

# MDI Status Report

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Karsten Buesser

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ADI Fuze Meeting



# Hybrid Access Optional Study

Baseline	Hybrid-A	Hybrid-Op (by AWLS2014)
<ul style="list-style-type: none"> <li>• 1 HT (11x11m grad 7%)</li> <li>• Detector assembling is inside of DH</li> </ul>	<ul style="list-style-type: none"> <li>• 1 HT (8.0x7.5m grad 7%)</li> <li>• 2 VS (D18m, D10m)</li> <li>• ILD assembly:on-g, SiD assembly:un-g.</li> </ul>	<ul style="list-style-type: none"> <li>• 1 HT (8.0x7.5m <u>grad 10%</u>)</li> <li>• 3 VS (D18m, D10m, D7.5m)</li> <li>• ILD assembly:on-g, SiD assembly:un-g..</li> </ul>
<ul style="list-style-type: none"> <li>• UT lines in DR/AT</li> </ul>	<ul style="list-style-type: none"> <li>• UT lines in UT shaft (N/A Main shaft)</li> </ul>	<ul style="list-style-type: none"> <li>• Ditto</li> </ul>
<ul style="list-style-type: none"> <li>• DH Excavated vol. 175,000m<sup>3</sup></li> <li>• L144m H42m W25m</li> </ul>	<ul style="list-style-type: none"> <li>• DH Excavated vol. <b>156,000m<sup>3</sup></b></li> <li>• L126m H42m W25m</li> </ul>	<ul style="list-style-type: none"> <li>• Ditto</li> </ul>
<ul style="list-style-type: none"> <li>• Detector parts are transported by Heavy weight transporter</li> </ul>	<ul style="list-style-type: none"> <li>• ILD is installed by Heavy lowering crane</li> <li>• SiD parts transported by HWT</li> </ul>	<ul style="list-style-type: none"> <li>• ILD is installed by Heavy lowering crane</li> <li>• SiD parts transported by crane</li> </ul>
<ul style="list-style-type: none"> <li>• Location of DH and assembly yd. can be selected individually.</li> </ul>	<ul style="list-style-type: none"> <li>• Assembly hall is above D/H</li> </ul>	<ul style="list-style-type: none"> <li>• Ditto</li> </ul>
<ul style="list-style-type: none"> <li>• Human pass way : tunnel by vehicles</li> <li>• Machine and materials: tunnel by vehicles</li> </ul>	<ul style="list-style-type: none"> <li>• Human pass way :elevator in UT shaft</li> <li>• Machine and materials : Shaft and tunnel</li> </ul>	<ul style="list-style-type: none"> <li>• Ditto</li> </ul>
<ul style="list-style-type: none"> <li>• Environmental impact : smaller during construction.</li> </ul>	<ul style="list-style-type: none"> <li>• Need countermeasure for noise reduction of construction</li> </ul>	<ul style="list-style-type: none"> <li>• Ditto</li> </ul>
<ul style="list-style-type: none"> <li>• Emergency evacuation ways Main AT and DR AT.</li> </ul>	<ul style="list-style-type: none"> <li>• Emergency evacuation ways Main AT , DR AT , and shaft stair.</li> </ul>	<ul style="list-style-type: none"> <li>• Ditto</li> </ul>

# Status of Discussion

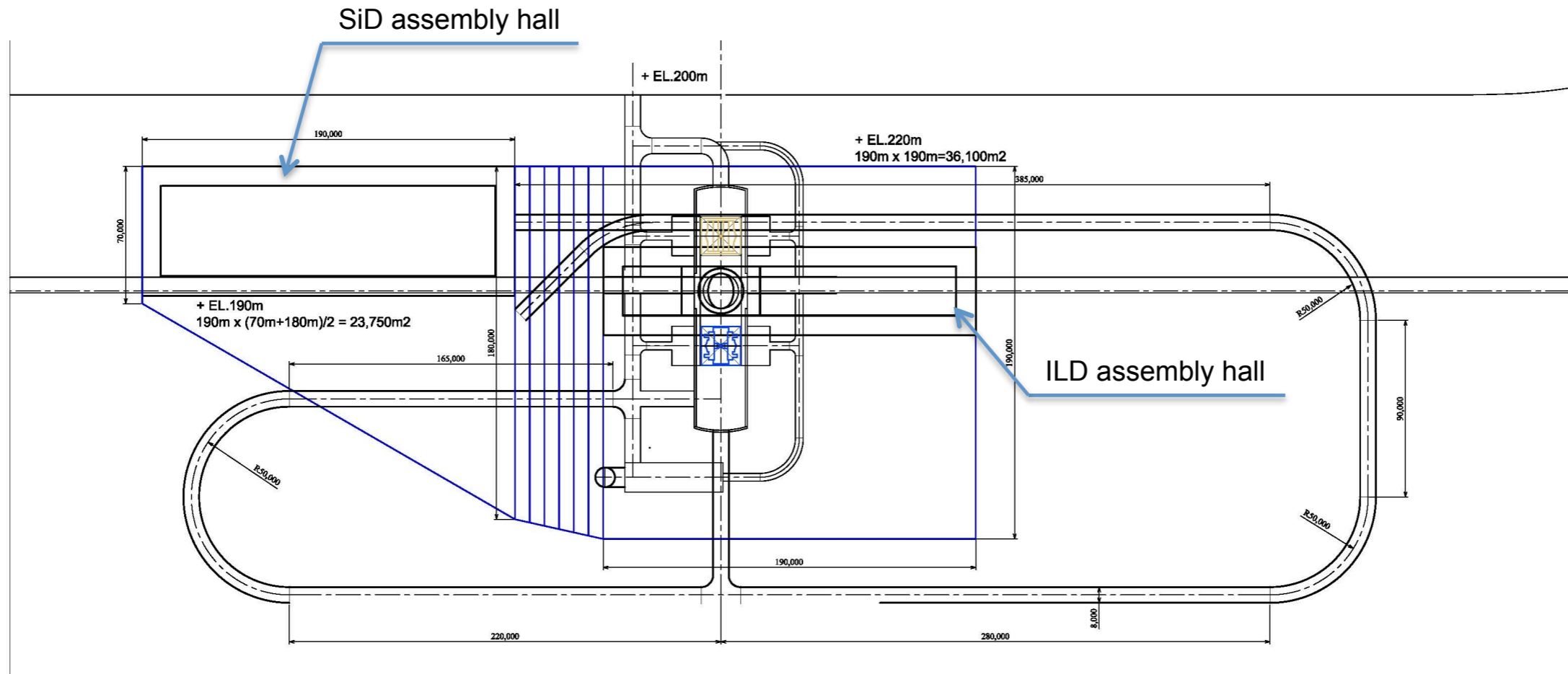
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- The baseline is now under configuration control
  - We believe that there are no fundamental issues with the baseline scenario:
    - geology is good
    - detectors have thought about assembly and maintenance scenarios but maybe not in sufficient details
    - timelines have been studied but not understood in all consequences
- There are good reasons to look deeper into one hybrid scenario that
  - is optimised for the Kitakami site and takes local boundary conditions (e.g. transportation limits) into account
  - offers advantages for the assembly and maintenance of the detectors
  - has the potential for significant cost savings and/or reduces the involved risks for timing and costs
- The MDI and the CFS group are working together on this, all relevant parties are included

# Hybrid-A Example

## Function

- Main shaft : for ILD installation, and SiD heavy parts lowering.
- Access tunnel : for SiD parts transportation, and cavern construction.



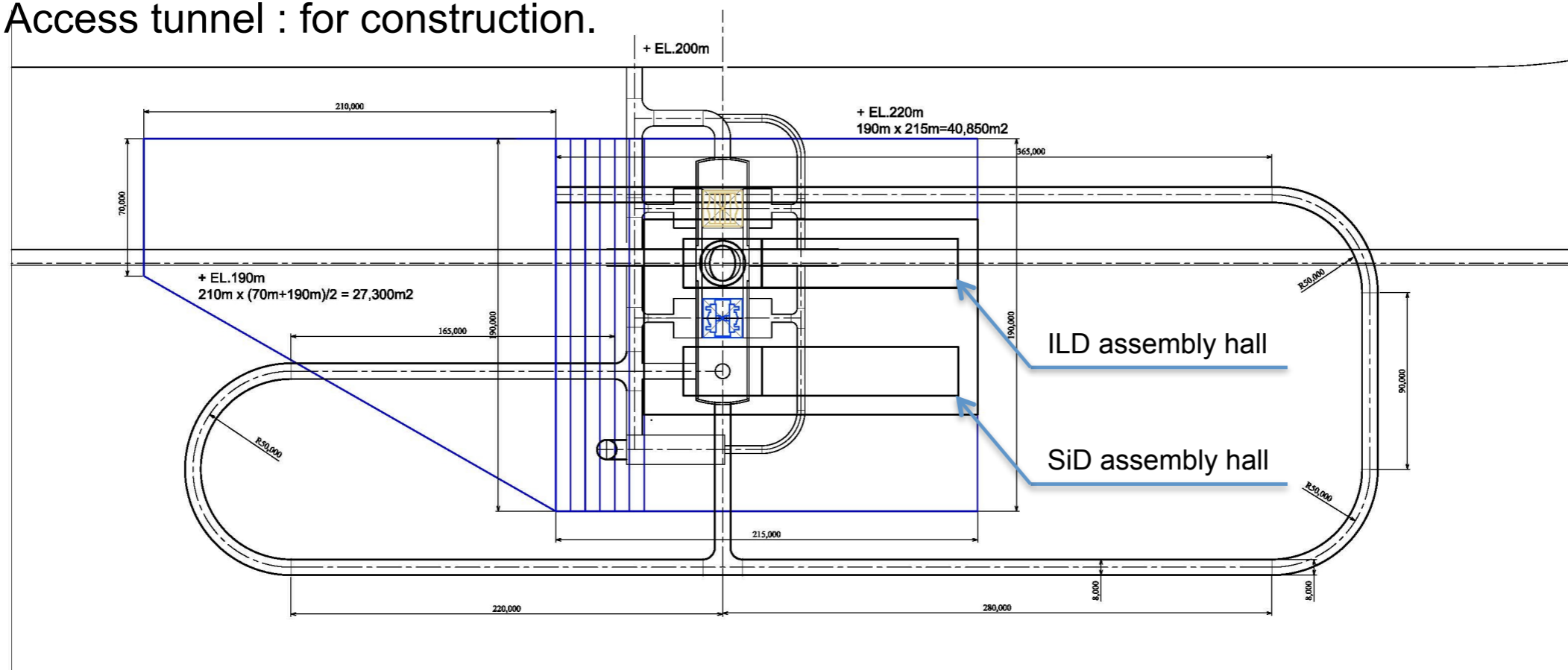
## Hybrid-Option Example (by AWLS2014)

### Assumption

- SiD shaft is located at the intersection point of DH and AT  
if located at SiD park position, assembly halls are too close each other.
- Inner diameter is assumed 7.5m

### Function

- Main shaft : for ILD installation and SiD heavy parts lowering.
- SiD shaft : for SiD parts transportation.
- Access tunnel : for construction.



# Outlook

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- We will work on one hybrid solution only
  - either Hybrid-A or AWLC14 or something else
- We want to define the basic outline of this solution within the next month:
  - total floor space in underground hall
  - number, size and location of shafts
  - one tunnel or no tunnel
  - footprint and orientation of surface buildings
- We will then do detailed work on this hybrid solution together with CFS:
  - assembly and maintenance scenarios (incl. transportation)
  - timelines for excavation, construction and detector assemblies
  - cost estimates
- We want to come to a final conclusion at the joint MDI/CFS workshop in September in Sendai/Ichinoseki
- A formal change control request depends on the outcome of the comparison of the hybrid solution with the baseline

MDI-CFS Meeting on ILC Interaction Region Issues (04-September 6, 2014)

agenda.linearcollider.org/conferenceDisplay.py?confId=6404

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## MDI-CFS Meeting on ILC Interaction Region Issues

4-6 September 2014  
Tohoku University  
Japan timezone

Search

- Overview
- Timetable
- Registration
  - Registration Form
- Venue and Accommodation

Support

✉ karsten.buesser@desy.de

This joint meeting of the Machine-Detector Interface and Conventional Facilities and Siting group concentrates on the adaptation of the ILC interaction region design to the Kitakami site as well as other MDI or CFS related topics. Among the discussion topics of this meetings are:

- Interaction Region Access
- Surface Buildings
- Underground Areas
- Timelines
- Services
- Beam Commissioning Strategies
- QDO-Magnets: Crossing Angle and L\*
- AOB

A site visit to Kitakami is foreseen for September 4th, followed by two full days for discussions on September 5-6.

A workshop of the ILD collaboration takes place at Tohoku University after this meeting:  
<http://agenda.linearcollider.org/conferenceDisplay.py?confId=6360>

Starts Sep 4, 2014 08:00  
Ends Sep 6, 2014 18:00  
Japan

Tohoku University  
Sendai

Dr. Buesser, Karsten  
Mr. Kuchler, Victor

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Menü anzeigen

- September 4-6 in Sendai or Ichinoseki (ILD workshop September 7-9)
- Site visit to Kitakami on September 4
- <http://agenda.linearcollider.org/conferenceDisplay.py?confId=6404>