

***Summary of
the 1st IDT WG2
DR/BDS/DUMP subgroup meeting***

*2020/10/06
IDT WG2 meeting
Toshiyuki OKUGI, KEK*

The 1st meeting of the IDT WG2 DR/BDS/DUMP subgroup was held on 2020/10/02.

- *We discussed the technical preparations for DR/BDS, and we had no time to discussed about those for DUMP.*
 - ✓ *The discussion materials are posted to <https://agenda.linearcollider.org/event/8667/> (password : ilc250)*
 - ✓ ***Technical preparations in the ILC main preparatory phase***
 - ***Technical items, which was pointed out by MEXT advisory panel and SCJ.***
 - ***Technical items, which is necessary to write ILC EDR.***
 - *Technical preparations at ILC Hub-lab (SCRF)*
- *The next subgroup meeting will be held on*
Data and time: 2020/10/13 22:00 JST
Connection : CERN Vidyo <https://vidyoportal.cern.ch/join/iA6ppK4CYW> (no password)
We will discuss
 - ✓ *The technical preparations for DUMP (N. Terunuma)*
 - ✓ *The discussion items for next-next subgroup meeting and later.*

(Membership) ***Karsten Buesser (DESY), Glen White (SLAC)***
agreed to join this DR/BDS/DUMP subgroup.

Damping Ring

✓ *Technical items, which was pointed out by MEXT advisory panel and SCJ.*

- *System design and Long-term stability test of injection/extraction systems at ATF*
- *Performance test/further development of feedback system*

(discussion)

✓ *Why do we need 14-16 bit feedback for ILC ?*

⇒ *It is written in ILC TDR to use 14-16 bit feedback for ILC, and the MEXT advisory committee pointed out it.*

✓ *In SuperKEKB, 12-bit feedback is adopted, and this evaluation is performed first.*

✓ *How about the electron cloud instability ?*

⇒ *Since the chamber design and the evaluation of the electron cloud instability was already done at TDR, MEXT did not point out it. However, we'd better to ask to SuperKEKB people from their experience whether there is really no problem for our current design.*

✓ *Technical items, which is necessary to write ILC EDR.*

- *RF cavity and source*

(Discussion)

✓ *The 1MW CW 650MHz klystron was already developed at JLab test accelerator. It seems better to cooperate them to write ILC EDR.*

- *Damping wiggler*

- *Permanent magnet*

(Discussion)

✓ *At least, it is better to study the effect to the dynamic aperture by simulation.*

- *Injection kicker for e-driven positron source*

(Discussion)

✓ *Is it DR group matter or positron group? => DR group (later discussion with Yokoya-san)*

✓ *We will start by listening to the opinions of the CERN induction kicker development group.*

Beam Delivery System

✓ *Technical items, which was pointed out by MEXT advisory panel and SCJ.*

• **Long-term stability test of IP beam size and position at ATF**

This item is to proceed with project based MoU that extends ATF international collaboration rather than an inter-Lab MoU. Some discussion for the new collaboration will be planed in BDS/ATF2 session of AWLC2020 .

(Discussion)

✓ *After the AWLC discussion, the issue will be discussed in ATF ICB (by ATF ICB chair).*

✓ *Technical items, which is necessary to write ILC EDR.*

• **Final doublet**

✓ *TDR assumes superfluid 2K Helium for FD, but the service cryostat to exchange the Helium temperature from 4K to 2K will be placed near the detector, and there is concern about the vibration of the vacuum pump inside the service cryostat.*

(Discussion)

✓ *Since B. Parker is the best person to think about this issue, we will discuss with him about the technical consideration for the 2K system.*

• **Crab cavity**

(Discussion)

✓ *Do we need the prototype test for writing the ILC EDR ?*

⇒ *If need, the candidate partners are Daresbury? FNAL? Cornell ? JLab?*

⇒ *We'd better to ask the issue to appropriate person later.*

• **Anti-solenoid**

Since the design can be done only after the design of the detector solenoid is completed, the detailed design of anti-solenoid will be considered during the construction period.

• **Anti-DID** *Basically YES, but It is better to discuss with MDI people.*

Not for accelerator part, including to detector solenoid.