

June 3<sup>rd</sup> 2021  
Claude Vallée (CPPM)

# **IDT-WG3 NEWS**

## **General and technical matters**

**WG3 Steering Group**  
**MDI and D&T activities**  
**Speakers Bureau**  
**ILCX Workshop**

# IDT-WG3: PHYSICS&DETECTORS

Chair: Hitoshi Murayama (Berkeley/Tokyo)

Deputies: Jenny List (DESY) and Claude Vallée (Marseille)

## Coordinator and Deputy coordinator(s)

Kiyotomo Kawagoe (Kyushu), Alain Bellerive (Carleton),  
Ivanka Božović Jelisavčić (Belgrade)

### Steering Group

Subgroup conveners, Coordinator and Deputy Coordinator(s)

Speaker's bureau

Andy White (UT Arlington), Ties Behnke (DESY), Yuanning Gao (Peking), Frank Simon (MPP), Jim Brau (Oregon), Keisuke Fujii (KEK), Phil Burrows (Oxford), Francesco Forti (INFN),  
Filip Zarnecki (Warsaw), Patty McBride (Fermilab), Mihoko Nojiri (KEK), CERN member, Timothy Nelson (SLAC), Kajari Mazumdar (Mumbai), Phillip Urquijo (Melbourne), Dmitri Denisov (Brookhaven)

#### Interface with machine

Coordinate the interactions between the accelerator and facility infrastructure planning and the needs of the experiments

Karsten Buesser (DESY), Yasuhiro Sugimoto (KEK),  
Roman Poeschl (Orsay), US

#### Detector and technology R&D

Provide a forum for discussion and coordination of the detector and technology R&D for the future experimental programme

Marcel Vos (Valencia), Katja Krueger (DESY)  
Petra Merkel (Fermilab), David Miller (Chicago)

#### Software and computing

Promote and provide coordination of the software development and computing planning

Frank Gaede (DESY), Jan Strube (PNNL)  
Daniel Jeans (KEK)

#### Physics potential and opportunity

Encourage and develop ideas for exploiting the physics potential of the ILC collider and by use of the beams available for more specialised experiments

Michael Peskin (SLAC), Junping Tian (Tokyo)  
Aidan Robson (Glasgow)

# IDT-WG3: PHYSICS&DETECTORS

Chair: Hitoshi Murayama (Berkeley/Tokyo)

Deputies: Jenny List (DESY) and Claude Vallée (Marseille)

## Coordinator and Deputy coordinator(s)

Kiyotomo Kawagoe (Kyushu), Alain Bellerive (Carleton),  
Ivanka Božović Jelisavčić (Belgrade)

### Steering Group

Subgroup conveners, Coordinator and Deputy Coordinator(s)

Speaker's bureau

Andy White (UT Arlington), Ties Behnke (DESY), Yuanning Gao (Peking), Frank Simon (MPP), Jim Brau (Oregon), Keisuke Fujii (KEK), Phil Burrows (Oxford), Francesco Forti (INFN),  
Filip Zarnecki (Warsaw), Patty McBride (Fermilab), Mihoko Nojiri (KEK), CERN member, Timothy Nelson (SLAC), Kajari Mazumdar (Mumbai), Phillip Urquijo (Melbourne), Dmitri Denisov (Brookhaven)

#### Interface with machine

Coordinate the interactions between the accelerator and facility infrastructure planning and the needs of the experiments

Karsten Buesser (DESY), Yasuhiro Sugimoto (KEK),  
Roman Poeschl (Orsay), US

#### Detector and technology R&D

Provide a forum for discussion and coordination of the detector and technology R&D for the future experimental programme

Marcel Vos (Valencia), Katja Krueger (DESY)  
Petra Merkel (Fermilab), David Miller (Chicago)

#### Software and computing

Promote and provide coordination of the software development and computing planning

Frank Gaede (DESY), Jan Strube (PNNL)  
Daniel Jeans (KEK)

#### Physics potential and opportunity

Encourage and develop ideas for exploiting the physics potential of the ILC collider and by use of the beams available for more specialised experiments

Michael Peskin (SLAC), Junping Tian (Tokyo)  
Aidan Robson (Glasgow)

# IDT-WG3: PHYSICS&DETECTORS

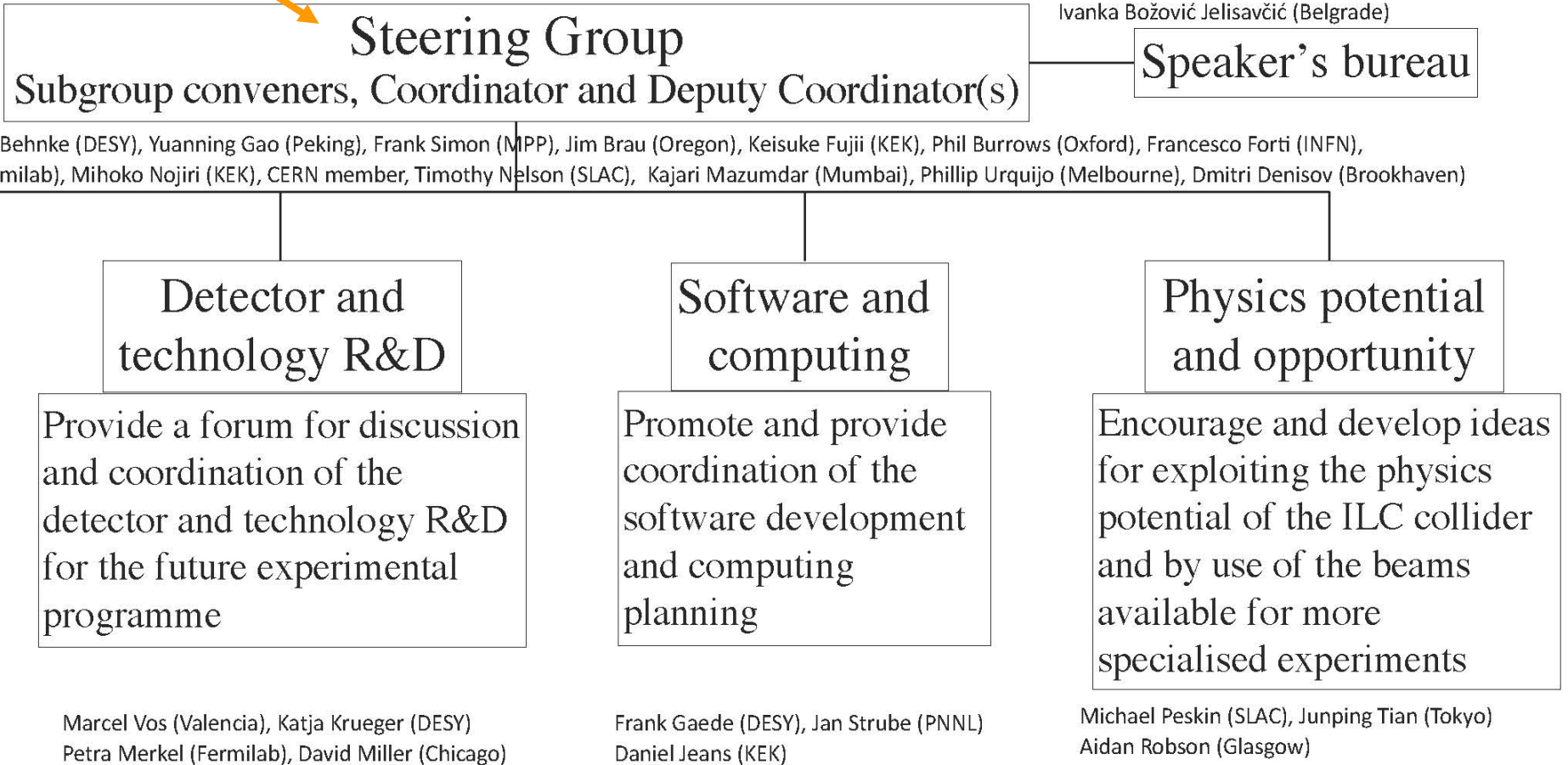
Ongoing contacts with Brazilian groups

Addition of Latin American representative(s)  
in discussion

ama (Berkeley/Tokyo)  
and Claude Vallée (Marseille)

puty coordinator(s)

Kiyotomo Kawagoe (Kyushu), Alain Bellerive (Carleton),  
Ivanka Božović Jelisavčić (Belgrade)



# IDT-WG3: MDI ACTIVITIES

## MDI-CFS Taskforce: Detector Hall and Campus:

- WG2: H. Hayano (CFS), N. Terunuma (CFS), T. Sanuki (Site)
- WG3-MDI: K. Buesser (MDI convener and ILD), Y. Sugimoto (MDI convener and ILD), T. Tauchi (BDS and seismic issues), Y. Makida (detector SC magnet), T. Markiewicz (SiD), M. Stanitzki (SiD), P. Burrows (CLICdp), T. Schoerner-Sadenius, K. Sinram.

**Common taskforce revived with representatives of local site / accelerator / LC detector concept groups**

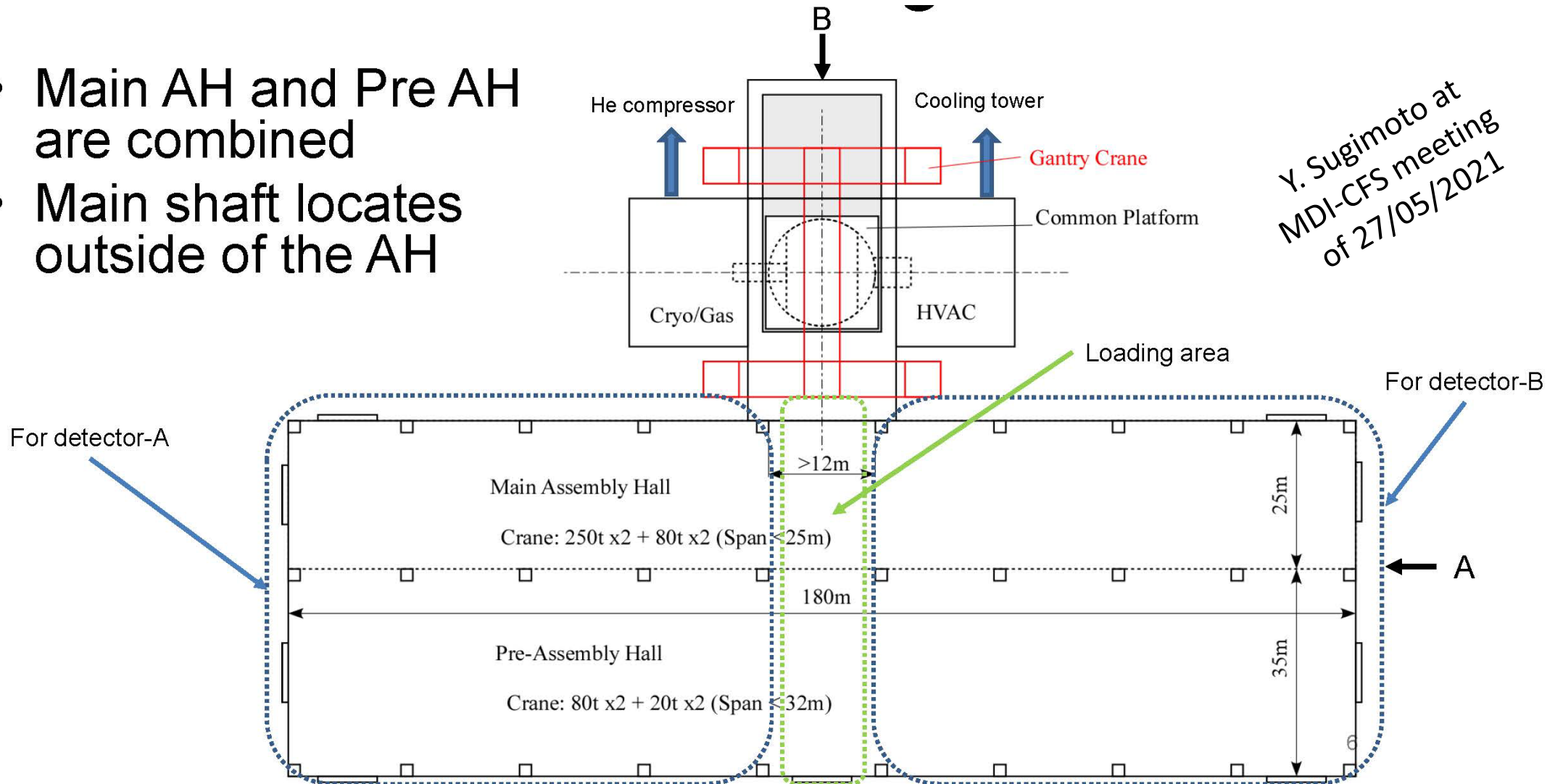
**Main current focus on an updated design of the Surface facilities and Detector Hall**

**Ongoing work based on local site constraints & opportunities, detector needs and experience from LHC@CERN**

## A recent highlight: redesign of surface Assembly Halls

Main motivation is to remove specificities to existing detector concepts to allow final CFS design ahead of detector options approval

- Main AH and Pre AH are combined
- Main shaft locates outside of the AH



## **IDT-WG3: MDI ACTIVITIES cont'd**

### **Taskforce on impact of Beam Delivery System on detectors design and specific physics reach**

Expected contributors: WG3-MDI/D&T/Soft/Phys + WG2 + detector concepts

***Task force(s) to be set up under the lead of the WG3-MDI subgroup  
(R. Poeschl specifically in charge)***

### **A few current trends:**

**Larger L\* option as revived at LCWS2021 not in Prelab accelerator priorities**  
**Some focus on delivered beam parameter measurements for machine and experiments:**  
***polarization, luminosity, beam energy and real time monitoring***

# IDT-WG3: DETECTOR&TECHNOLOGY ACTIVITIES

## Taskforce on detector performance studies

Coordination of performance studies including emerging technologies and alternative detector solutions

Expected contributors: WG3-D&T/Soft/Phys + concepts + R&D community

*Taskforce to be set up under the lead of the WG3-D&T subgroup*

## Current trends:

- Survey of openings of PHD and Postdoc positions for detector performance evaluation
- Survey of available software tools for detector and technology performance evaluations
- Definition of an agreed set of rules for performance quantification of detector options

*Organisation of a kick-off open mini-workshop on detector technologies similar to that reported by Aidan for physics*



## ILCX 2021: Let's discuss about possible experimental opportunities at the ILC



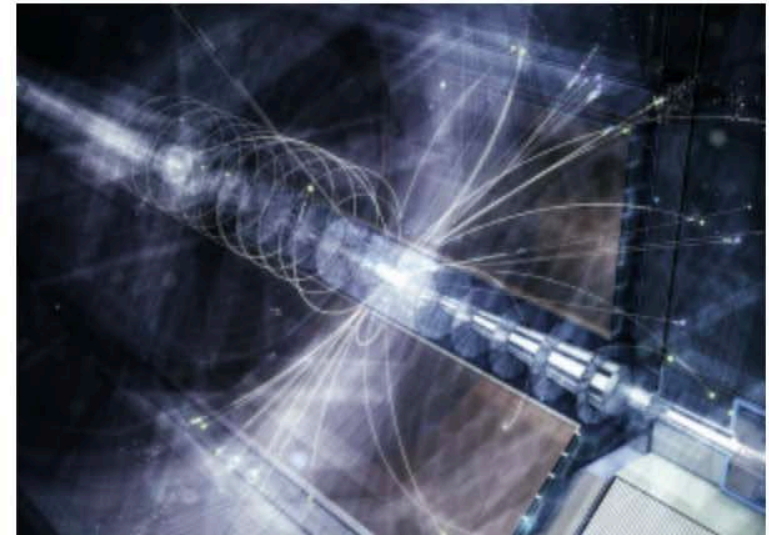
Hitoshi Murayama | 1 June 2021

The ILC International Development Team (IDT) will hold the ILC Workshop on Potential ILC Experiments (ILCX), from 26 – 29 October, 2021.

With the growing anticipation that the preparatory laboratory (Pre-lab) will be launched in the near future, we would like to initiate serious discussions about all the possible experimental opportunities at the ILC laboratory. The workshop will address all the aspects of the collider program at the Interaction Point (IP), including ideas for new detector technologies or concepts, detector performance and physics reach, software and computing, and theoretical developments. In addition, possible beam dump experiments, forward detectors near the IP, off-axis far detectors, experiments with extracted beams for particle physics and other areas of science, including e.g. nuclear physics, condensed matter physics. Some of these ideas will require additional infrastructure and civil engineering, and therefore need to be incorporated into the ILC site planning during the four years of the Pre-lab, hence discussions is needed rather soon.

The workshop organizing committee is the Executive Board of IDT, and the program committee is the Steering Group of Working Group 3 (Physics and Detector). Given the uncertainties with the COVID-19 situation, three possible styles are being prepared in parallel: (1) in-person meeting in Tsukuba, Japan, (2) hybrid meeting on the KEK site, and (3) fully online meeting. Decision between (1) vs (2,3) will come by the end of June. In the case of in-person meeting, a visit to ILC-related sites at KEK is being arranged on Oct 25, while an excursion to the candidate ILC site in Tohoku is being planned after the workshop.

The ILCX2021 website has opened. Since how we organize the meeting has not yet decided, registration is not open. Please stay tuned for more information!



ILC collision image. Image: Rey. Hori

# ILCX: Timeline & Milestone

Timeline	Milestone
mid-May	Website open
mid-May	1st announcement ← We are here
early June	Program coordination & session convener nomination
late June	Decision of Plan-A/B or Plan-C
late June	1st circular & registration open
mid-Sep.	Decision of Plan-A or Plan-B
26 October	Day 1 of WS

# IDT-WG3 SPEAKERS BUREAU

*Already very active!*

## Upcoming conferences

- LHCP 2021, June 7-12
  - A poster accepted, to be presented by Bohdan Dudar (Uni Hamburg)
- EPS-HEP 2021, July 26-39
  - Six abstracts submitted by the deadline, May 7
- SPIN 2021, 18-22, October
  - Three abstract submitted by the deadline, May 1
- PANIC 2021, September 5-10
  - Submission deadline: June 20 (an abstract per person)
  - Three abstracts to be submitted
- Higgs Hunting 2021, September 20-22
  - This year, no room for any session on future accelerators

**Discussions ongoing to improve coordination with the overall community  
(Concepts, R&D, other Higgs Factories, etc...)**