives of Japan*
Former Chief Cabinet Secretary of Japan
Chair of Committee on National Budget of the House of Representatives
Director of Province Creation Headquarter of Liberal Democratic Party
Chair of Special Committee of Liberal Democratic Party on Space and Marine Development
Hon. Ryu Shionoya — *Member, House of Representatives of Japan*
Former Minister of Education, Culture, Sports, Science and Technology
Acting Chair of Policy Research Council of Liberal Democratic Party
Hon. Shunichi Suzuki — *Member, House of Representatives of Japan*
Former Minister of the Environment
Vice Chair of Headquarter of Liberal Democratic Party for Recovery Plan for Tohoku Disaster
Dr. Atsuto Suzuki — *former Director General, High Energy Accelerator Research Organization*
Dr. Satoru Yamashita (Moderator) — *Associate Professor, University of Tokyo*
Mr. Junichi Nishiyama — *Senior Advisor, Advanced Accelerator Association promoting Science & Technology*
Mr. Sho'ichiro Asada — *General Manager of Washington Office, Mitsubishi Heavy Industries*

Participants from the United States

Representative Randy Hultgren — *U.S. Congressman, Illinois and Member, Committee on Science, Space and Technology, Subcommittee on Research and Technology and Subcommittee on Energy*
Mr. Aaron Weston — *Counsel, House Science, Space and Technology Committee*
Mr. Don Andres — *Committee Staff, House Committee on Science, Space, and Technology and Legislative Assistant, Congresswoman Eddie Bernice Johnson*
Mr. Andrew Mooney — *Legislative Assistant, Congressman Randy Hultgren*
Dr. James Siegrist — *Director, Office of High Energy Physics, Office of Science, Department of Energy*
Dr. Kenneth R. Weinstein — *President and CEO, Hudson Institute*
Dr. William Schneider, Jr. — *Senior Fellow, Hudson Institute*
Dr. Harry Weerts — *Regional Director of US Linear Collider Collaboration, Argonne National Laboratory*
Dr. Andy Lankford — *Chair, High Energy Physics Advisory Panel and Professor, UC Irvine*
Dr. Hitoshi Murayama — *Director, Kavli IPMU University of Tokyo and Professor of Physics, UC Berkeley*

Participant from the EU

Dr. Lyn Evans — *CERN and University College London*

- Productive meeting – Hultgren made statement and left. ILC seen as part of broader S&T platform US/Japan. Director of Hudson Inst, interested in helping to frame such a platform and will visit Argonne to learn more about ILC.

Diet Members' visit to Washington

DIET Federation Roundtable - Washington DC

from Wednesday, 29 April 2015 at **14:00** to Thursday, 30 April 2015 at **16:30** (America/New_York)
at **JSPS**
2001 L St. NW, Suite 1050, Washington, DC 20036

Wednesday, 29 April 2015

14:00 - 14:05	Welcome, Introduction and Plan *5'*	Speaker: Harry Weerts (Argonne National Laboratory)
14:05 - 14:20	HEPAP and P5 Report *15'*	Speaker: Andrew Lankford (UC Irvine) Material: **Slides**
14:20 - 14:35	US Status - DoE *15'*	Speaker: James Siegrist (DoE) Material: **Slides**
14:35 - 14:50	ILC Status *15'*	Speaker: Lyn Evans (Imperial College Sci., Tech. & Med. (GB)) Material: **Slides**
14:50 - 15:00	Discussion *10'*	
15:00 - 15:15	SRF R&D and developments at Fermilab *15'*	Speaker: Dmitri Denisov (Fermi National Accelerator Lab.) Material: **Slides**
15:15 - 15:30	Linac Coherent Light Source (LCLS) *15'*	Speaker: Marc Ross (SLAC) Material: **Slides**
15:30 - 15:45	ILC Detector Techology *15'*	Speaker: Andy White (University of Texas at Arlington) Material: **Slides**
15:45 - 16:00	International collaborations *15'*	Speaker: Paul Grannis (Stony Brook University) Material: **Slides**

- Attended by Diet Members Shionara & Suzuki and all Japanese scientists from Hudson meeting.
- Proposal to form Congress-Diet caucus to discuss science projects – ILC prominent.
- Identify Congress member to take lead & physicists to liaise.

Diet Members' visit to Washington

- Banquet in Japanese Embassy for PM Abe. Satoru and Hitoshi M attended.

- Met Secretary of Energy Monitz, Ambassador Kennedy, several Senators & Congresspersons.

- Positive discussions. Secretary Monitz particularly interested in platform approach and showed interest in ILC.

European activity

• Delegation from Diet to Strasbourg led by Kosaka-san. Not directly about ILC but this was discussed in margins. R-J Smits could not attend.

• Marc Winter, Maxim Titov, Olivier Napoli met the delegation. Positive reports.

• Plan as discussed in Feb at CERN with DG & DG-elect is to start with MEXT contacting France. Now that UK election is over UK can also be contacted. Germany needs FAIR to be sorted.

Summary & Future

- The Tokyo meeting leaves no doubt in my mind that MEXT are serious about doing a good job to evaluate the ILC. It is painfully slow but it is moving forward and they seem to mean to keep to their timetable of April 2016
- The big question is, what will they decide in 2016? Most likely there will be no ringing statement: “Japan backs the ILC”. Rather it is likely to be “Now lets proceed to the next phase.”
- This phase seems to now have already begun and to be picking up some momentum. The US will be critical but Europe also has to start to get seriously involved.
- Talk about “carrying on until the end of the year” obvious (and dangerous) nonsense. There is momentum and we have to keep pressing until a clear decision, positive or negative.