

Toward 2012

Toward 2012

in ILCSC

in KEK

**Atsuto Suzuki
(KEK)**

**The 1st Baseline Assessment Workshop
at KEK, Sept. 7-10, 2010**

Comprehensive Project Design
Guidance (CPDG) of ILC
(Governance, Siting, Construction)



ILCSC Siting WG

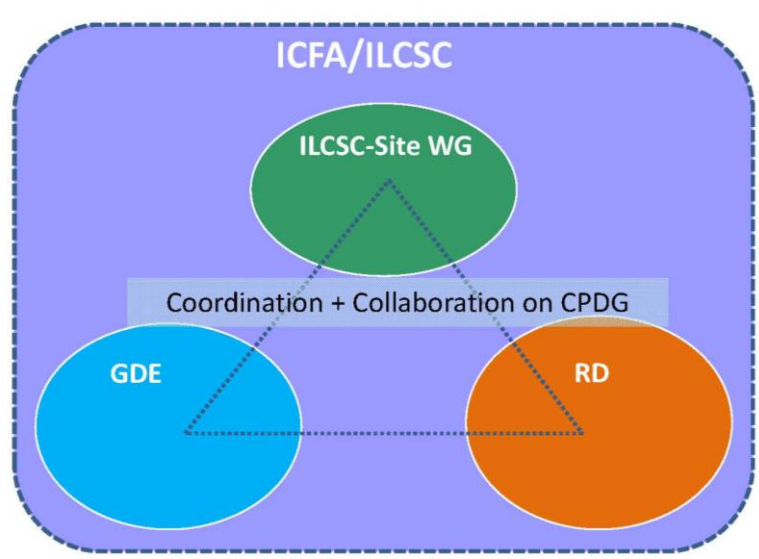
Joachim Mnich
Pier Oddone
Atsuto Suzuki

Right Time for Re-Examining CPDG of ILC

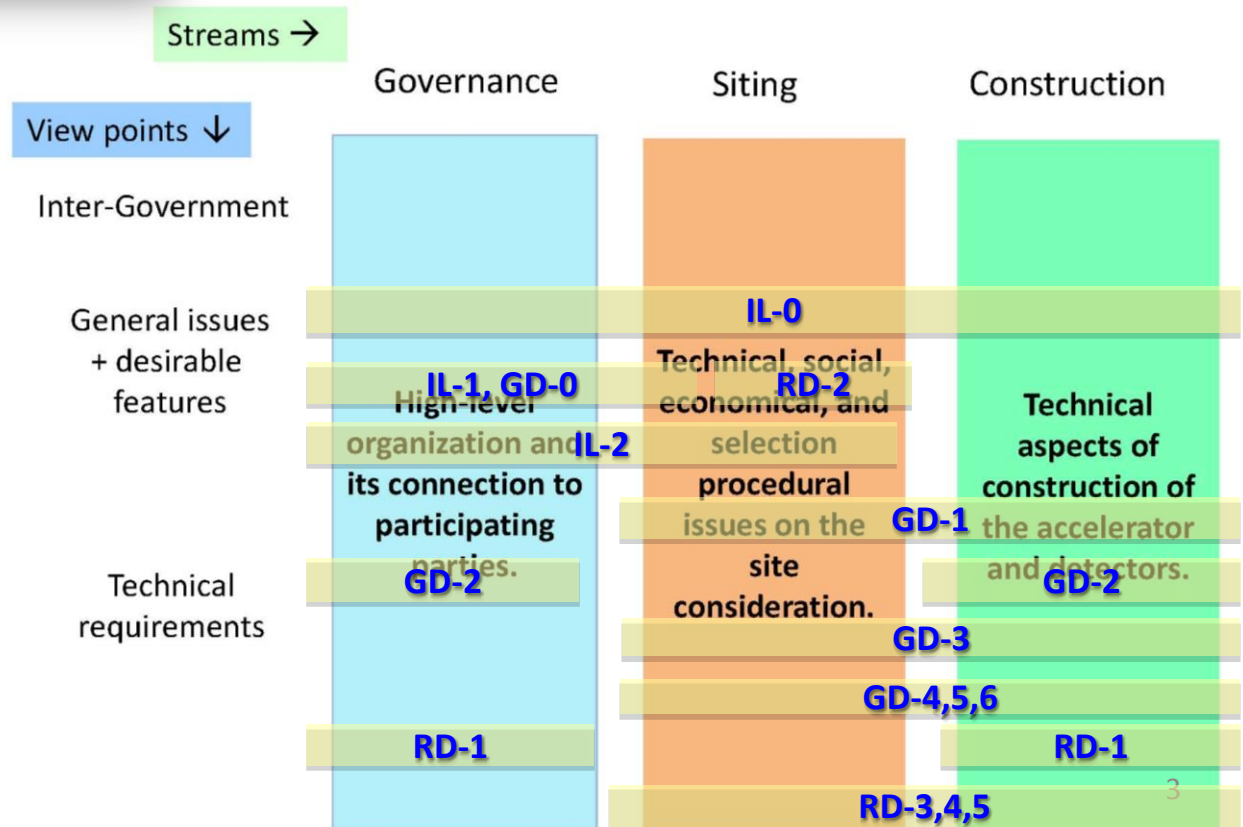
- In history,
 - Early studies of LC governance issues were done in 2000's
 - by regional bodies, individually (Asia, Americas, Europe) and
 - by OECD GSF Consultative Group on HEP.
- However, no internationally-organized body has yet to give a **coherent update** since then.

Toward 2012

- It is urgent to update our prospects, preference and understanding on the guiding principles for the project design and project execution to synthesize them into a **coherent single document**.



How we organize this work-1
 – Work Packages along Three Streams –



Request for Comment: White Paper on the Comprehensive Project Design Guidance (CPDG) for the International Linear Collider

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Proposal 1

3 separate volumes

ILCSC-WG

GDE

RD

An interim report in 2010, with the final version by the end of 2012

CPDG

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Appendix A: CPDG Outline
Appendix B: Comparison of Organizational Models

Draft Comprehensive Project Design Guidance (CPDG) for the International Linear Collider (ILC)

This is the Draft Comprehensive Project Design Guidance (CPDG) for the International Linear Collider (ILC), which has been submitted to ILCSC in August, 2010, by the members of the ILCSC Siting Work-group, Joachim Mnich (DESY), Pier Oddone (FNAL) and Atsuto Suzuki (KEK). Here is the [ILCSC Siting WG presentation](#) (1.2MB).

With the CPDG, the ILCSC intends to document our prospects, preference and understanding on the guiding principles for the project design and project execution for the ILC, and to synthesize them into a coherent single document on the basis of world-wide discussion and opinion exchanges by the members of the international High Energy Physics community.

At this moment (Summer, 2010), the CPDG is in its early draft stage, where only the Chapters 0, 1 and 2 have substantial contents. Other Chapters are mostly empty. That is why the prefix "Request for Comment:" is attached to the title: it means that the ILCSC is soliciting your opinions, comments, criticisms and suggestions for the overall organization of this document, or more appropriately, the organization of our thought process to pursue. The purpose of this web site (<http://cpdg.kek.jp/>) is to serve as the vehicle for this international discussion. You are encouraged to [download the draft CPDG](#), [browse it online](#), [submit your opinions and comments](#), and [find out what other colleagues are saying](#).

The present plan by the ILCSC is as follows -

- Collection of your inputs on the current draft: until some time in December, 2010.
- Circulate the "Interim Version.2" of Chapters 0 (IL-0), 1 (IL-1) and 2 (IL-2), on the basis of your inputs above: by the end of February, 2011.
- Launch of organized efforts on Chapters 3 through 8 (GD-1 - GD-6) by the GDE and Chapters 9 through 13 (RD-1 - RD-5) by the members of RD: sometime in 2010 or in early 2011.

We at the ILCSC Siting WG thank you, in advance, for your cooperation and participation!

CPDG Principles (IL-0)

Possible ILC Timeline for IL-0

Int. Gov.
Consultation

FALC

Int. Negotiation

Joint Site Assessment

Project Approval
Site Decision

Project Proposal

Site Assessment

ICFA/
ILCSC

Work Sharing

TDR

Transition Arrangement
(Pre-ILC Lab.)

ILC Organization
(ILC Lab.)

GDE/
RD

TDR Activities

Construction Operation

Site dependent design

2012

ILCSC approved

Proposal -2: Establishing Pre-ILC Lab. of Model-4



◆ Organization

- *Counseling body : representatives from participating labs*
- *GD and Directors*
- *Operation : on the basis of pre-construction budgets from each participating labs and common fund*

◆ Missions

- *To build and demonstrate operation of a realistic prototype accelerator system*
- *To coordinate the remaining technical and engineering efforts as left by GDE and RD*
- *To complete the engineering design report (EDR)*
- *To finalize the phase-1 site selection*
- *To bring the ILC project to the top level table among relevant nations*

Pre-ILC lab : the precursor body for the ILC organization

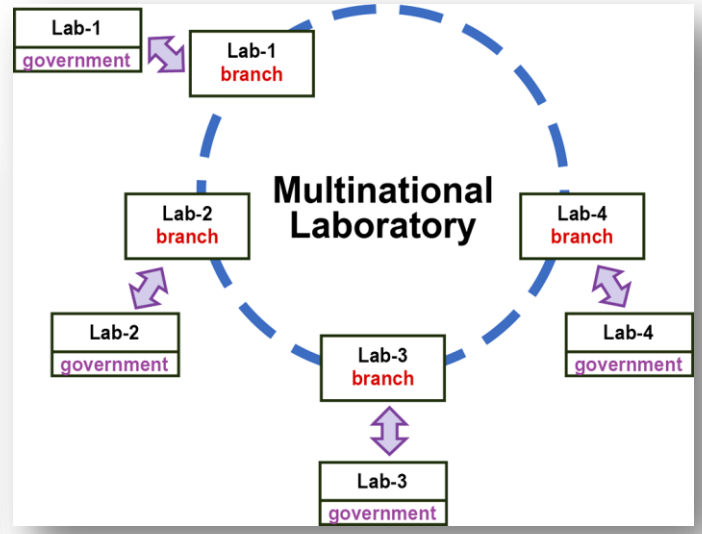
Top-Level Management (IL-1, GD-0)

B. Representative models for the ILC

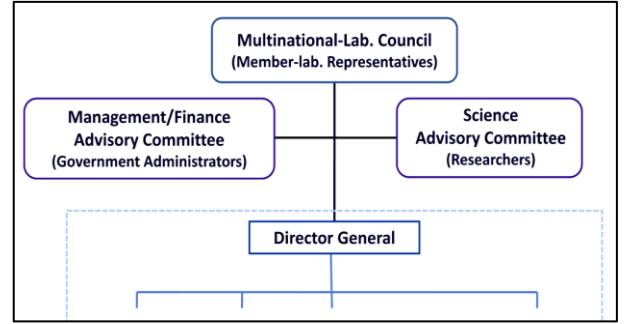
- ◆ Model 1: Treaty-based + mostly common-fund (CERN-like model) *working well, but taking a longer time for realization of treaty*
- ◆ Model 2: Limited-liability company + mixture of common-fund and in-kind contributions (XFEL-like model) *dual management structure*
- ◆ Model 3: Treaty-based + mostly in-kind contributions (ITER-like model)
- ◆ Model 4: Lab-agreement-based + mostly in-kind contributions
Pre-ILC Lab. (Multinational Laboratory Model)
- ◆ Model 5: Evolutionary Model : Model 4 to Model 1, or 3

RFC focused on Model 3 and Model 4 for reasons of their nature of “Decentralization and Partnership : Globalization”

GDE governance document



- Each of world HEP-labs, which wishes to participate, sets up its branch within Multinational-Lab. These participating HEP-labs are called member-labs
- This Multinational-Lab is virtually built first in ICFA, and inside the host laboratory after the host-site selection
- The member-labs contribute in sharing the human and financial resources



Start the site selection procedure from the next ILCSC

Siting – Site Selection Process (IL-2)

B. Examples of Site Selection Processes

	Olympic	ITER	ILC - Possibility
Stream	Staged approach: “ Application phase ” for pre-selection (questionnaire) and “ Candidate phase ” for hearing, down-selection and voting.	Nation-level down-selection, followed by ITER Negotiation’s meeting.	Possibly a staged approach: “ Phase 1 ” for scientific / technical validation , followed by “ Phase 2 ” for government-level negotiations .
Criteria for evaluation prior to final selection	Detailed questionnaire set and evaluation methodology by IOC.	http://www.naka.jaea.go.jp/ITER/official-J/pdfs/sitereq.pdf	Technical criteria can be established under ICFA/ILCSC.



Separation of “technical validation” and “final political selection” is important.

Siting – Site Selection Process (IL-2)

C. Possible Scenario toward Site-Selection

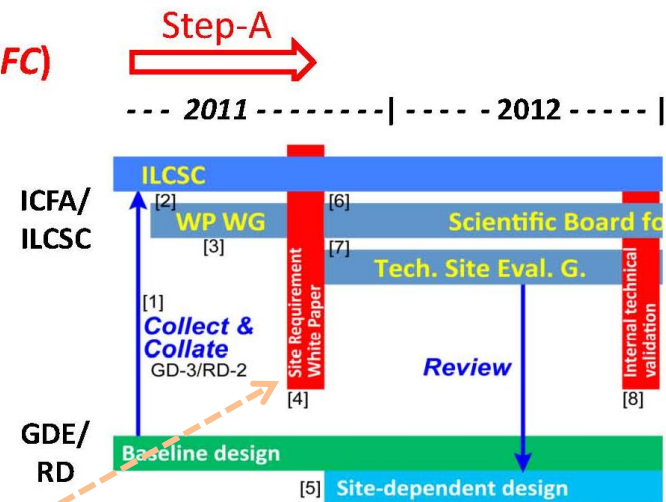
- ◆ *Step-A: Clarification of technical requirements and desirable features for the ILC site from the scientific and technical standpoints*

[1] Siting-WG: Collect and collate the results from work packages of GD-3 and RD-2 (**Table 2.2 in RFC**)
~ by the 2011 winter ILCSC

[2] Create “Site Requirement WG” for refining and documenting the requirements for site
at the 2011 winter ILCSC

[3] Site Requirement WG : Draft the “Site Requirement” which clarifies (i) requirements and desirable features of the site candidates, (ii) required site studies and investigations to perform at the time of TDR, (iii) schedule
~ by the 2011 summer ILCSC

[4] ILCSC: Publish the “Site Requirement”
just after the 2011 summer ILCSC



Siting – Site Selection Process (IL-2)

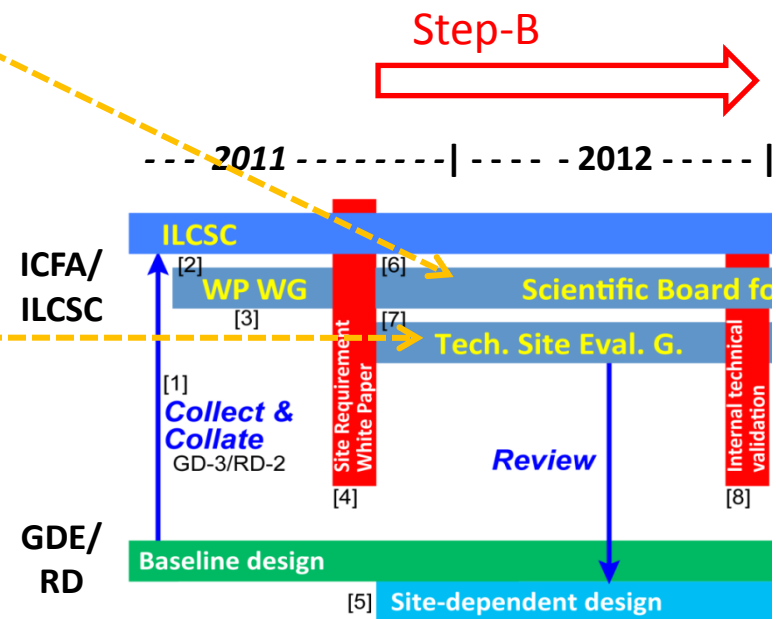
- ◆ *Step-B: Execution of site studies during TDP2, validation of site cases with respect to the “Site Requirement” , and publication of TDR which contains descriptions of “technically validated” site-specific designs*

[5] GDE CFS Team: Conduct site-dependent design studies in accordance with “Site Requirement”
~ by the 2012 winter ILCSC

[6] Siting-WG: Create “Scientific Board for Siting” to direct the studies and evaluations of the technical and legal issues
at the 2012 winter ILCSC

[7] Scientific Board for Siting : Create “Technical Siting Evaluation Group for TDR (TSEG)”
~ just after the 2012 winter ILCSC

[8] TSEG: Members from PAC and experts on geology and civil engineering ; Validate the site candidates to be discussed in TDR
by the end of 2012



In RFC : no descriptions of “how and when” listing up candidate sites

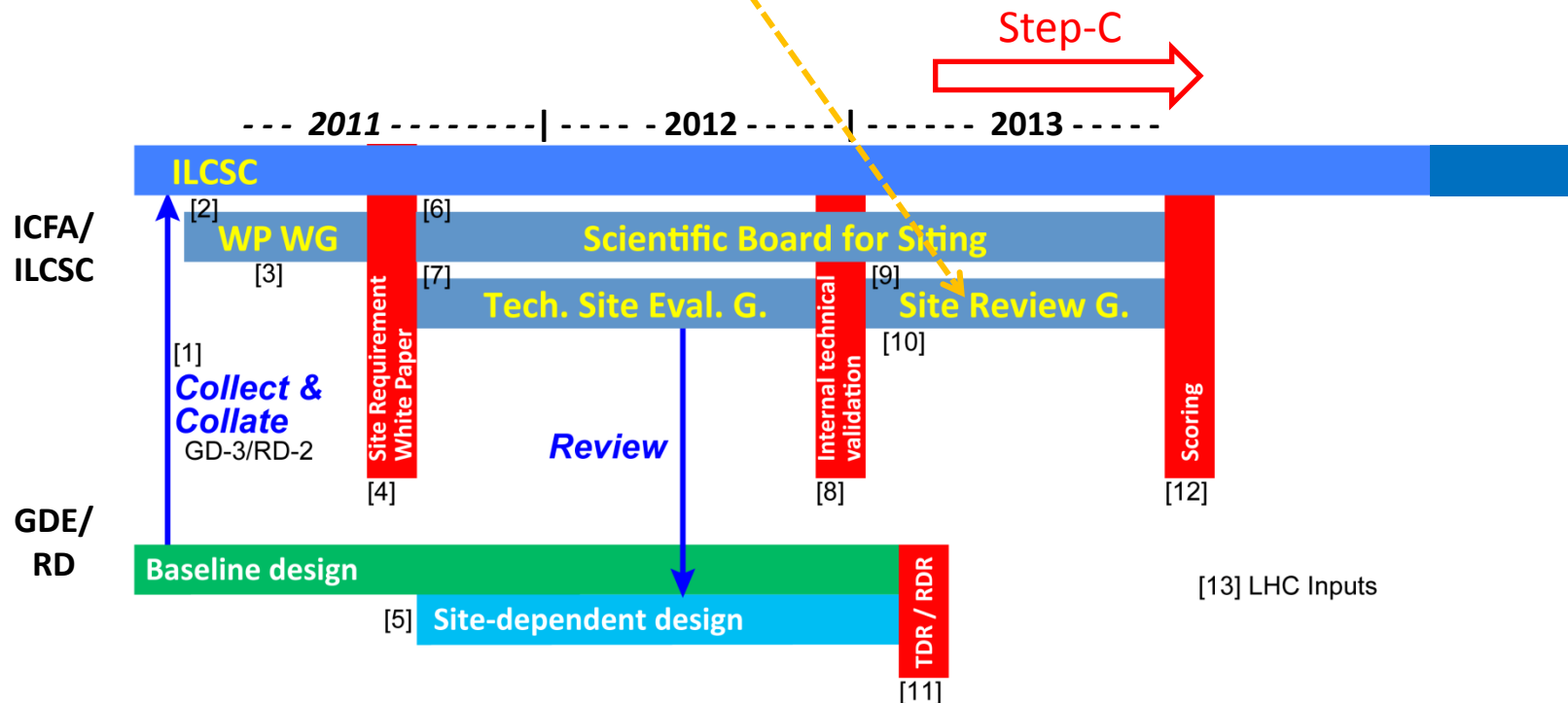
Siting – Site Selection Process (IL-2)

- ◆ *Step-C: Technical review, assessment and scoring the candidates sites that are discussed in the TDR*

[9] [10][12] Scientific Board for Siting :

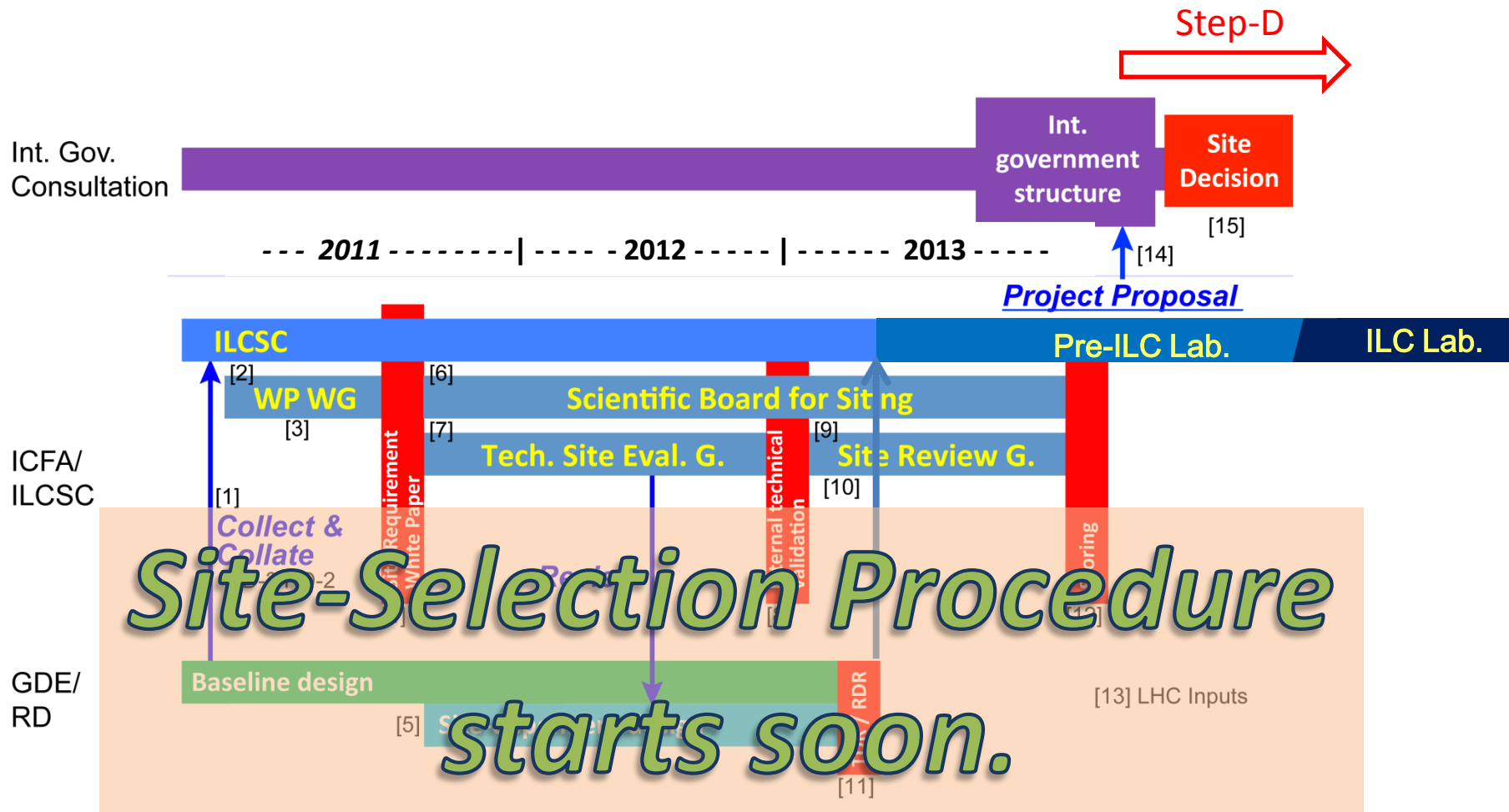
Create a “Site Review Group” which conducts systematic scoring of the site candidates as discussed in the TDR

by the end of 2013 (?)



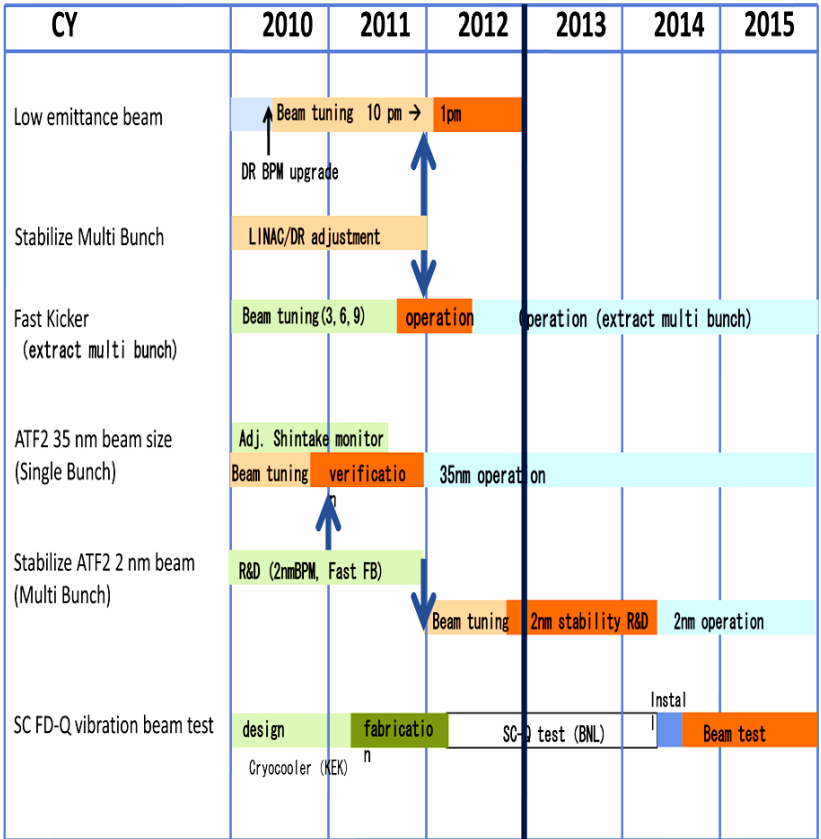
Siting – Site Selection Process (IL-2)

- ◆ *Step-D: Process of narrowing-down the site candidates through an inter-governmental level consultation, including discussions on general political aspects*

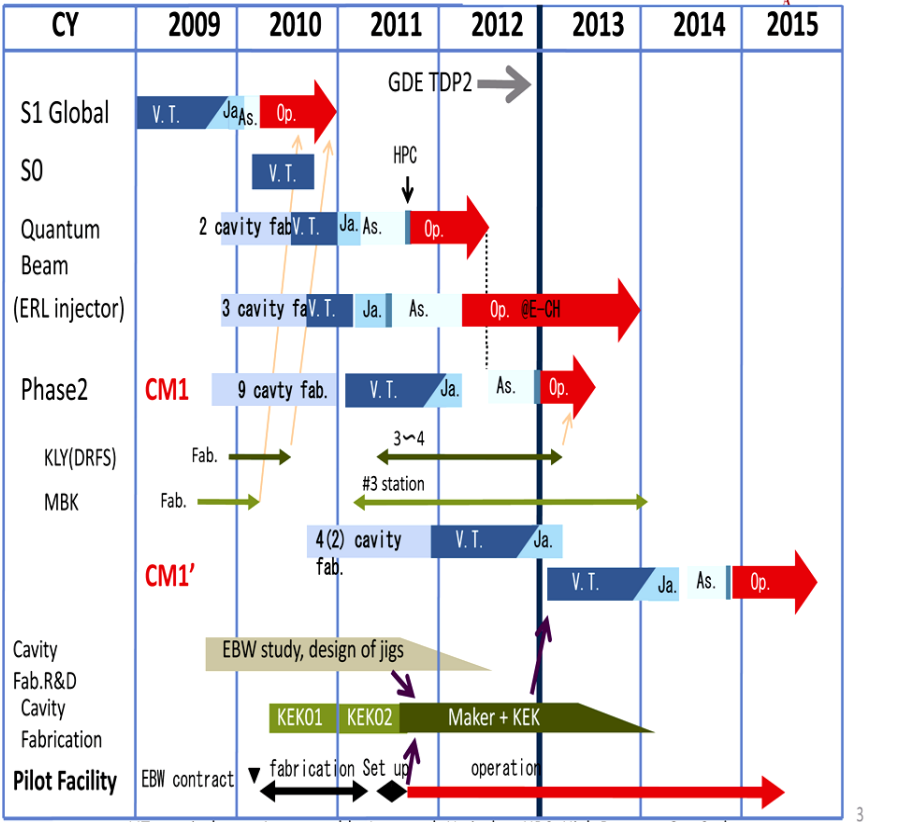
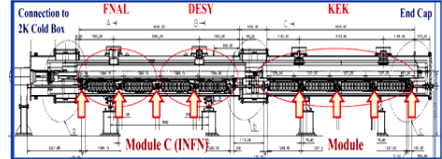


Toward 2012 in KEK-1

ATF Schedule

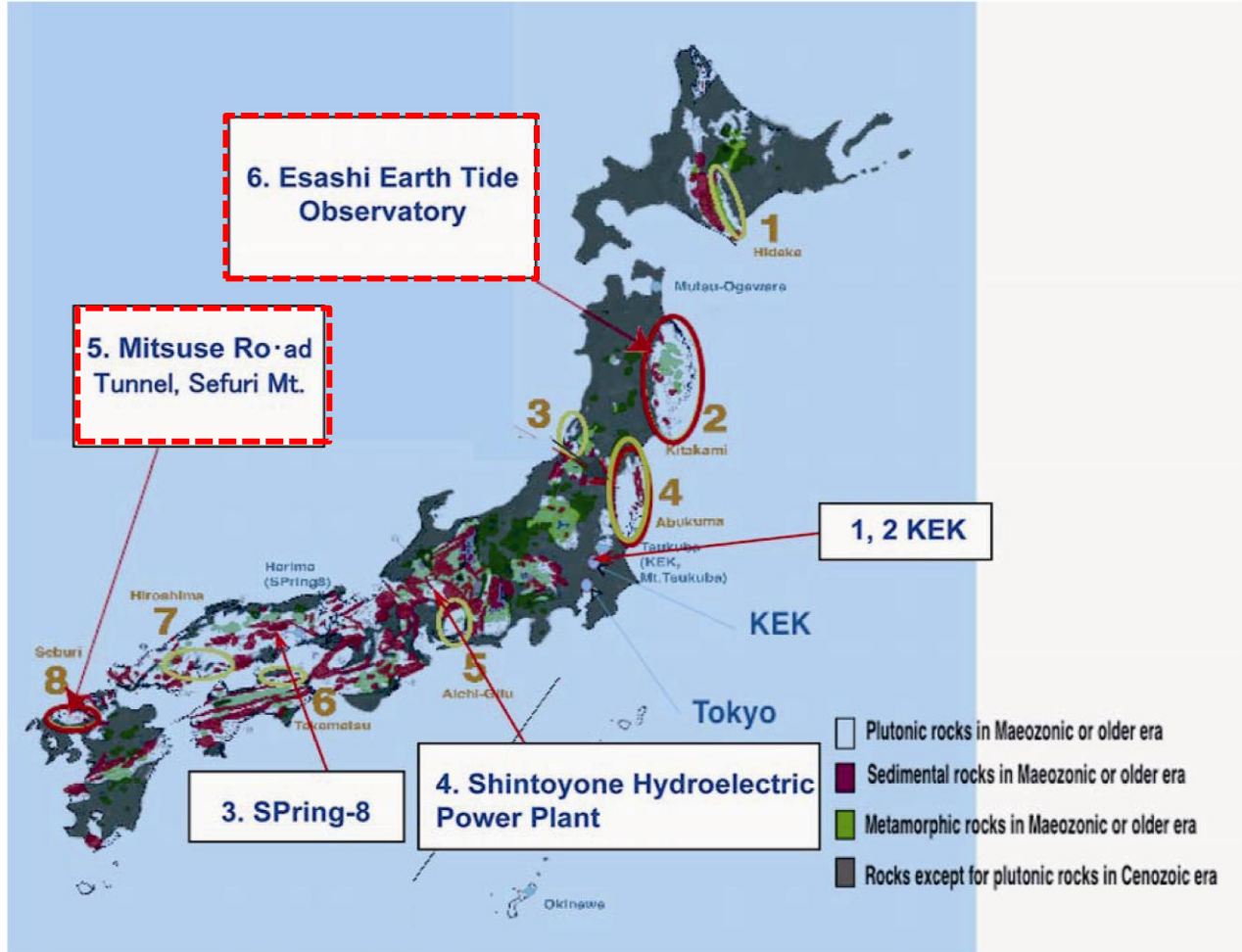


STF Schedule



V.T.=vertical test, As.=assembly, Ja.=attach He jacket, HPC=High Pressure Gas Code

Full Geological Investigation : 2 Candidate-Sites in 2010



New Workshop inside KEK

Industry A



Industry C



Industry B

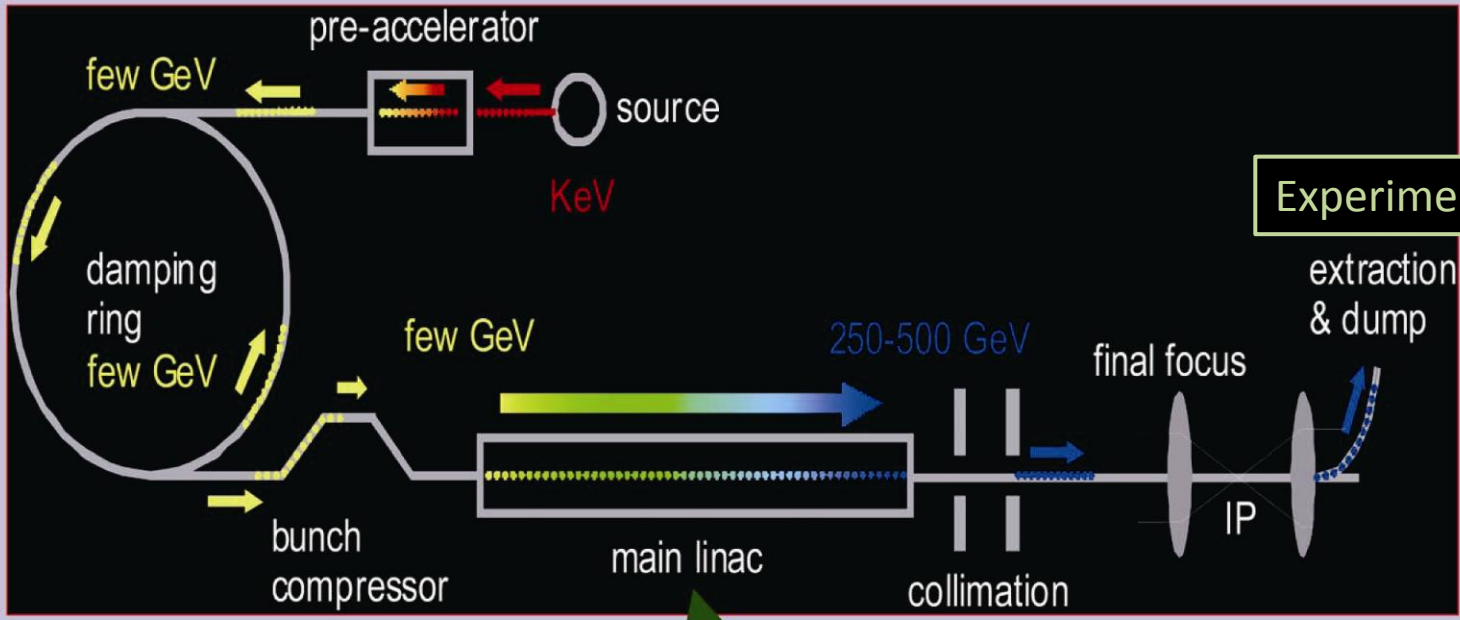


Industry X



New Facility (KEK/ILC Lab.) ← ATF + STF

Starting Point for the GDE



Superconducting RF Main Linac

22-July-05

International Conference on Physics in Intense Fields (PIF2010)

24 - 26 November, 2010

KEK, Tsukuba, Japan



[Welcome](#) | [Committees](#) | [Program](#) | [Registration](#) | [Proceeding](#) | [Participants](#) | [Venue](#) | [Accommodation](#) | [Contact Us](#) | [Visa](#)

Welcome to the International Conference on Physics in Intense Fields (PIF 2010) !

Recent developments of the high-intensity lasers are opening a new window to fundamental physics as well as applied researches. In particular, the ultra-high intensity realm of quantum electrodynamics (QED) is within reach, and its non-perturbative nature will be experimentally studied in near future.

Investigations using the high-intensity lasers are intimately tied up with physics of strong-field dynamics in other areas, such as the quark-gluon plasma of quantum chromodynamics (QCD) which allows for strong non-Abelian gauge fields, or astrophysical phenomena in magnetars having critically strong magnetic fields. Thus, collaborations over a wide range of physicists are extremely necessary for the global understanding of strong-field dynamics.

The purpose of the conference is to gather experts on the strong-field dynamics from various areas of physics and discuss the prospects of fundamental physics using high-intensity lasers. Although the conference will mainly focus on the aspect of fundamental physics, it is closely related to wider subjects extending from laser accelerations to nuclear and material sciences, and we welcome participations from wide areas of related fields.



*At Kobayashi Hall in Kenkyu Honkan Bldg.
where the conference is going to be held.*

- Deliberate the countermeasure against “History Repeat”



- Clear vision
- Anticipated timelines for all possible processes up to project approval

CPDG

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