

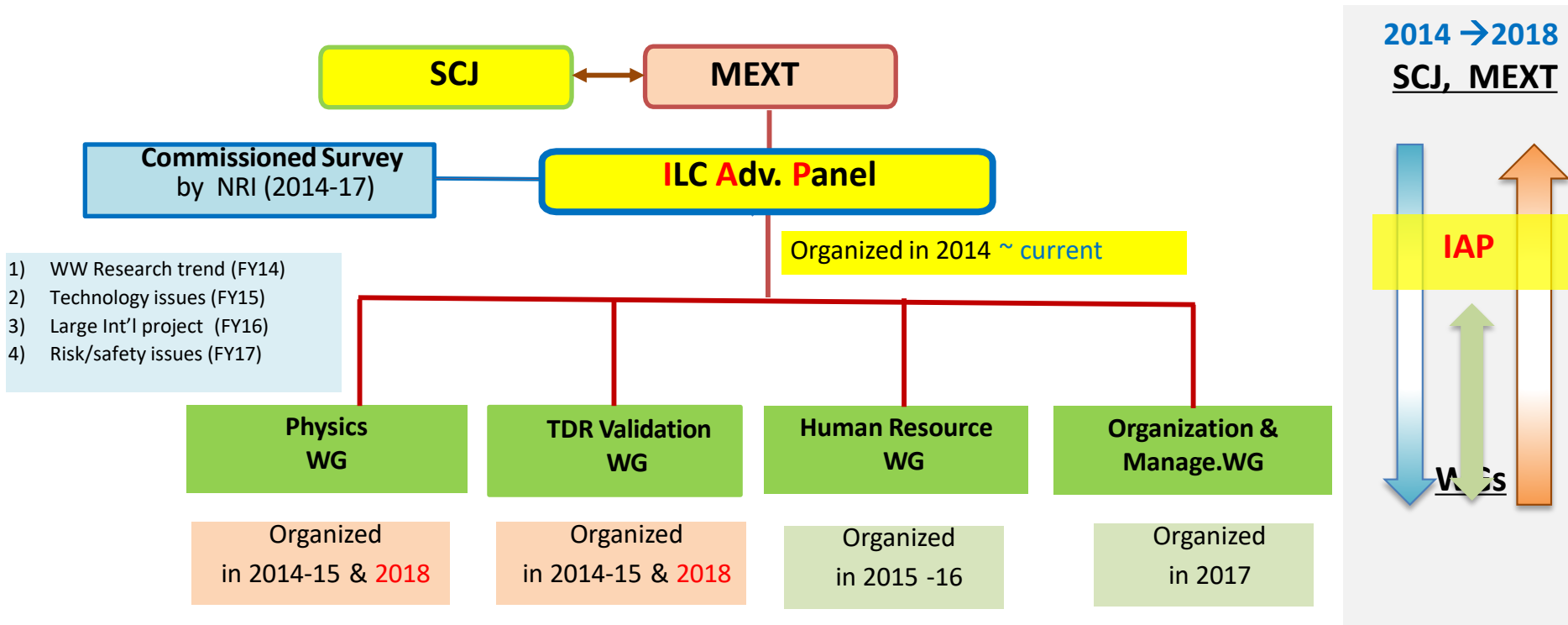
ICFA/LCB report

July 4 (Wed)	July 5 (Thu)	July 6 (Fri)	July 7 (Sat)	July 8 (Sun)	July 9 (Mon)	July 10 (Tue)	July 11 (Wed)
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8
	Parallel Sessions 09:00-10:30	Parallel Sessions 09:00-10:30	Parallel Sessions 09:00-10:30	Tour & Satellite Meetings	Opening of Plenary 09:00-10:00	Plenary Session 08:45-11:15	Plenary Session 08:45-10:55
	Coffee Break 10:30-11:00	Coffee Break 10:30-11:00	Coffee Break 10:30-11:00		Coffee Break 10:00-10:30	Coffee Break 11:15-11:35	Coffee Break 10:55-11:15
	Parallel Sessions 11:00-12:30	Parallel Sessions 11:00-12:30	Parallel Sessions 11:00-12:30		Plenary Session 10:30-12:00	ICFA Report 11:35-11:50 Directors' Forum & Round-table Discussions 11:50-12:35	C11 Report, Award, Poster show-case 11:15-12:25
	Lunch 12:30-14:00	Lunch 12:30-14:00	Lunch 12:30-14:00		Photo Session 12:00-12:15	Lunch 12:35-13:40	Lunch 12:25-13:40
	Parallel Sessions 14:00-16:00	Parallel Sessions 14:00-16:00	Parallel Sessions 14:00-16:00		Lunch 12:15-13:30		
Registration 13:00-18:00	Coffee Break 16:00-16:30	Coffee Break 16:00-16:30	Coffee Break 16:00-16:30		Plenary Session 13:30-15:30	Plenary Session 13:40-15:30	
	Parallel Sessions 16:30-18:30	Parallel Sessions 16:30-18:30	Parallel Sessions 16:30-18:30		Coffee Break 15:30-16:00	Coffee Break 15:40-16:00	
Reception 18:00-19:30		Poster Session 18:30-19:30			Plenary Session 16:00-18:30	Plenary Session 16:10-17:30 Special Keynote Speech 17:40-18:30	
			Public Lecture I 19:00-21:00	Banquet 19:00-21:00	Public Lecture 19:30-21:00		

Shin MICHIZONO
(KEK/LCC)

Meetings	Date & Time	Venue
Convener Meeting	July 4 (Wed), 17:00-18:00	209(AB), 2F, COEX
IAC of CEPC	July 6 (Fri), 18:30-22:00	209(AB), 2F, COEX
ICFA / LCB (LCB Session)	July 8 (Sun), 09:00-18:00	209A, 2F, COEX
Hyper-K	July 8 (Sun), 09:00-12:00	209B, 2F, COEX
DUNE	July 8 (Sun), 13:00-16:40	205(AB), 2F, COEX
C11	July 8 (Sun), 13:00-16:55	209B, 2F, COEX

ILC Study Coordination by MEXT



- Physics WG, and TDR Validation WG re-organized to evaluate **ILC-250GeV**.

Physics and TDR validation WGs' reports are open to the public (in Japanese).

ILC construction cost summary

[Tentative Translation]

The ILC project cost for 500GeV ILC and 250GeV ILC presented at the Hearing

Appendix 1

Item	500GeV ILC (original plan)	250GeV ILC (revised plan)		
		Cost estimation presented at the TDR WG	Option A (250GeV ILC as a Higgs factory)	Option A' (Incorporated results from cost reduction R&D)

※The cost-estimate listed below in (1) to (7) is a summary reported by the research community.
It should be necessary to pay attention to additional cost risk possibly caused by the risk factors and technical issues described in the Section 3, in this TDR-WG report.

Construction of the ILC accelerators and detectors	(1) Accelerator (2) Detectors	1,091.2 billion yen	735.5 ~ 803.3 billion yen	785.3 ~ 803.3 billion yen	735.5 ~ 753.5 billion yen
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(3) An additional cost arising from inaccuracy and items described in the Section 3 of the report may be added.

(1) Accelerator (ref. TDR) [revised]		990.7 billion yen	635.0 ~ 702.8 billion yen	684.8 ~ 702.8 billion yen	635.0 ~ 653.0 billion yen
Civil engineering and construction	830.9 billion yen	169.9 billion yen	515.2 ~ 111.0 ~ 129.0 billion yen	111.0 ~ 129.0 billion yen	111.0 ~ 129.0 billion yen
Accelerator construction		670.9 billion yen	58.30 ~ 404.2 ~ 454.0 billion yen	454.0 billion yen	404.2 billion yen
Labor		159.8 billion yen	119.8 billion yen	119.8 billion yen	119.8 billion yen
(2) Detectors and related expenditures (ref. TDR) [No change]		100.5 billion yen	100.5 billion yen	100.5 billion yen	100.5 billion yen
Detector construction		76.6 billion yen	76.6 billion yen	76.6 billion yen	76.6 billion yen
Labor		23.9 billion yen	23.9 billion yen	23.9 billion yen	23.9 billion yen
(3) Uncertainty (ref. TDR) [No change]		About 25% of (1)+(2)	About 25% of (1)+(2)	About 25% of (1)+(2)	About 25% of (1)+(2)
※Inaccuracy: Only the inaccuracy in the cost estimation is included. What is not included are technical risks, extension of construction period and change in market price.					

(4) Operation (ref. TDR) [revised]		49.1 billion yen	36.6 ~ 39.2 billion yen	39.2 billion yen	36.6 billion yen
Utilities and maintenance		39.0 billion yen	29.0 ~ 31.6 billion yen	31.6 billion yen	29.0 billion yen
Labor		10.1 billion yen	7.6 billion yen	7.6 billion yen	7.6 billion yen

(5) Other expenditures (not in TDR)					
Preparatory cost (Design, R&D, Environmental assessment, training, technology transfer, management and administration, including labor cost)		Not estimated	[New estimation] 23.3 billion yen	23.3 billion yen	23.3 billion yen
Not estimated in TDR		Not estimated	Not estimated	Not estimated	Not estimated
Land acquisition, living environment for overseas researchers, access road, infrastructure such as lifeline, computing center			[New estimation]	Waste and spring water disposal, power transmission and substations, low voltage supply	

(6) Contingency About 10% of project cost (accelerator+detectors+operation*) (ref. PIP)

[New estimation] Reserve fund for unexpected expenditure. *annual operation cost x operation years

(7) Decommissioning Equivalent to 3 years of operation.

[New estimation] Accelerator components will be re-used, for which storage facilities should be prepared.

ILC construction cost summary (2)

	Value	Labor
ILC-500 accelerator	830.9 Byen	22,893 k person hours (159.8 Byen)
ILC-250 accelerator	515.2~583* Byen	17,165 k person hours (119.8Byen)
Detectors	76.6 Byen	3,651 k person hours (23.9 Byen)

Exchange rates of 1Euro=115 yen,1 USD=100 yen are used.
(same as the ILC500 estimate in 2014)

Cost detail was reported at TCMB on Mar.13, 2018. (same numbers)
1 Byen=10 Oku-yen (Oku= 10^8)

ICHEP2018, Seoul, July 4-11, 2018



ICFA REPORT

Pushpa Bhat, Fermilab
Geoffrey Taylor, CoEPP

coex

<https://indico.cern.ch/event/686555/timetable/#20180710.detailed>

G. Taylor, Chair, Australia

P. Bhat, Secretary, USA

J. D'Hondt, CERN Member States

F. Gianotti, CERN Member States

**J. Mnich, CERN Member States &
Past Chair**

D. MacFarlane, USA

N. Lockyer, USA

N. Hadley, USA

I. Koop, Russia

V. Petrov, Russia

**All regions of the world
represented. Includes directors
of major Particle Physics Labs.**

Y. Wang, China

E. Álvarez, Other Countries

V. Matveev, Other Countries

P.A. Naik, Other Countries

T. Mori, Japan

M. Yamauchi, Japan

M. Roney, Canada

**H.Schellman, Chair of IUPAP C11
(ex officio)**

- ICFA has set up several Panels, each with about 16 experts from around the world, on specific technical areas. Each Panel organizes its own program including workshops, newsletters, schools, etc.

◆ Linear Collider Board (Chair: T. Nakada)

◆ Beam Dynamics (Chair: Y. Chin)

◆ Instrumentation Innovation and Development (Chair: A. Cattai)

◆ Advanced and Novel Accelerators (Chair: B. Cros)

◆ Interregional Connectivity (Chair: H. Newman)

◆ Data Preservation in HEP (Chair: C. Diaconu)

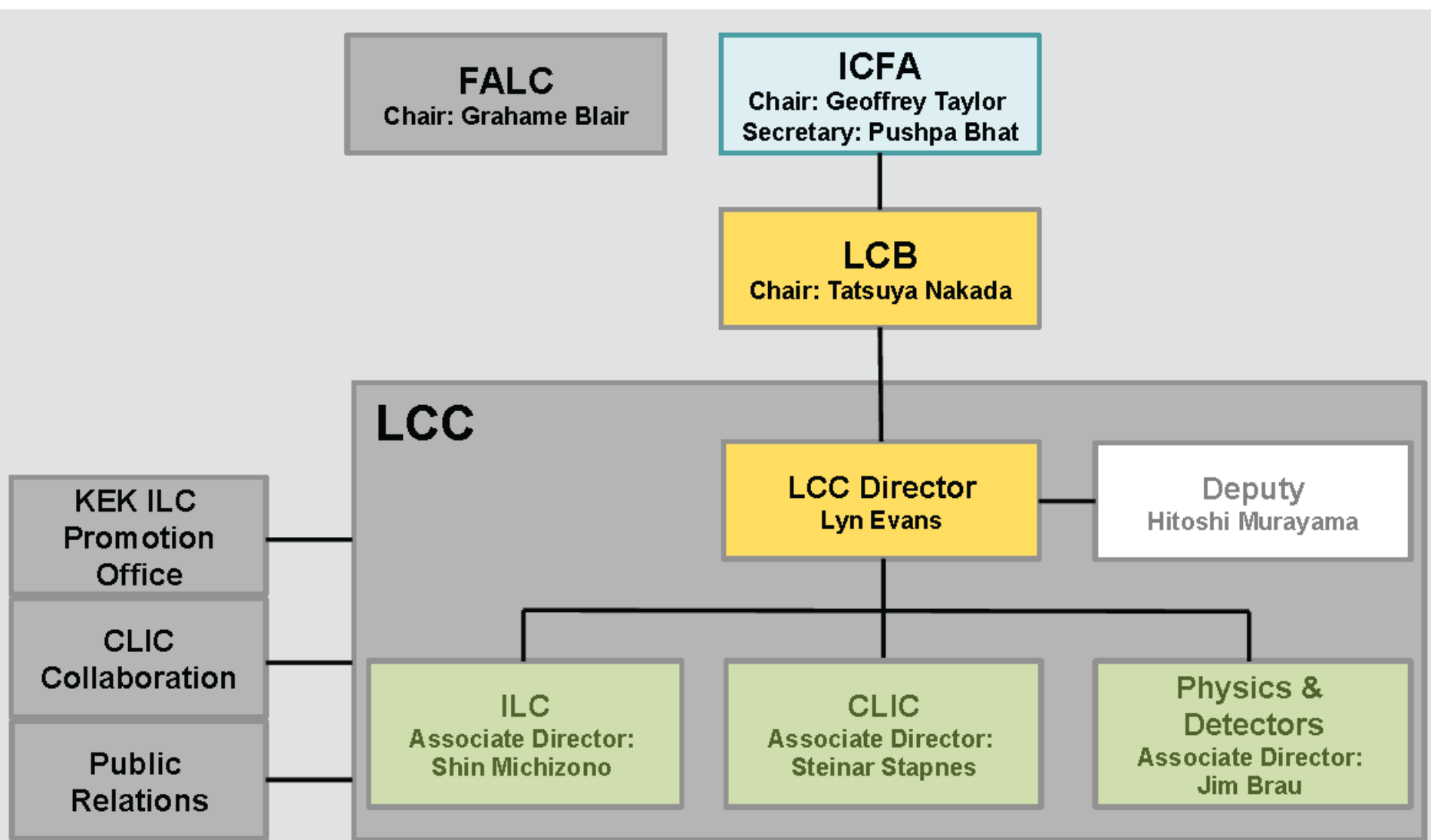
◆ Sustainable Accelerators and Colliders (Chair: M. Seidel)

◆ Neutrino Panel (Completed study; terminated)

Roadmap document: <http://icfa.fnal.gov/wp-content/uploads/ICFA-Neutrino-Panel-Roadmap-discussion-document-Final-Reversion-1-04.23.17.pdf>

- ICFA recently approved new “Policies & Procedures” providing guidelines for the Panels.

- Since ~2000, ICFA has been actively engaged in efforts towards a linear electron-positron collider
 - ◆ 2002: ICFA created the International Linear Collider Steering Committee (ILCSC) to promote the construction of an electron-positron linear collider through world-wide collaboration
 - ◆ 2003: Created the International Technology Recommendation Panel (ITRP).
 - ◆ 2005 : Set up Global Design Effort (GDE) to produce an ILC design and cost estimate
 - ◆ June 2013: Technical Design Report completed, including detectors, with costs
 - ◆ 2013: ILCSC ended; Linear Collider Board (LCB) formed to oversee the Linear Collider Collaboration (LCC)
 - Note: this structure includes ILC and CLIC
 - ◆ 2016: LCB/LCC mandate and structure updated
 - ◆ 2017 ICFA Statement endorsing ILC250 in Japan



ICFA Statement on the ILC Operating at 250 GeV as a Higgs Boson Factory

The discovery of a Higgs boson in 2012 at the Large Hadron Collider (LHC) at CERN is one of the most significant recent breakthroughs in science and marks a major step forward in fundamental physics. Precision studies of the Higgs boson will further deepen our understanding of the most fundamental laws of matter and its interactions.

The International Linear Collider (ILC) operating at 250 GeV center-of-mass energy will provide excellent science from precision studies of the Higgs boson. Therefore, ICFA considers the ILC a key science project complementary to the LHC and its upgrade.

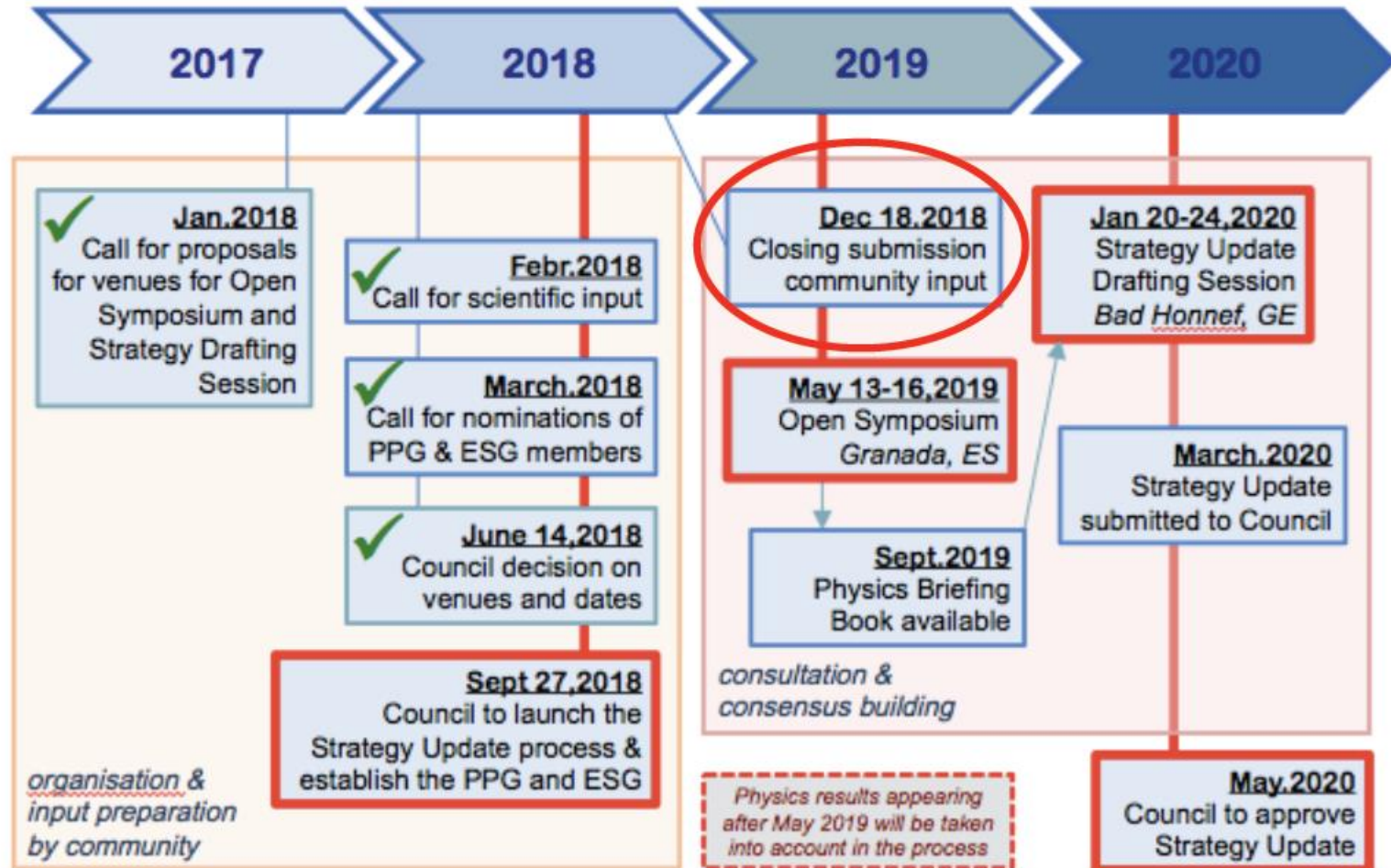
ICFA welcomes the efforts by the Linear Collider Collaboration on cost reductions for the ILC, which indicate that up to 40% cost reduction relative to the 2013 Technical Design Report (500 GeV ILC) is possible for a 250 GeV collider.

ICFA emphasizes the extendibility of the ILC to higher energies and notes that there is large discovery potential with important additional measurements accessible at energies beyond 250 GeV.

ICFA thus supports the conclusions of the Linear Collider Board (LCB) in their report presented at this meeting and very strongly encourages Japan to realize the ILC in a timely fashion¹ as a Higgs boson factory with a center-of-mass energy of 250 GeV as an international project¹, led by Japanese initiative.

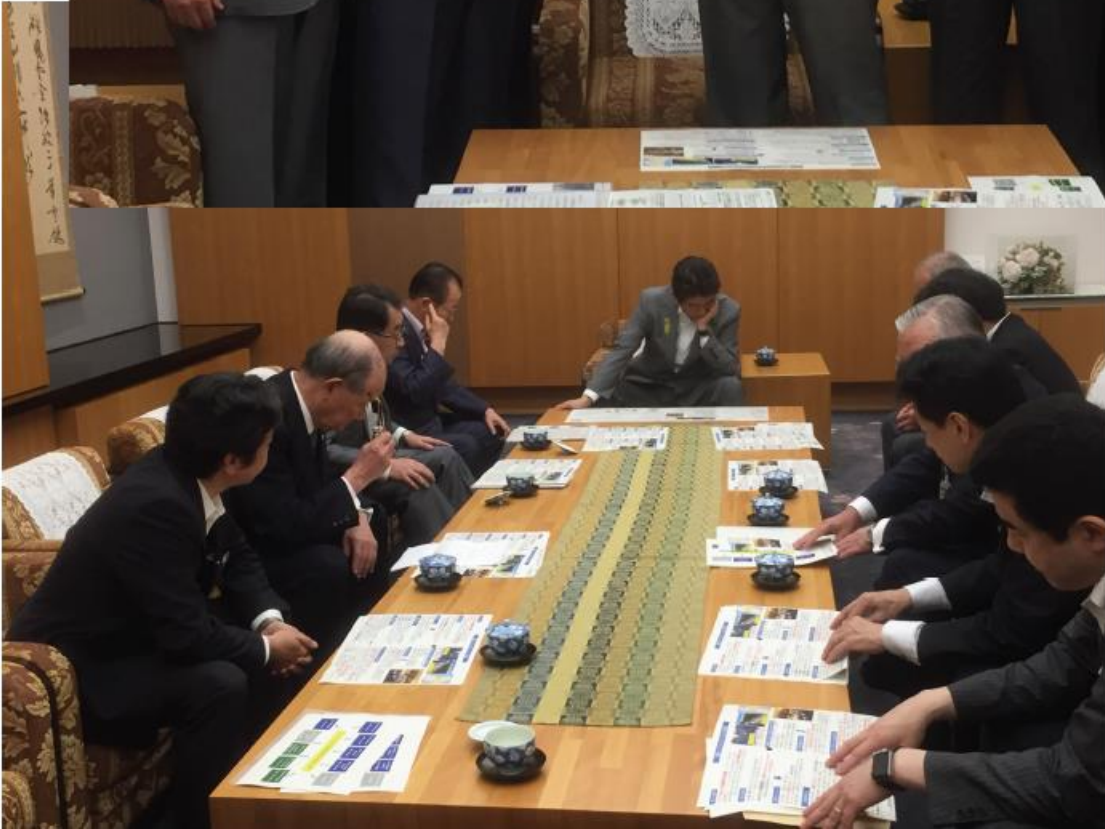
¹In the LCB report the European XFEL and FAIR are mentioned as recent examples for international projects.

European Particle Physics Strategy Update



- Project under serious consideration by the Japanese Government
 - ◆ Statement/Decision expected by the end of 2018
 - ◆ Japan is aware of the urgency and milestones (e.g., upcoming European Strategy Update)
- High level advisory panel and working groups were formed; studies completed and reports generated
 - ◆ Science Council of Japan will finalize extensive technical reviews in the coming 2-3 months.
- Encouraging interactions of Japanese Officials with agencies/governments in the US and in Europe have taken place
- Strong ongoing efforts in Japan with outreach to public, media, science community and industry

July 5th



Meeting with Prime Minister Abe July 5th

- Prime Minister Abe
- Deputy Chief Cabinet Secretary Nishimura
- Deputy Chief Cabinet Secretary Nogami
- Kawamura (Diet Budget committee chair)
- Shionoya (LDP election chair)
- Suzuki (Minister of Olympic)
- Onodera (Minister of Defense)
- Nishioka (AAA chair, MHI former CEO)
- Takahashi (Tohoku, Tohoku electric former CEO)
- Yamashita

- Promote International Collaboration and coordination in planning of future large accelerator facilities, providing regional balance and global benefits
- Guided by three basic requirements
 - (1) Physics Drivers, (2) Technology, (3) Resources
- Energy frontier colliders

◆ **Key Current Focus:** ILC in Japan (ILC and CLIC groups working together)

ICFA anticipates deliberations on other important proposals:

- ◆ CEPC/SPPC in China
- ◆ HE-LHC, CLIC, FCC at CERN
- Accelerator-based Neutrino Program
 - ◆ LBNF in US; J-Parc in Japan

- Needless to say that Particle Physics is a global enterprise!
- International HEP collaborations are thriving in Europe, Americas and Asia, as seen from presentations at this meeting.
- ICFA has an important role in bringing the global particle physics communities together, facilitating international planning, construction and exploitation of future large HEP accelerators
- ICFA continues to champion the cause of the ILC as a Higgs factory. The world HEP community awaits Japan's decision on the ILC!
- There are good reasons to feel optimistic about the future of our field!