

# Update of the Detector Program for ILC

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- Organization
- IDAG
- Renewed Timeline
  - LOI due date
  - How to handle LOIs
- Next steps

# Organization

- *Management structure was made.*

Directorate: RD + 3 regional contacts



Next slide

The first Reg.Contacts: 3 WWS-OC co-chairs

J.Brau (Americas), H.Yamamoto (Asia), F. Richard(Europe).

The nomination was endorsed by each region.

- *The other board or common-task groups will be formed next, after identifying LOI groups.*

Common task groups: Reorganized from WWS panels,

Details will be fixed through discussions with the LOI groups and/or GDE.



# International Detector Advisory Group

IDAG members were named last December and were approved by ILCSC.

- **Members**

## Experiment & Detector

Michael Danilov	ITEP
<u>Michel Davier</u> (Chair)	Orsay
Paul Grannis	Stony Brook
Dan Green	FNAL
Dean Karlen	Victoria
Sun-Kee Kim	SNU
Tomio Kobayashi	Tokyo
Weiguo Li	IHEP
Richard Nickerson	Oxford

## Phenomenology

Abdelhak Djouadi	Orsay
Rohini Godbole	IIS
(	)

## Accelerator

Tom Himel	SLAC
Nobukazu Toge	KEK
Eckhard Elsen	DESY

( )

Half of the experimentalist  
are from non-ILC community

# New Timeline

- After the budget cut in UK and US, GDE worked out a new stretched timeline.  
The detector community appreciates GDE's determination to go forward.
- We also wish to keep going forward in synchronization with GDE's new timeline.
- We think it extremely important to maintain the interest and enthusiasm of the community.

How ?

## Where are we now ?

- We were about to add to the ongoing R&D phase another technical design phase, where various integrations are to be studied thoroughly.

*Components & software → optimized system*

*In Particular Machine Detector Interface to integrate detectors and the machine, which is one of the critical items of the GDE's list.*

- For the desired progress, ILCSC started the LOI procedure, which was timely and began to function effectively to stimulate and organize detector groups.

*In order to keep the present momentum, we wanted to continue the LOI procedure.*

**This was approved by ILCSC on Feb 11.**

## Necessary Modifications also approved

a) The aims of the studies matched with that of GDE.

*Engineering design → Technical design*

b) The pace and the purpose of the LOI procedure need to be readjusted

*to meet the slowed down progress of LOI groups and to keep synchronized with the timeline of GDE.*

More preparation time for LOI was preferred.

- ILCSC agreed to postpone its due date *by 6 months.*  
time to recover and not to lose momentum

# Validation of LOIs, instead of Selection

In order to make clearer that the aim of LOI process is for studying technical design,  
we wish **that selection of two is NOT made**  
**but LOIs are validated by IDAG.**

 *More Cooperation than competition  
among the LOI groups*

In case there are too many so that detailed studies of MDI becomes difficult, some reduction may be required based on their level of performances for physics and/or group's capability to conduct the study.



# Proposed Detector Plan

- Letters of Intent

*-- due date end March, 2009*

Leads to validation of performance by IDAG

Machine-Detector Interface efforts intensified

- IDAG reviews LOIs, with aim to validate

- **Detector Design in 2 phases**

Till 2010, Detector Design phase I ---- GDE's TDP-I

Till 2012, Detector Design Phase II ---- GDE's TDP-II

## Detector design phase I -- to 2010

- Focus R&D on prioritized area and critical elements
  - Complete validated detector specification and initiate technical design work
  - Update of physics performance
  - Detailed studies of machine-detector interfacing
- Phase I of MDI design

GDE-TDP- I

- Prioritized R&D for risk reduction and for final focus
- MDI

ILCSC suggests to make a more concrete list. Consult IDAG. Interim Report ?

# Issues to study

- Brush up component R&Ds  
e.g. Si detectors which are developing fast
- MDI issues  
Final focus, shielding  
Infrastructure: cooling, crane, installation of big items
- Push-Pull mechanism and alignment  
Position reproducibility  
How can we alignment the detector position after moving ?  
And how quickly and accurately?
- Details of various causes of performance deterioration  
dead material(cables, support),  
overlapping or connection of different elements,  
effect of malfunctioning elements

## Detector Design Phase II -- till 2012

GDE-TDP- II

React to LHC results

Final confirmation of physics performance

Complete necessary R&D

Complete technical design for ILC proposal

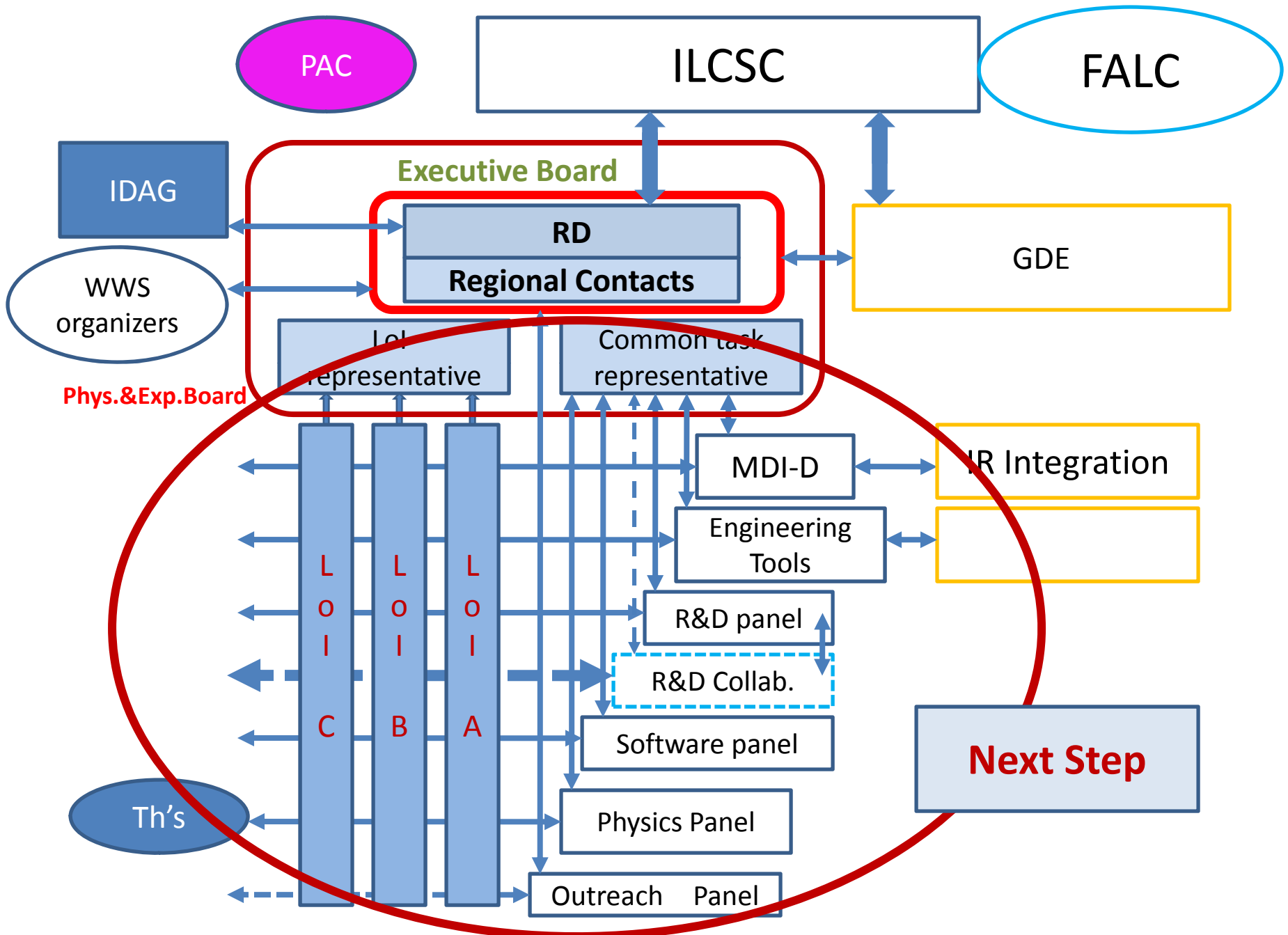
Complete MDI technical design

Complete reliable cost role up

Prepare for financial plan

- Complete technical design and R&D needed for project proposal
- Documented design
- Complete reliable cost role up
- Project plan developed

Jan.09,2008



# Next step

- **Call for Expression of Interest**

in order to identify who will prepare LOI  
and to organize common task groups

*One important task among the common tasks is to work on MDI.*

**EOI Due date: March 31, 2008**

## Needs to state:

1. Representative(s) or contact person(s) to attend P.& E. Board ( **up to 2 names**).
2. Participating institutions (individual names of members not needed)
3. Which common task(s) to participate (**MDI + ...**)
4. Willingness to work on the agreed benchmarks (**prepared by WWS-OC software panel**)

# Common Tasks

- All LOI groups work together on important issues
- The number and details of tasks may vary in time through discussions with the community
- Actions have been taken by **WWS** or in the **ILC community** for many topics and for many years.
  - reorganized or collaborate

# Common task groups

**MDI group:** So far studied by WWS-MDI group

It communicates with the accelerator team (GDE's BDS) on  
final focus, radiation shield, beam dump,  
Push-pull mechanism, infrastructure

**Engineering tools:** To set up common tools for designing between Acc. & Det.

**Detector R&D Panel:** Seek possibility to cooperate in Det. R&D.

**Detector Collaborations** will be loosely linked to this organization  
through the R&D Panel. **Detector Collaborations** keep independence.

**Software panel:** Common works on Software

benchmarks of detector performance, event simulation, DAQ,  
Reconstruction, data reduction, data storage, data distribution

**Physics:** Prepare for physics related issues

physics benchmark, study energy choice,  
Interaction with other colliders/observations



# Conclusions

- Detector community wishes
  1. to go forward with a new plan stretched till 2012 and synchronized with GDE
  2. to keep the momentum of the community with the LOI process.
- Due date is shifted by 6 months, to be end March 2009
- Instead of selection of 2 LOIs, validation of LOIs will be made.
- **Call for EOI is made. Due date end March, 2008.**

Back ups slides

# Generic R&D vs Integration

- Generic R&D is important and must be continued.
- Integration study is required, too,  
for MDI studies &  
for the examination of realistic performance.

There will be feed backs to generic R&D,  
on e.g. requirement on stability, robustness,  
heat dissipation, temperature dependence,  
effect of the magnetic field etc, etc.

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