



# HiGrade WP2 & WP4 Coordination & Governance

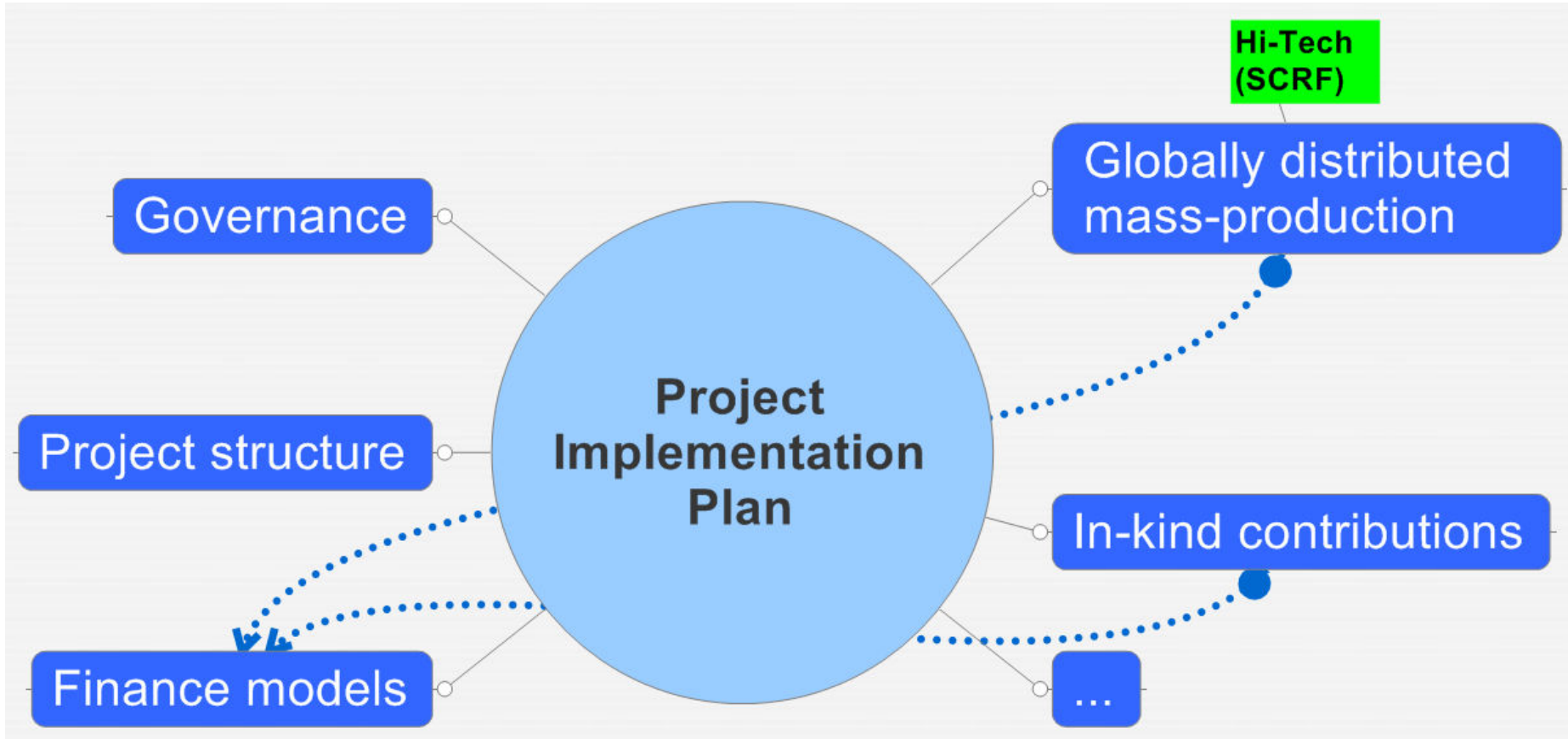
Brian Foster (Oxford & GDE)

HiGrade Meeting  
CERN 25/02/10

A horizontal dotted line of small yellow dots runs across the bottom of the slide, mirroring the one at the top.

- NW has discussed the general coordination activity in Europe and how it steers ILC efforts.
- We both contribute to the way in which the European efforts feed into the global project.
- I also make regular trips to the major science funding agencies – CERN, France, Germany, Italy, UK (too often) to discuss ILC R&D in their plans.

- Last year I visited Rolf Heuer, M. Spiro and G. Wormser in Paris, B. Vierkorn-Rudolph in Bonn, R. Petronzio in Rome and everyone in the UK .
- This year I have already visited M. Spiro and arranged to see R. Petronzio at the ECFA meeting.
- I make regular presentations on ILC plans to plenary ECFA, European bodies such as RAMIRI symposium etc.





# HiGrade governance membership

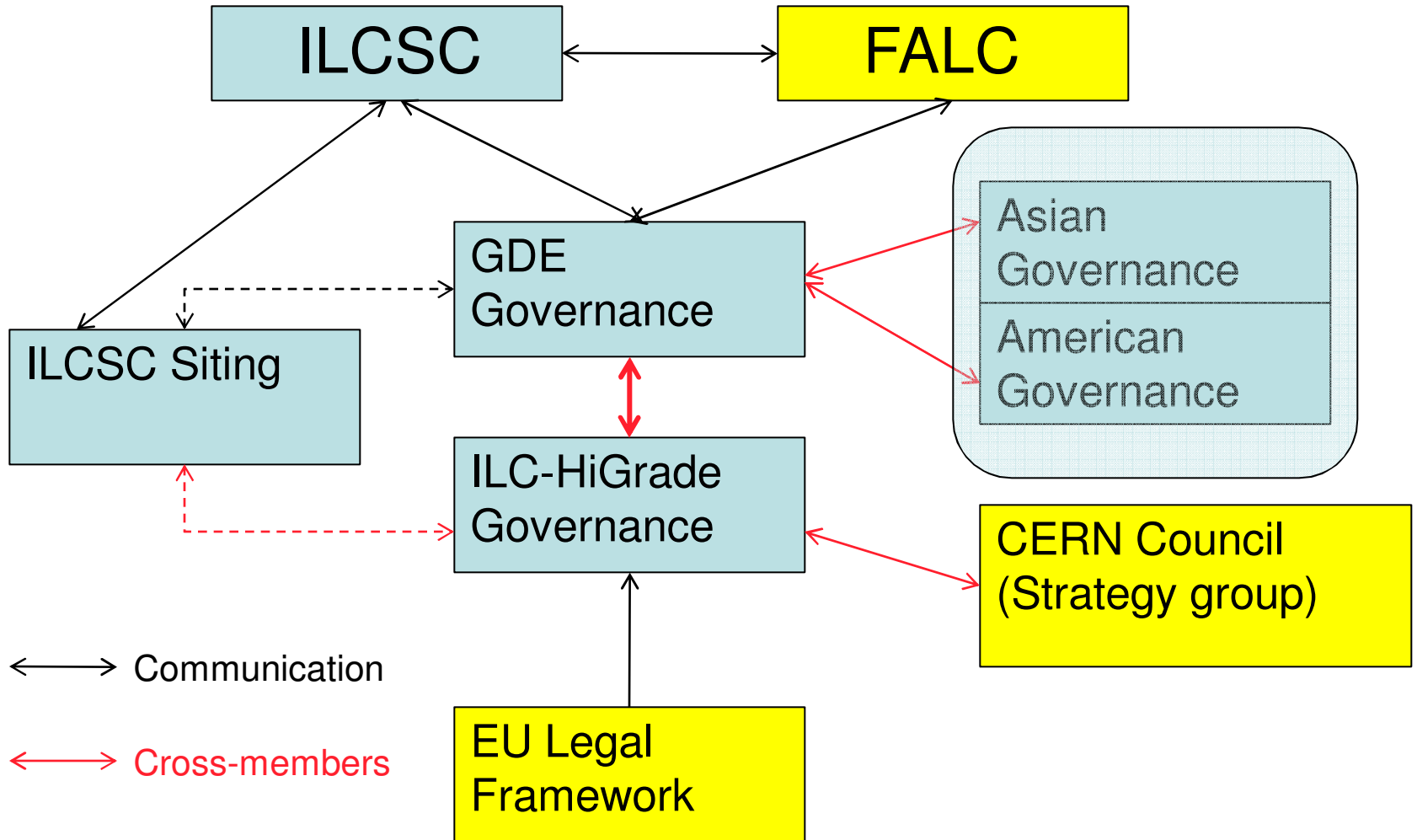
- Membership BF (chair) J-P Delahaye, U. Doselli, E. Elsen, J. Mnich, F. Richard, S. Stapnes, G. Wormser
- Cross-members with GDE group (both chaired by BF) and ILCSC siting group – (see next slide) - ensures coherence and avoids duplication of effort.
- Also representation from European Strategy Group (SS) run by CERN Council.



# The working groups

- There is also a central GDE group studying this. This has been set up by EC and consists of:  
BF (chair), B. Barish, M. Harrison, E. Paterson, S. Yamada.  
Several meetings have taken place.
- Group can be extended either for particular meetings or by co-option.

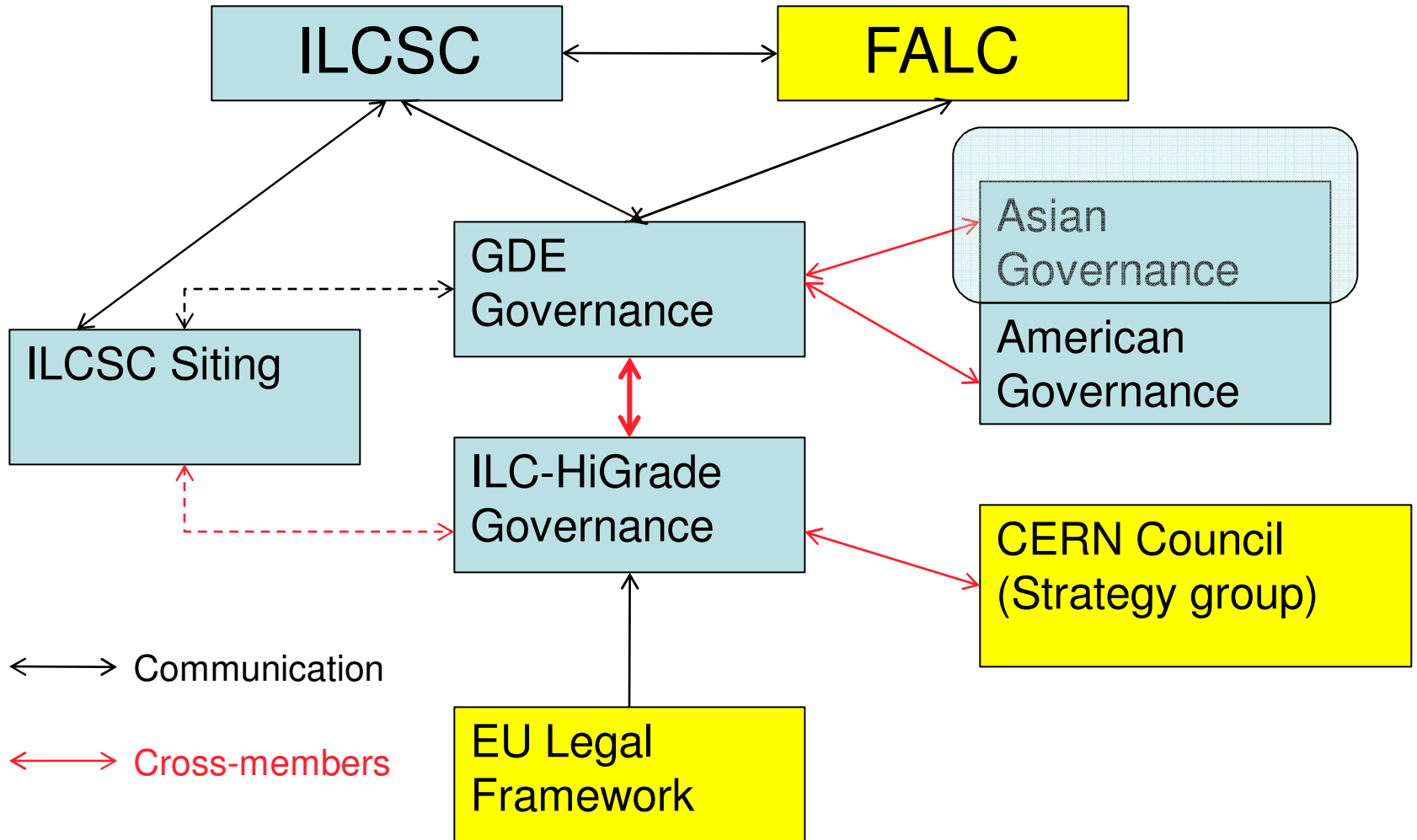
# Governance



↔ Communication

↔ Cross-members

# Governance



↔ Communication

↔ Cross-members





## Progress since last meeting

- The ILC-HiGrade WG has met 5 times, mostly by telecon but sometimes “in person”.
- Now well on our way to fulfilling the Road Map presented to FALC which culminates in an interim report on Governance to be presented at ICHEP in Paris.
- General principles agreed, need to be finalised and document drafted.
- Some activity also from ILCSC/ICFA, on siting, which is their responsibility, and in other areas.



# Timescales

- 1) FALC presentation – July 13<sup>th</sup> 2009
- 2) Albuquerque Sep 29 – Oct 3 – tentative conclusion on funding model – fractions per partner, size of common fund etc.
- 3) EC face-to-face ~ Jan. Oxford – conclusion on funding models, preliminary conclusion on governance model options
- We are here
- 4) Beijing March/April 2010? – conclusion on governance model options
- 5) Write preliminary governance report and iterate May – June 2010
- 6) Present to and hope to get agreement from ICFA, ILCSC, PAC & FALC – June-July 2010?
- 7) Present at Paris ICHEP July 2010 – N.B. this is not a final report and no funding authority/government will be expected to sign off on it. Comments/criticisms etc however would be **very** welcome.



## Overview of Governance activity

Since last meeting have gathered information from “cognate projects”. First we produced “1-page summaries” of the projects to gather together the important facts and the open questions or issues that each project raised.

This then led to discussions, further fact gathering etc.

Cognate projects include: ALMA, ESS, FAIR, ITER, SKA, XFEL.

We have also examined initiatives from Brussels, such as ERIC framework and whether they can be applied to our problems.



# 1-page summary - e.g. ALMA

Complex agreement – ALMA is not a legal entity.

Host (Chile – special position) + regional membership (Americas (=US/Canada (+ Taiwan!)), Europe (=ESO), Asia (=Japan – with link with Taiwan). No clear leading region; Japan joined late, leading to “de-descoping”. All partners involved in ~ all aspects of project.

Each region carried out separate procurement for WBS items for which it took responsibility; Common fund does not exist. Total cost ~ \$1.25 billion (2008\$)

Host provides site only; present in Board but does not vote on many things. EU +Americas 50:50 before Japan; Japan then 25% of enlarged project => EU:Am:Asia 3/8:3/8:1/4

Project reports to ALMA Board which meets 3 times per year with extra telecons.

## Issues

- ALMA’s lack of legal standing is problem; staff employed by two different bodies;
- Procurement led to 3 different designs of antennae – although there are positive aspects of this (risk reduction) it is a problem;
- Partners joining (and leaving) not properly catered for;
- Management control weak – multiple paths of reporting to regional funding agencies;
- Council subordinate to regional interests and did not become robust;
- Ownership of assets, pensions fund etc. needed earlier clarification.



## Pro Formas

In order to get information into a common format that facilitates comparison and deduction, have completed “pro-formas” for representative subset of projects. Pro-forma headings are:

- 1) Legal Status of project
- 2) Management Structure
- 3) Representation and voting structure in governing body
- 4) Duration of agreement
- 5) Attribution of in-kind contributions, value engineering etc
- 6) Running costs
- 7) Budgetary control



# Example Pro Forma - ITER

## 1) Legal Status of project

ITER has a legal personality and as such can make contracts, licenses, legal proceedings and agreements. The ITER Organisation (IO) employs the core ITER organisation and project personnel. In addition to the IO there is a local Host Organisation operated by CEA which is responsible for the non-project related activities which are typically related to site support such as services to the site boundary, land, transport, telecommunications and other such things. There is also site support staff employed in medical, emergency services, cafeteria, and environmental activities.

An ITER Agreement consisting of 29 articles, common understandings and annexes supports ITER. These documents were generated and signed serially over a two-year period by all seven collaboration members. The agreements are quasi-legal in nature and cover such items as intellectual property, privileges and immunities, and the umbrella agreement. Common understandings cover more project related issues such as cost sharing, schedule, operations, procurement practices, and cost estimates. In addition the IO has some bilateral agreements such as one with CERN.

“The ITER Organization shall have international legal personality, including the capacity to conclude agreements with States and/or international organizations.

The ITER Organization shall have legal personality and enjoy, in the territories of the Members, the legal capacity it requires, including to:

- a) conclude contracts;
- b) acquire, hold and dispose of property;
- c) obtain licenses; and
- d) institute legal proceedings.”

Decommissioning is by building up a fund during operation (presumably as an additional charge on top of full operations cost) which is then handed over to host state who then deal with any shortfall and decommission, issuing bulletins to member states as they progress.

In addition to the construction project the agreements cover operations and deactivation.



# Funding Models for the ILC

## Summary of cognate project provision:

- ALMA – Regional membership, not related to GDP, host state not full partner
- ITER – National membership, not related to GDP, host state premium 45%, fixed contribution from other states.
- XFEL (FAIR is very similar) – National membership, not related to GDP, host state premium  $> \sim 50\%$ , bilateral negotiation with host for partner contributions.
- SKA – at early stage - financial model not fixed – host state status likely to be similar to ALMA.
- ESS – financial model not known in detail but similar to XFEL – Host state (Sweden/Denmark)  $> 50\%$ ; national contributions ad-hoc in bilateral negotiations with host states.
- CERN – GDP-based financial contributions, with short-term agreed deviations, no host state premium (but moral pressure leads to voluntary host state contributions), national membership.
- LHC – 80% GDP based (=CERN); 20% non-member-state - mostly in kind. Summary – not GDP-based, national membership; non-member-state contributions by bilateral negotiation with CERN.



# Funding Models for the ILC

## Conclusions:

- 1) There are no currently existing “regional” models.
- 2) ~All models where the host state has a substantial scientific input have host state premiums  $> \sim 50\%$ . Practice on how the host state contribution is calculated varies; however cost of land should not be included in this; other things should be included.
- 3) No currently proposed new project has GDP-related contributions.
- 4) The balance between in-kind and cash contributions is an issue – pp detectors succeed by having a substantial common fund and an ethos of sharing & support. Experience from the monitored projects implies that e.g. ITER common fund is insufficient for effective project management.
- 5) “Value estimate” methodology is generally accepted basis for costing.
- 6) Contingency is not explicitly included in the baseline cost and is an internal matter for each of the partners to safeguard being able to provide their deliverables.





# Funding Models for the ILC

## Recommendations:

- 1) Contributions should be based on a host + member states model with the host paying a premium of approximately 50%. The host contribution should not take account of the cost of any land acquisitions.
- 2) Member state contributions should not be based on GDP but on the number of interested states and their willingness and ability to contribute.
- 3) A Common Fund of > 20% should be the goal. An overall project contingency can be effectively implemented through the Common Fund.
- 4) Cost estimates should be done using “value estimate” methodology and should not include explicit contingency.



## SUMMARY, FALC Mumbai meeting, 01/10

- We have compiled information on most of the major new projects in a common “pro forma” format to facilitate comparisons and conclusions;
- We have agreed on recommendations for the financial model for ILC construction;
- We have had preliminary discussion on the ILC project governance recommendations, which will be concluded at the Beijing ILC meeting in March;
- We are sticking to our timetable, which implies that a document setting out this work will be available in the early summer. We would appreciate the chance to present and discuss this with FALC before presenting it at the ICHEP10 conference in Paris at the end of July.



# Outcome of FALC

- For first time, some real engagement from FALC.
- CERN are interested in bringing up question of funding models for SLHC and there are clearly common interests with ILC.
- M. Spiro is President of CERN Council and a member of the “Governance Group” – many of these ideas are his.
- He in consultation with R. Heuer and BF has drafted document for next FALC meeting directly after CERN Council in June



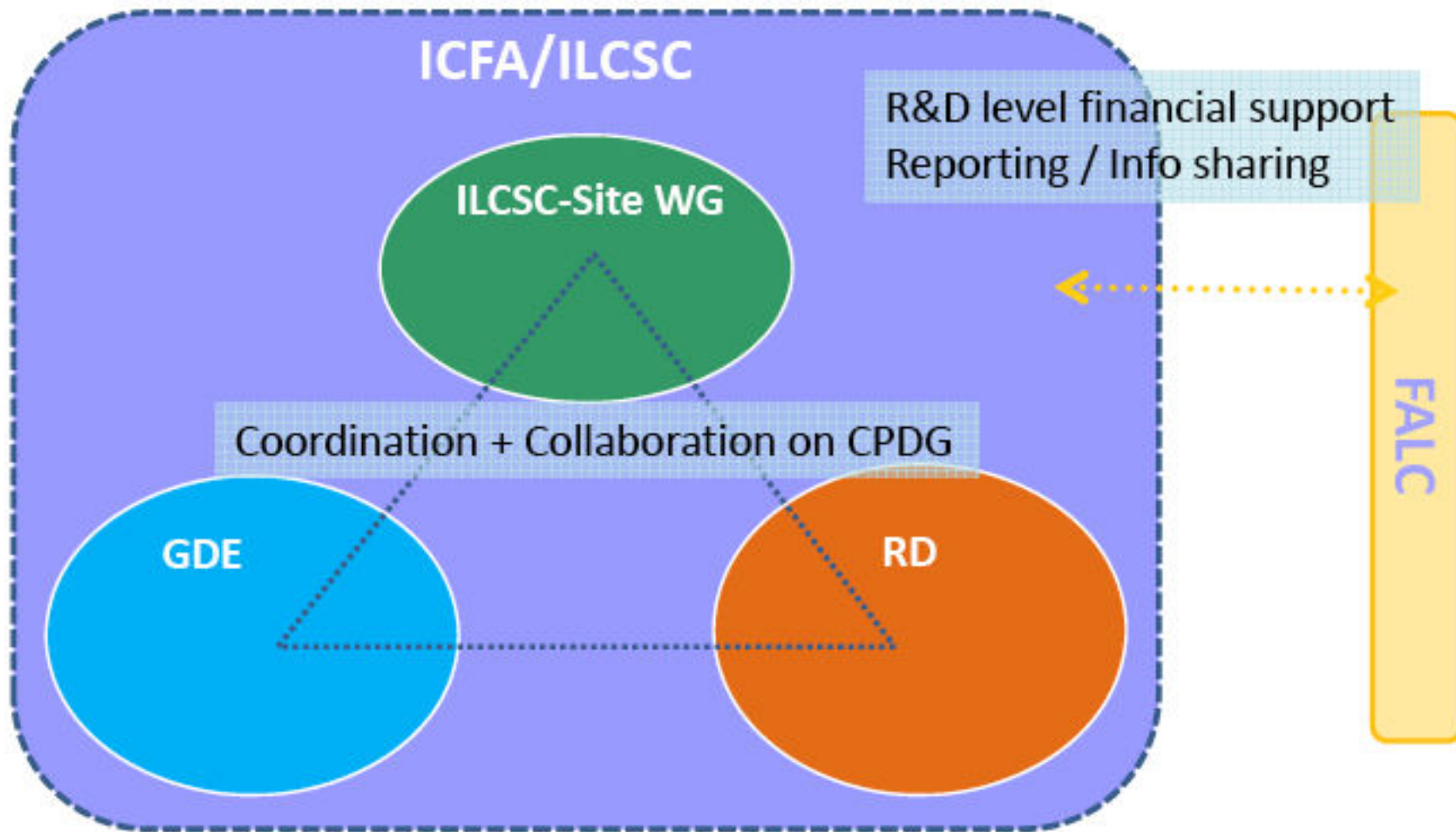
## Work not reported to FALC

- Next step is to look at governance models. Discussed in detail at EC Governance committee at Oxford in January and then further discussed at HiGrade Governance this month.
- Preliminary conclusions endorsed by both bodies and to be finalised at Beijing.
- Since these are still preliminary I should not report them here.



## ICFA/ILCSC activity

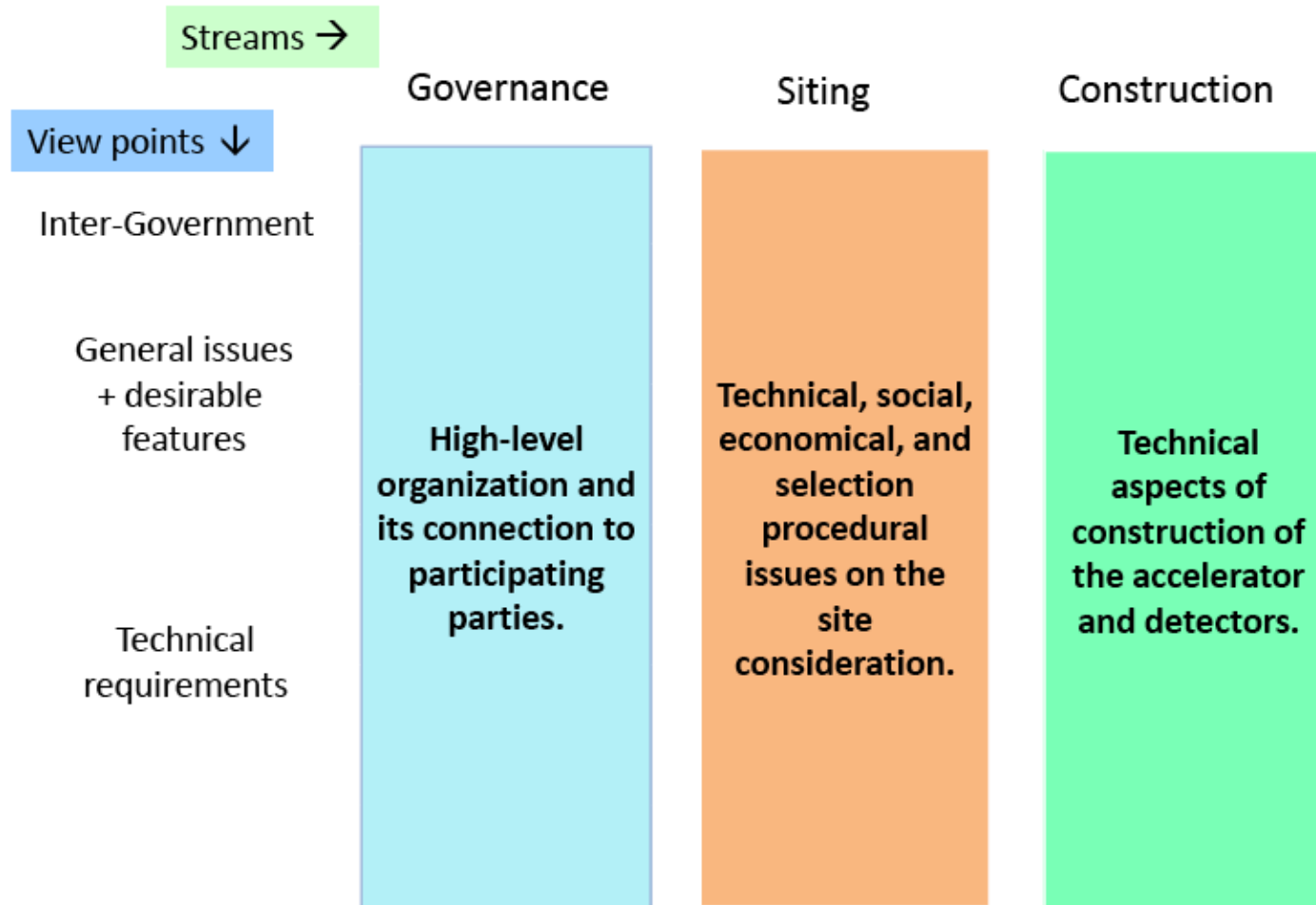
- A. Suzuki, current ICFA chair, has become much more active in involving both ICFA and ILCSC in Governance issues.
- He has small group of “young” Japanese advising him in this area.
- AS is only surviving member of previous moribund siting group, including A Wagner (emeritus) and P. Oddone. It was always the case that ILCSC had responsibility for siting. AS also exercising supervisory authority over other activity.





# ICFA/ILCSC activity

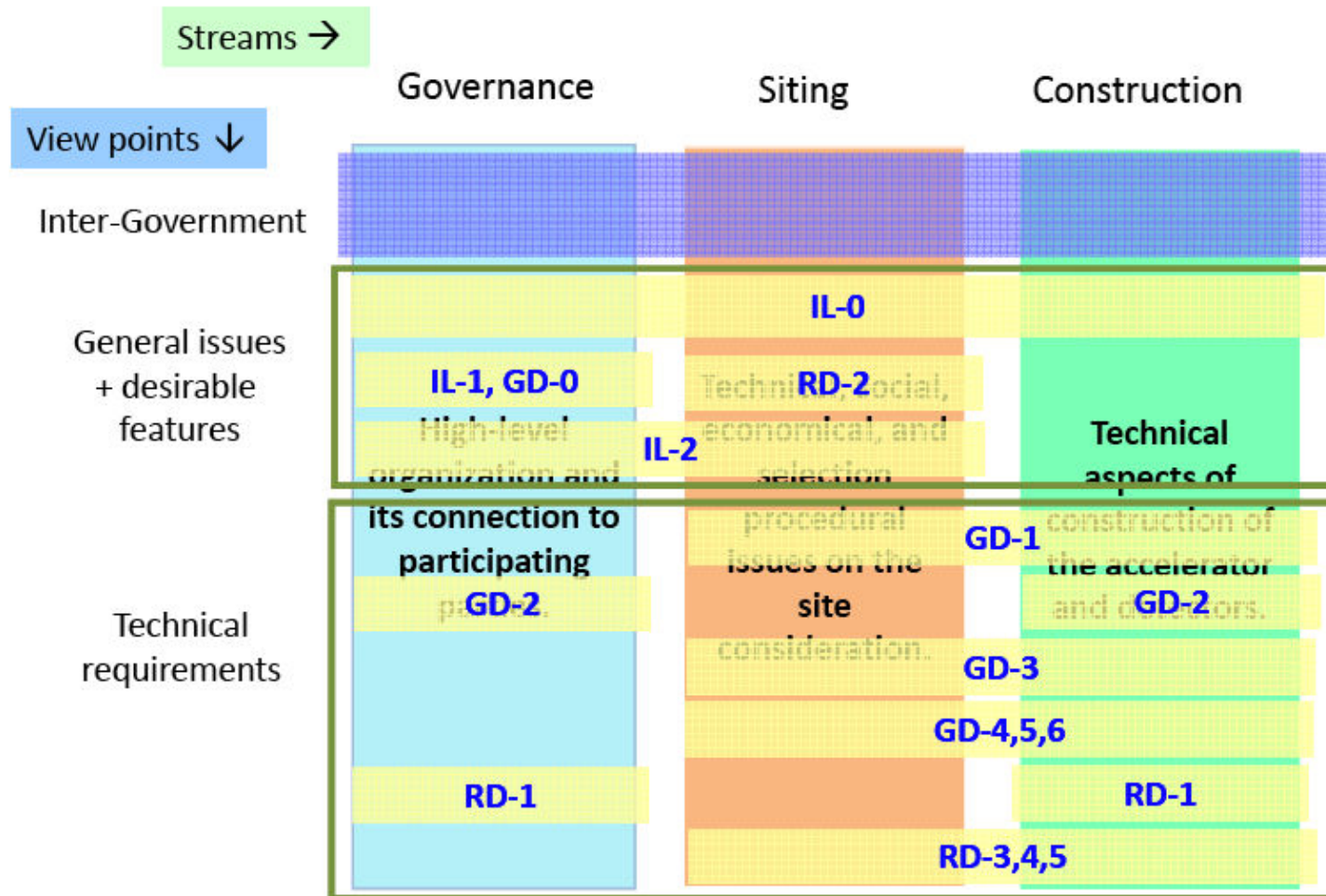
How we organize this work-1  
– Work Packages along Three Streams –





# ICFA/ILCSC activity

How we organize this work-2  
 – Work Packages along Three Streams –





## IL-1, GD-0: Top-level management

Streams: G

View point : General issues

Drafted by: ILCSC, GDE  
Draft submitted to: ICFA  
Assessed by: ICFA (FALC, if possible)  
Report finalized by: ICFA/ILCSC

### Top-level management structure

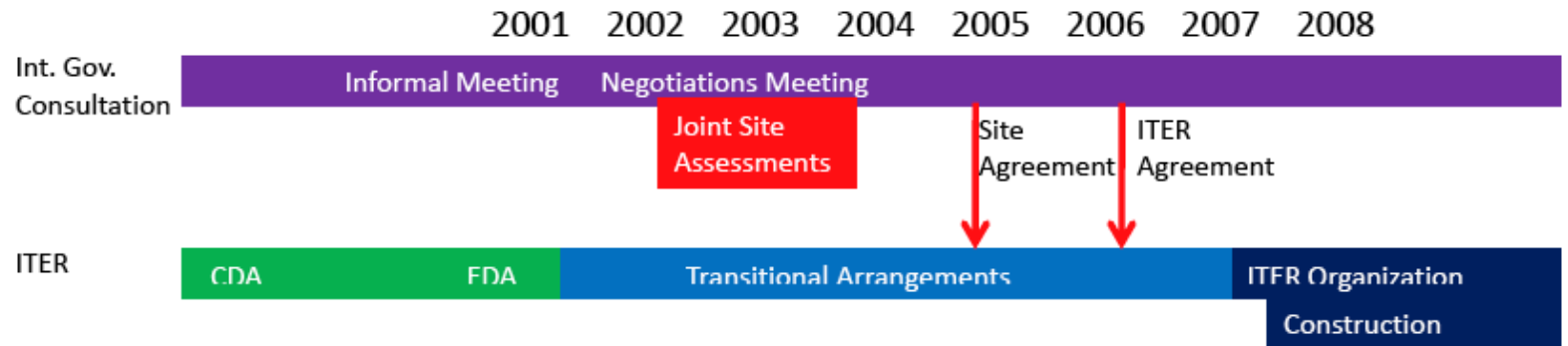
i.e. org. structure of the top-level governing body, and its relation to collaborating institutions and participating nations.

1. Assessment of possible model examples (CERN-like, ITER-like, Euro-XFEL-like ...) and our recommendation.
2. Desired process for establishing the top-level management structure
3. Issues that require consensus by the research community before the formal inter-government-level process starts.
4. Thoughts on legal aspects
  - Rights on intellectual and material properties / Safety regulations / Import/export Taxes / Legal status of the organization, and the members of the institute, etc etc...

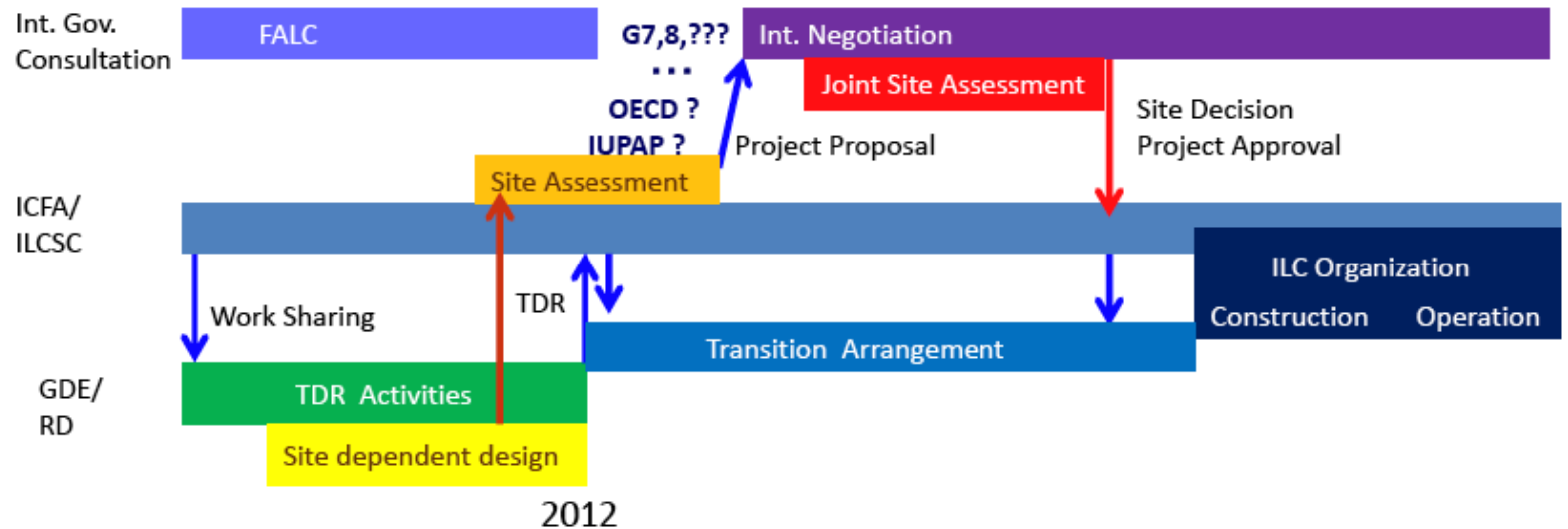


# ICFA/ILCSC activity

## ITER Timeline



## Possible ILC Timeline

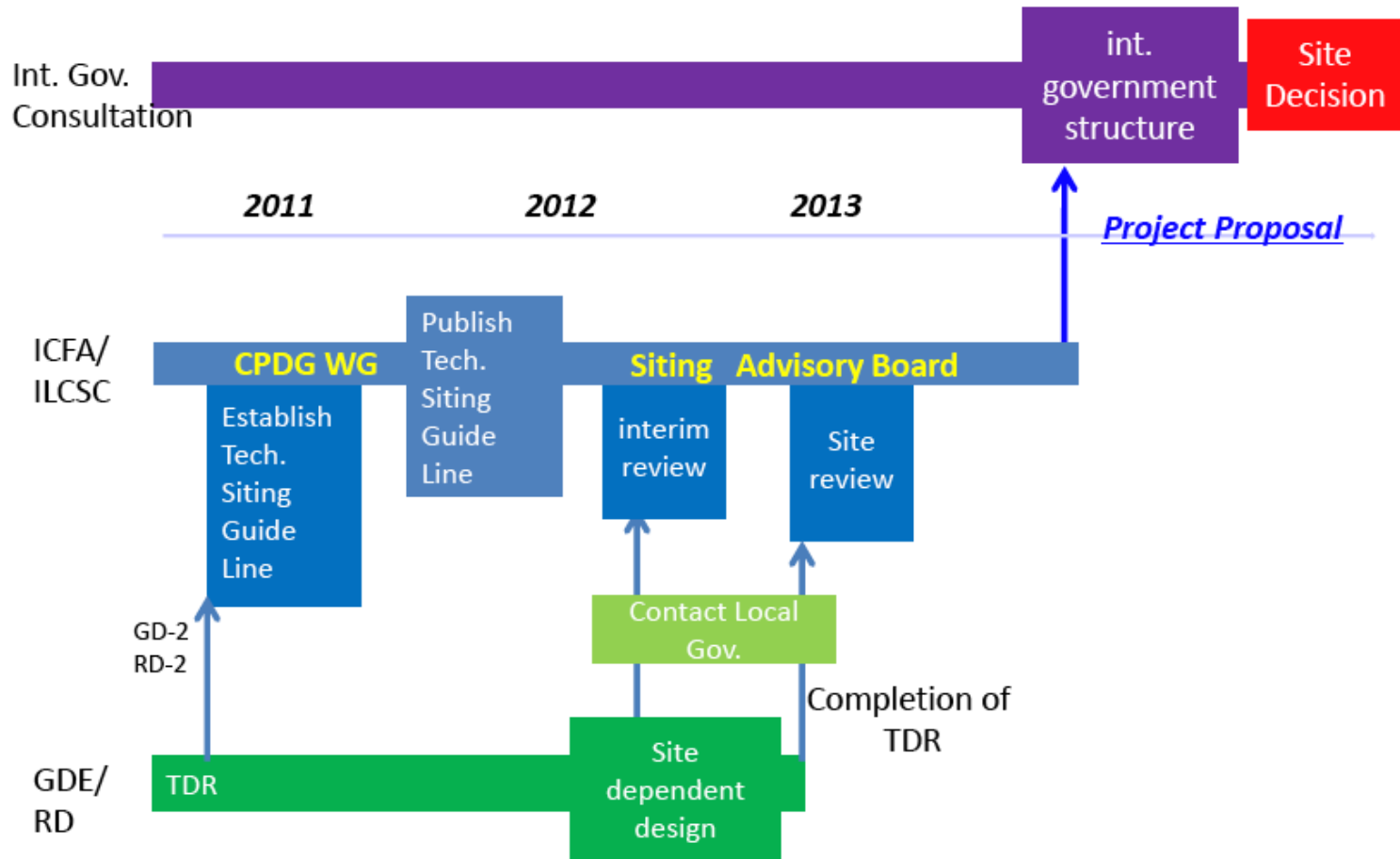


2012



# ICFA/ILCSC activity

## Site Selection Process - Timeline





# ICFA/ILCSC

---

- Lots of useful stuff here and I am managing to keep fairly close contact with A. Suzuki.
- Not yet clear what Jon Bagger, new ILCSC chair's, attitude to this is yet – he kept quite a low profile at FALC.
- A great deal of the work that AS wants GDE to do is project implementation and has yet to begin. This will be the task after the summer as we move to TDR Phase II.



# US Governance activity

- The Americas has begun to work on siting, as a parallel effort to HiGrade Governance group.
- Maury Tigner is chair; the group contains people like Jon Bagger, Jonathan Dorfan, Pier Oddone; Harvey Lynch is secretary.
- Maury & I are in regular contact – I had a teleconference with the group last month to bring them up to date with our thinking, data and current conclusions.



# Activity from Brussels

- The ERIC process is a useful one with many ideas from which we can learn.
- It cannot be lifted wholesale to our situation as it is understandably Eurocentric – e.g. EU countries have to be in a majority in the governing organs.
- We should discuss with Brussels to what extent it can be used for a “European” arm of an ILC laboratory, with the main council running under different rules.



# Activity from Brussels

- The next ECRI meeting is in Barcelona, directly before Beijing meeting.
- Eckhard & I – and others? – will attend.
- Useful forum for discussion with other projects. We keep in touch with governance activities of other FP7 PP's at regular Brussels meetings and through informal contacts.



## Activity in CERN

- The activity on extending the scientific and geographic scope of CERN, chaired by M. Spiro, is coming towards conclusions.
- It is likely to result in a new sort of associate status, somewhere between full membership and the current associate, which will allow some sort of contribution to CERN's budget in exchange for a voice in Council.
- Details need to be finalised. Likely accession of new member states concentrates minds and relates to future projects at CERN.





## Activity in CERN

- There is also an activity on governance in CLIC, chaired by John Ellis. He is also a key figure in the Spiro working group. John and I have had a couple of interactions, but rather weakly coupled.
- We should correct this – but I think his ideas are mirrored in the Spiro conclusions.
- My membership of CLIC Steering Committee is an effective way to make sure the activities are properly coordinated.



# Future Governance Activities

- Drafting of the interim Governance report – also a HiGrade milestone – will begin after Beijing with the goal to have agreement from both EC and HiGrade committees – and hopefully US – so it can be agreed by ILCSC – which will presumably have to be by email or teleconference – in time for it to be presented to the FALC meeting after CERN Council in June.



# Future Governance Activities

- We need to start thinking about what needs to be done in Governance in TDP-II. I think A. Suzuki's master template is a pretty good basis and it will be a LOT of work – it is really the outline of a quite detailed Implementation Plan and will need lots of discussion with the PMs.



# Summary

- We continue to coordinate European ILC activity in the GDE.
- Excellent progress since our last HiGrade Annual Meeting.
- On course to meet our first major milestone, and all milestones on the way currently met.
- Future work in TDP II needs to be planned.
- Busy time ahead!