

ILC Technology Network information meeting



Jenny List

23rd Future Colliders @ DESY meeting

20 October 2023

HELMHOLTZ RESEARCH FOR
GRAND CHALLENGES



CLUSTER OF EXCELLENCE
QUANTUM UNIVERSE

ILC Technology Network

Overview

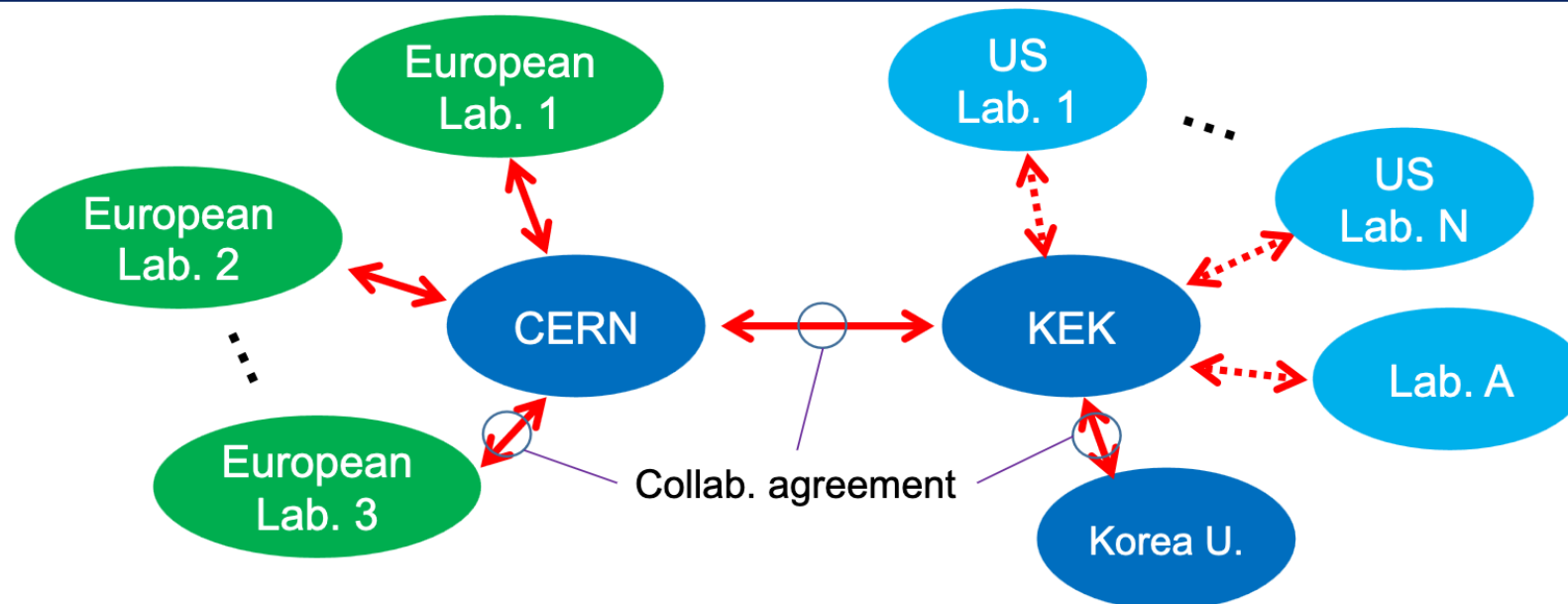
- new collaboration addressing the most time-critical work-packages of the original pre-lab program
- based on institutes of IDT WG2 members, plus some new (eg Korea U)



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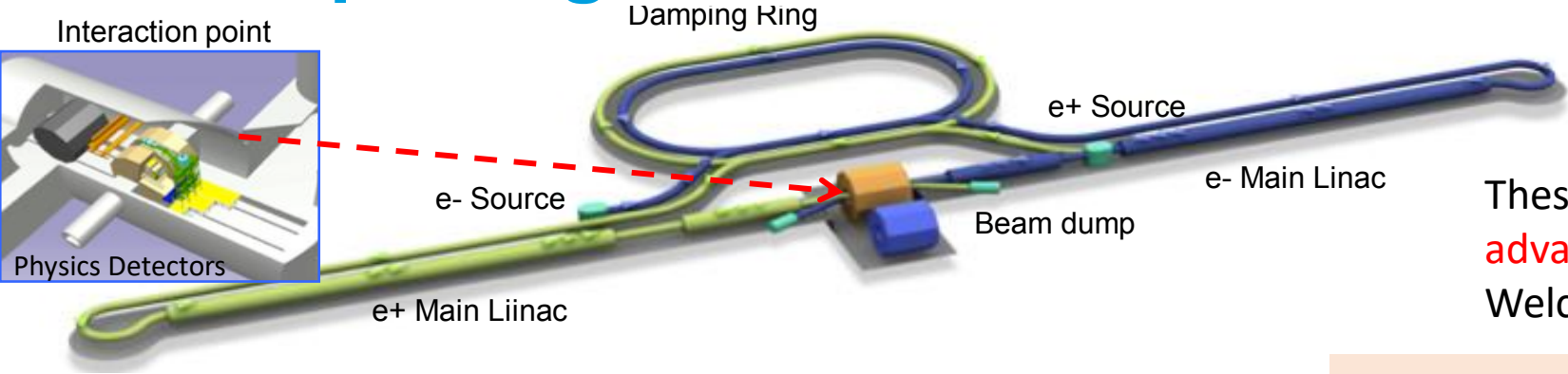
Overview

- ▣ The ITN is jointly initiated by KEK and IDT to execute high priority work packages identified by the IDT-WG2 from the ILC Pre-lab Proposal.
- ▣ ITN is an independent organization based on Arrangements between KEK and participating laboratories, and it takes full responsibility for the execution of those work packages.
- ▣ In Europe, CERN agreed to serve as an European hub of the ITN, and an agreement was signed by KEK and CERN.



ITN Workpackage Overview

international development team



These WPs can be applied to various advanced accelerators.
Welcome to join!

- Creating particles
 - polarized elections / positrons
- High quality beams
 - Low emittance beams
 - Small beam size (small beam spread)
 - Parallel beam (small momentum spread)
- Acceleration
 - superconducting radio frequency (SRF)
- Getting them collided
 - nano-meter beams
- Go to **Beam dumps**

Sources

Damping ring

Main linac

Final focus

SRF
for energy-reach

e-, e+ Sources
for ensuring e-/e+ collision

Nanobeam
for high luminosity

WPP	1	Cavity production
WPP	2	CM design
WPP	3	Crab cavity
WPP	4	E- source
WPP	6	Undulator target
WPP	7	Undulator focusing
WPP	8	E-driven target
WPP	9	E-driven focusing
WPP	10	E-driven capture
WPP	11	Target replacement
WPP	12	DR System design
WPP	14	DR Injection/extraction
WPP	15	Final focus
WPP	16	Final doublet
WPP	17	Main dump

ITN Information Meeting

Oct 16/17 at CERN

15:00	Welcome <i>31/3-004 - IT Amphitheatre, CERN</i> <i>Dr Masanori Yamauchi</i>	15:00 - 15:05
	Introduction to ITN and goal of the meeting <i>31/3-004 - IT Amphitheatre, CERN</i> <i>Shinichiro Michizono</i>	15:05 - 15:35
	Introduction to Work Area SRF <i>31/3-004 - IT Amphitheatre, CERN</i> <i>WPP_presentation.pdf</i> <i>Yasuchika Yamamoto</i>	15:35 - 15:55
16:00	Introduction to Work area Sources <i>31/3-004 - IT Amphitheatre, CERN</i> <i>Dr yoshinori enomoto</i>	16:00 - 16:20
	Coffee break <i>31/3-009 - IT Amphitheatre Coffee Area, CERN</i>	16:25 - 16:45
17:00	Introduction to Work Area Nano-beam <i>31/3-004 - IT Amphitheatre, CERN</i> <i>Angeles Faus-Golfe</i>	16:45 - 17:05
	Overall discussion on Work Areas <i>31/3-004 - IT Amphitheatre, CERN</i>	17:10 - 17:30
	Presentation by Laboratories I: Dmitri Denisov (BNL). Andrei Seryi (JLab), Steinar Stapnes (CERN), Pierluigi Campana (INFN), Philip Burrows (JAI) <i>Andrei Seryi et al.</i>	17:30 - 18:00
18:00		
19:00	Reception: aperitif followed by dinner (Glass Box @CERN Restaurant 1)	

15:00	Presentation by Laboratories II: Shin Michizono (KEK), Rohan Dowd (ANSTO), Eun-San Kim (Korean University), Heung Sik Kang (PAL), Hans Weiss (DESY), Jim Clarke (ASTeC), Jose Manuel Perez (CIEMAT), Juan Fuster (IFIC), Pierre Vedrine (IRFU), Achille Stocchi (IJCLab), Rik Yoshida (ANL), Ritchei Patterson (Cornell), Sergey Belomestnykh (FNAL), Soren Prestemon (LBNL), Mei Bai (SLAC) <i>Achille Stocchi et al.</i>	
16:00	30/7-018 - TE Auditorium, CERN	15:00 - 16:15
	Coffee break <i>30/7-018 - TE Auditorium, CERN</i>	16:15 - 16:35
17:00	Discussion toward harnessing ITN	16:35 - 17:45
	30/7-018 - TE Auditorium, CERN	16:35 - 17:45
	Conclusions and future plan <i>30/7-018 - TE Auditorium, CERN</i> <i>Tatsuya Nakada</i>	17:45 - 18:00
18:00		

- introductory talks on ITN and work areas
- presentations by > 20 labs / universities from Europe, Japan, Korea, US, Canada
- DESY represented by Hans Weise
- joint discussion

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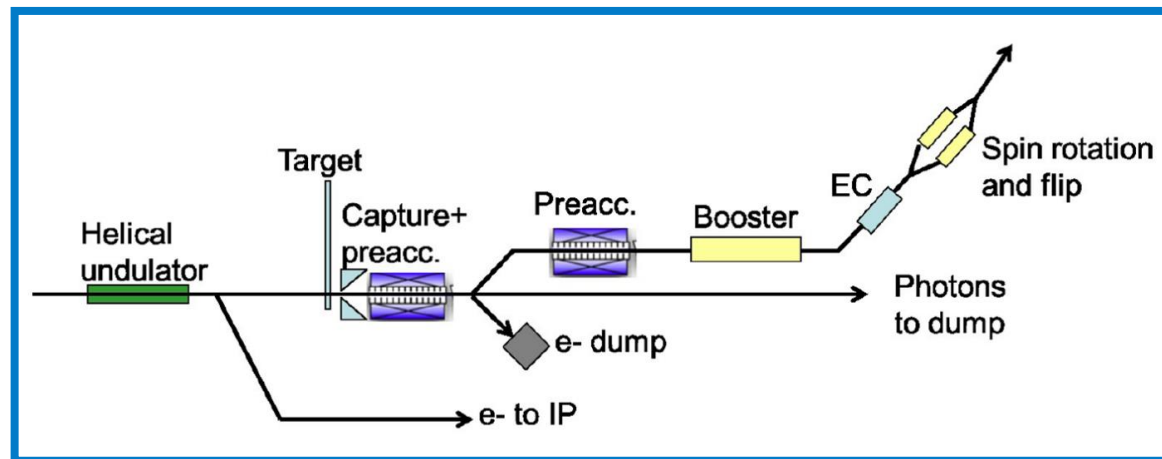
- ~25 people in-person
- incl sizable delegation from Japan
- >40 on zoom
- for those who still know her from ILD: Yumi Aioki now works for KEK PR, was there with Rika



Next Steps

boot strapping the ITN

- collected a matrix of who's interested to contribute to which work package
- will be iterated with lab representatives, who'll name contacts for each WP
- guided by IDT WG2, each WP will discuss distribution of deliverables etc
- each institute committing to deliverables will be member of the ITN, regardless if direct agreement with KEK or via a regional hub lab
- one of the first activities in place: design and prototype construction of pulsed solenoid as capture device for the positron source (Gudi, UHH/DESY)



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