

The 27th KEKB Accelerator Review Committee
January 14, 2025

Welcome and Status of Accelerator Laboratory

Tadashi Koseki

Accelerator Laboratory, KEK

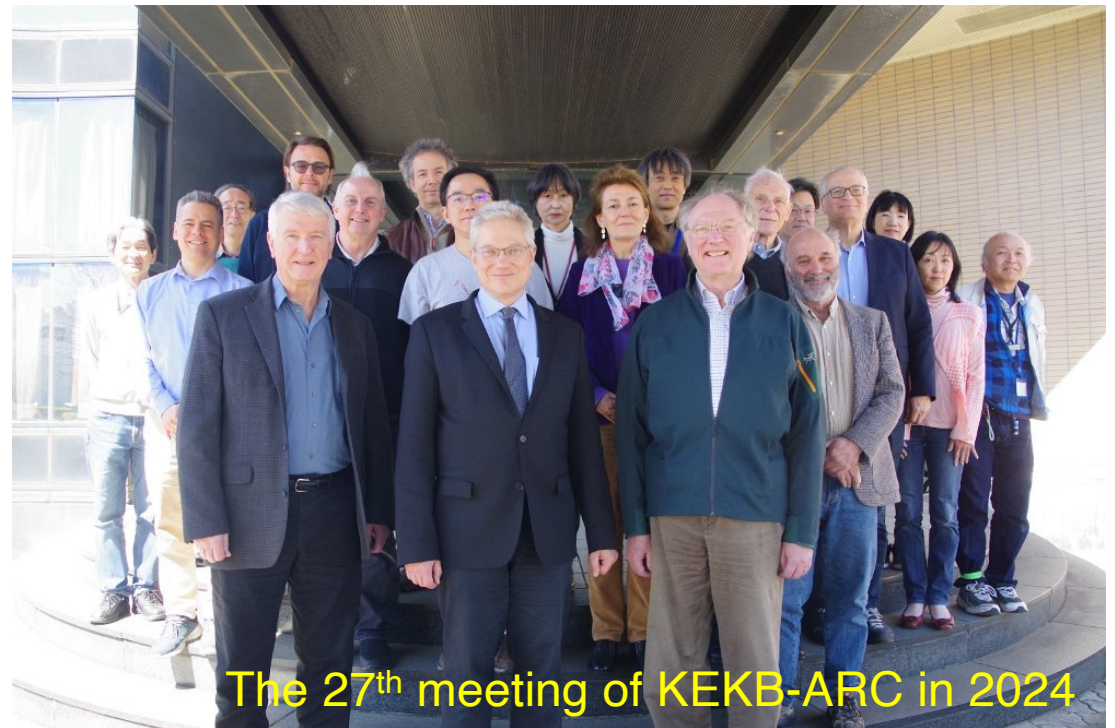
The 28th meeting of the KEKB Accelerator Review Committee

Date: January 14 – 16, 2025

Charge:

(1) Review and provide advices on beam operation, overall performance of the SuperKEKB accelerator including the linac.

(2) Provide advices on the plans for near future and LS2.

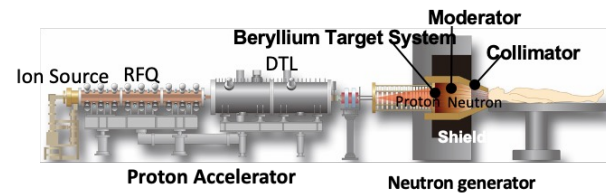
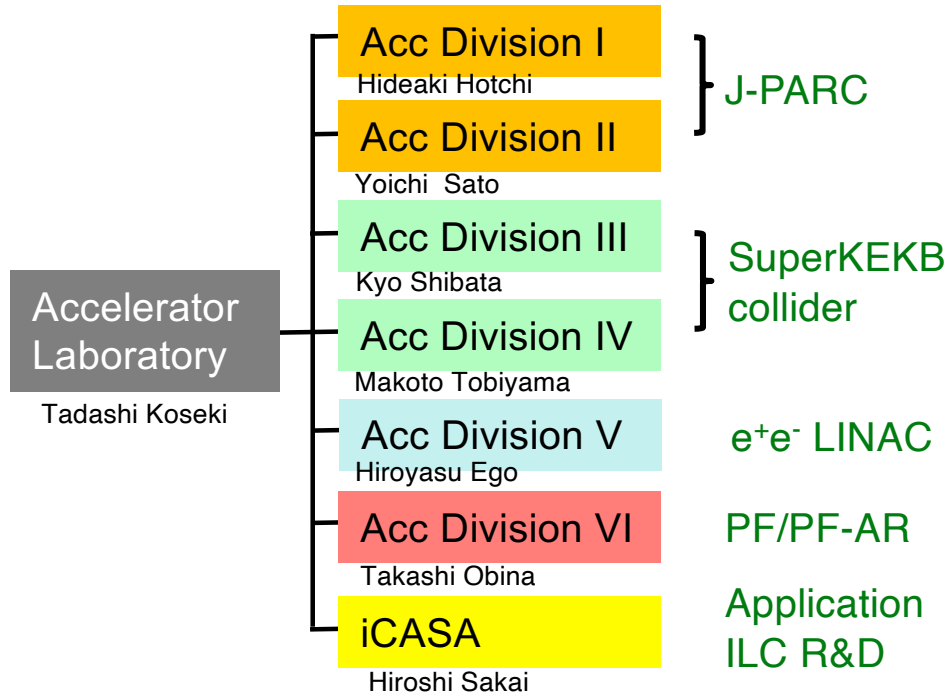


The KEKB Accelerator Review Committee

The term is three years, JFY2022-2024.

Frank Zimmermann, Chair	CERN	
Ralph Assmann	GSI	
Vincent Baglin	CERN	
Paolo Craievich	PSI	
John Fox	Stanford Univ.	
Andrew Hutton	JLAB	Non-attendance
Heung-Sik Kang	POSTEC	
Catia Milardi	INFN	
Evgeny Perevedentsev	BINP	Remote
Qing Qin	ESRF	
Robert Rimmer	JLAB	
John Seeman	SLAC	
Michael Sullivan	SLAC	
Thomas Taylor	CERN (ret.)	
Rogelio Tomas	CERN	Remote
Yuan Zhang	IHEP	
Tadashi Koseki	KEK, Director of ACCL, Ex Officio member	
Kyo Shibata	KEK, Head of Acc. Division III, Ex Officio member	
Makoto Tobiya	KEK, Head of Acc. Division IV, Ex Officio member	
Hiroyasu Ego	KEK, Head of Acc. Division V, Ex Officio member	

Accelerator Laboratory



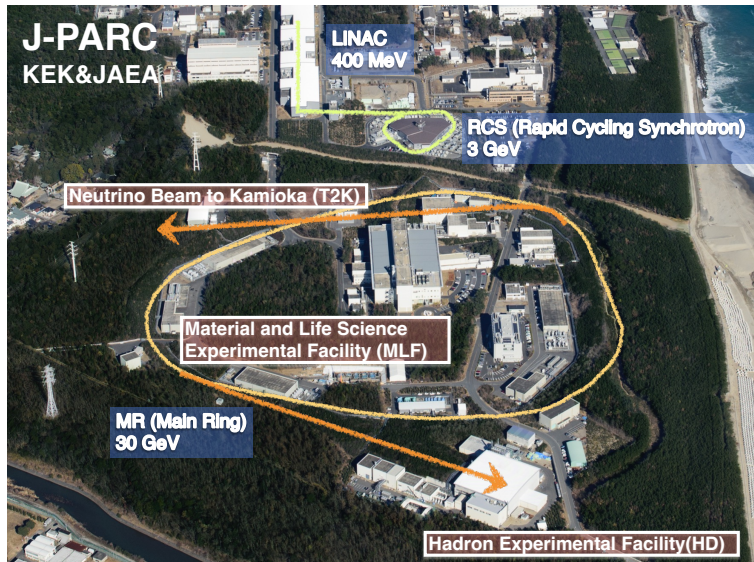
iBNCT



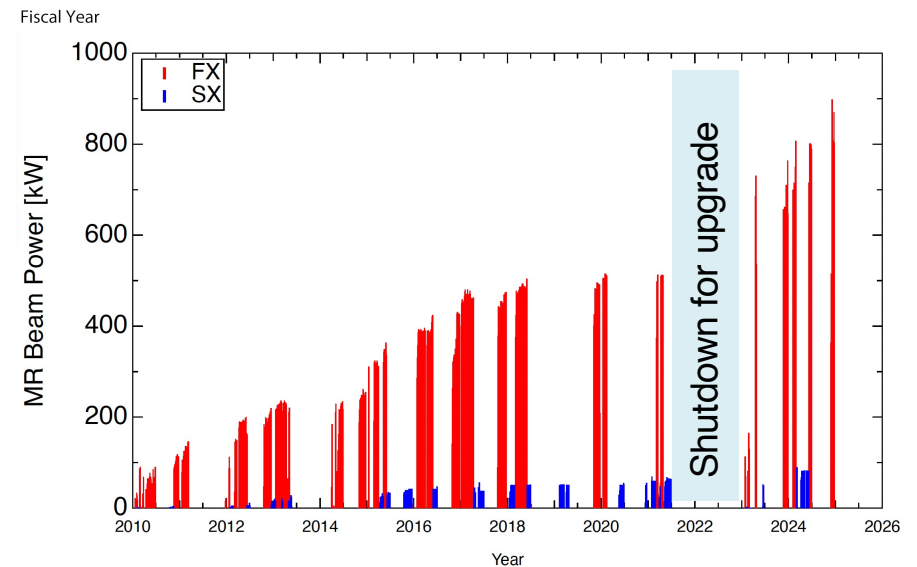
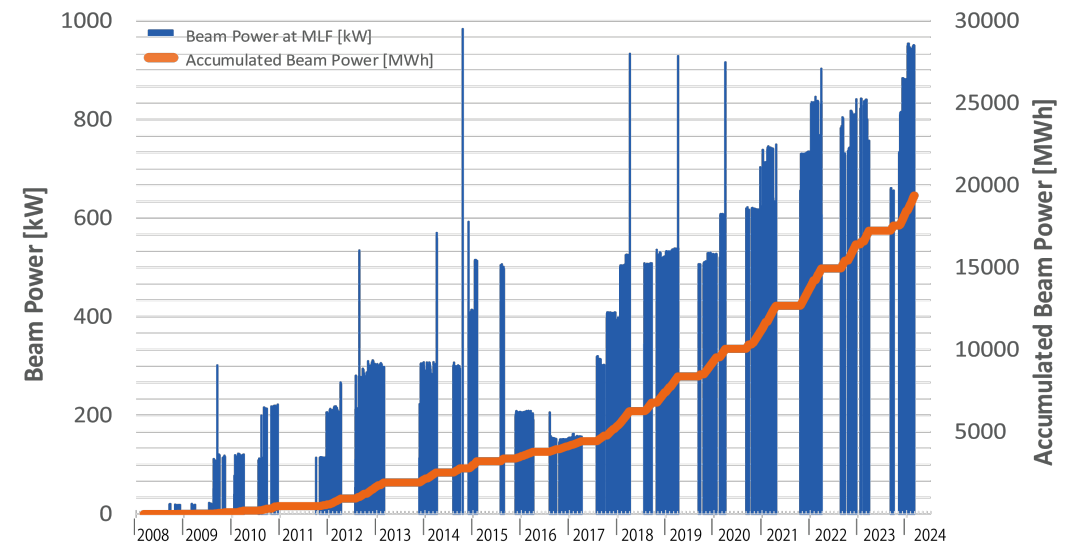
ILC R&D

iCASA : Innovation Center for Applied Superconducting Accelerator

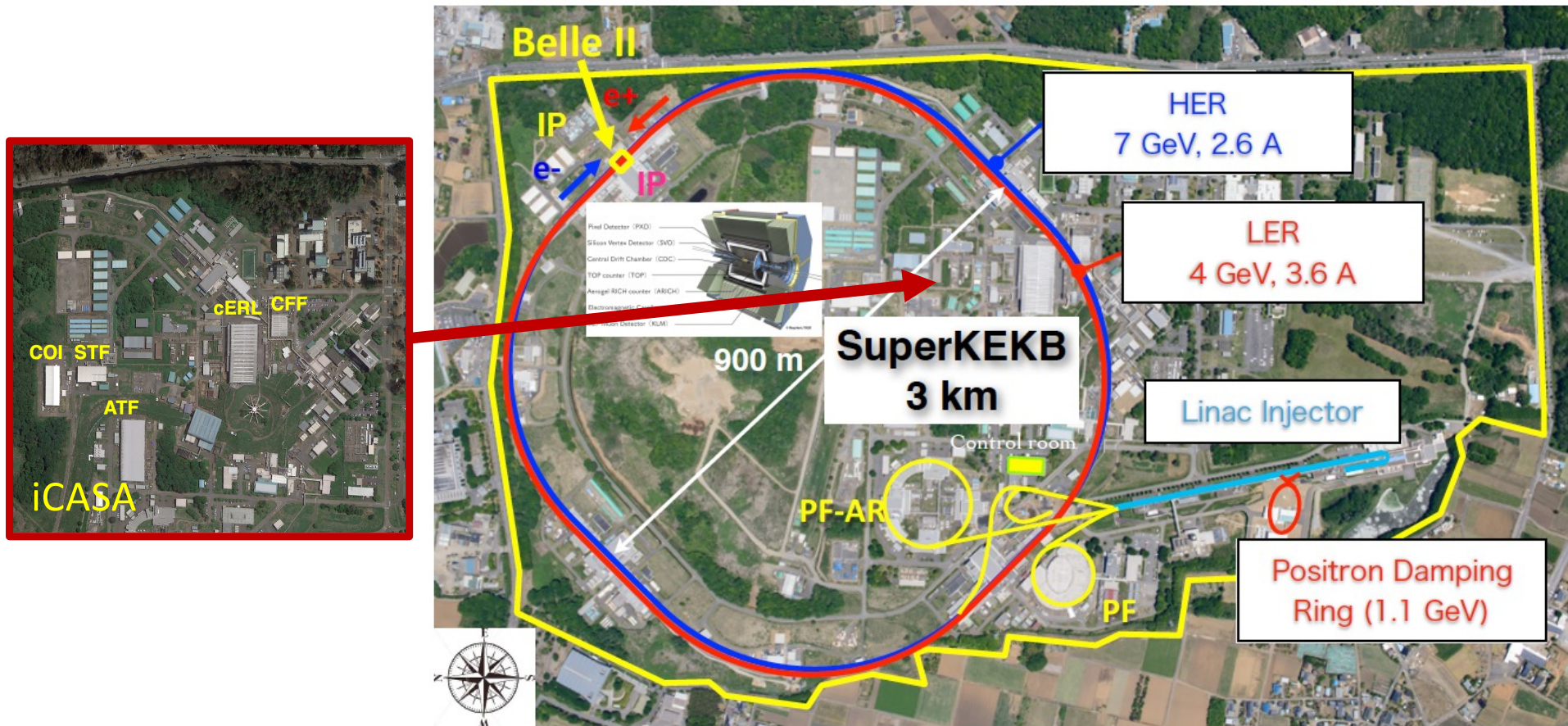
J-PARC



RCS : 1 MW beam operation since April 2024.
 MR-FX: 810kW (2.3×10^{14} ppp), the world highest extracted ppp for physics experiments.
 MR-SX: 81 kW (7.2×10^{13} ppp) with the world highest extraction efficiency of 99.6 %.

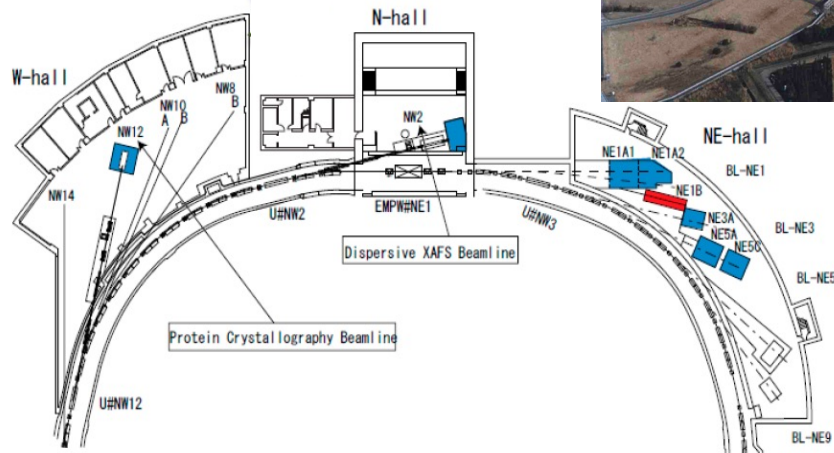


Electron/Positron Accelerator related facilities on Tsukuba campus

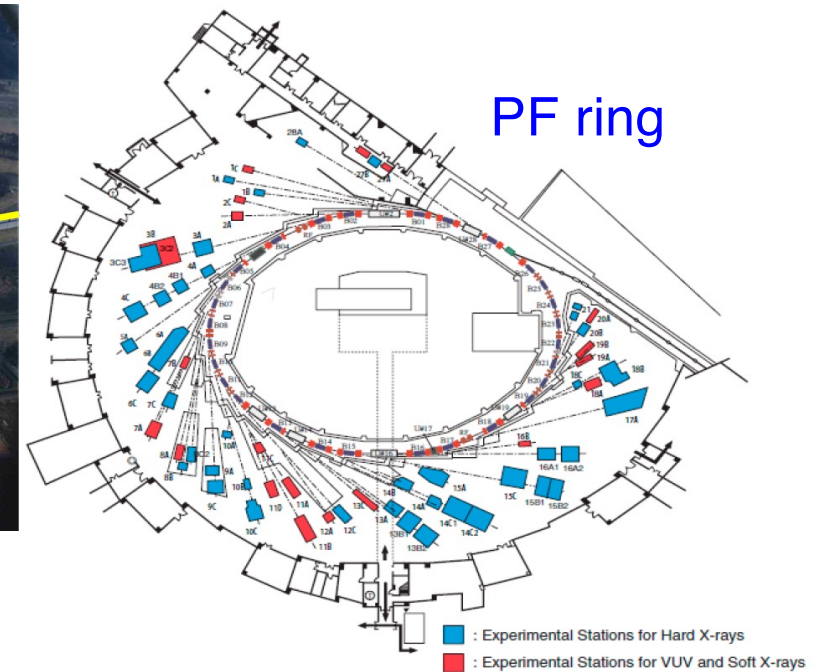
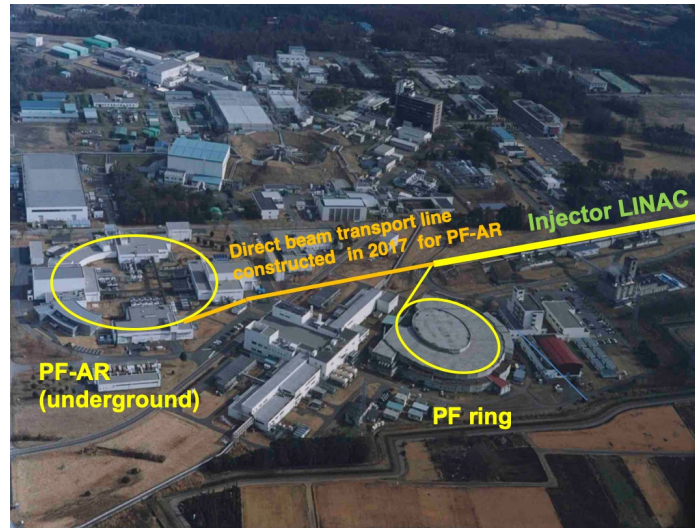


PF / PF-AR

PF-AR



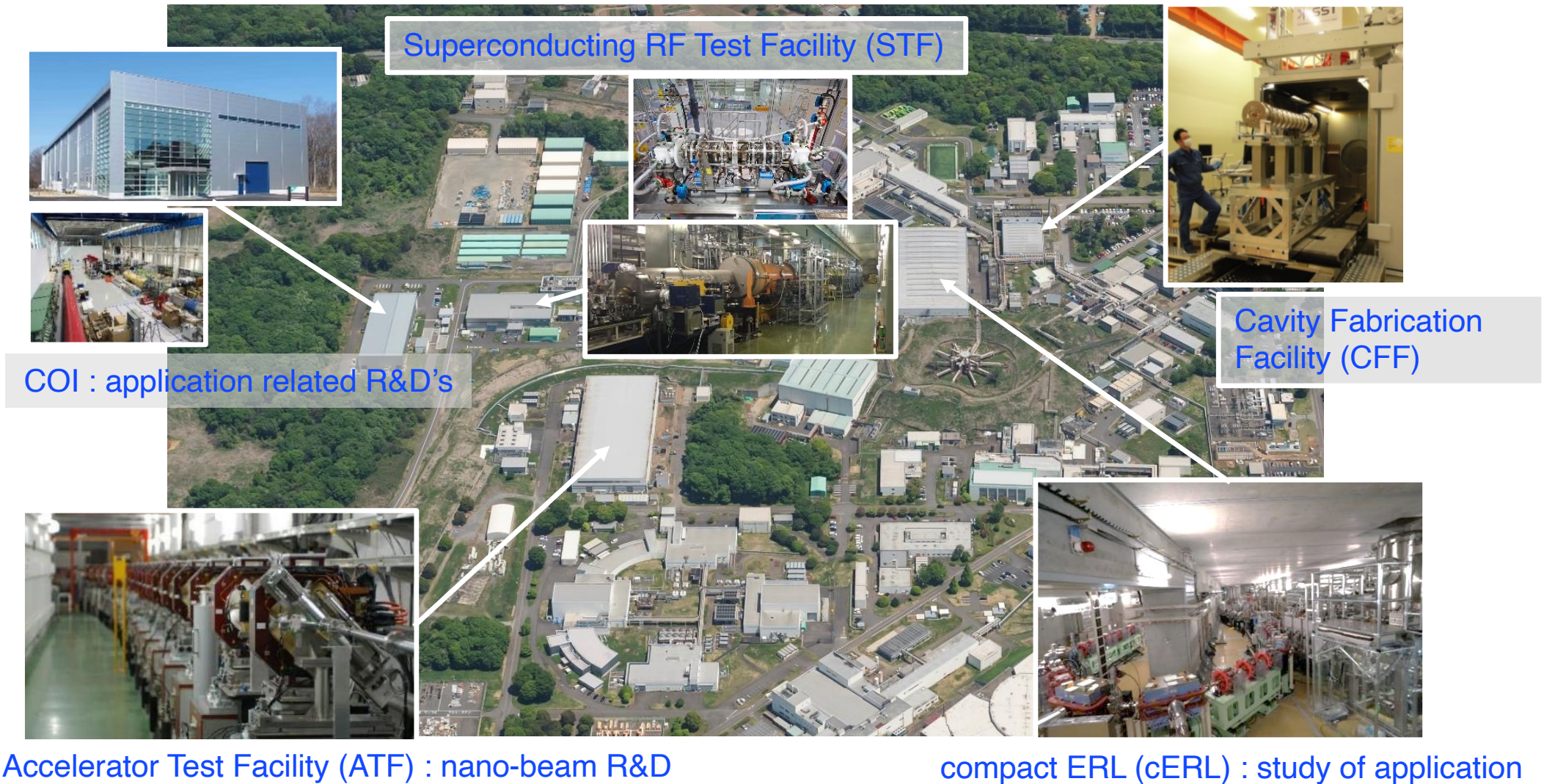
$E=5-6.5$ GeV, $\varepsilon=293$ nmrاد, $C=377$ m, 8 exp. stations:
Always operated in single bunch mode with high intensity beam of 50 mA for time resolved experiments



2.5 GeV, 35 nmrاد, 187 m, 39 exp. stations:
Two operation modes: multi-bunch (280) mode with 450 mA, and hybrid mode (1 + 130).

availability ~ 99 %
~3,000 users/year

Advanced accelerator facilities of iCASA



Staff members in Div. 3,4,5

- One new technical staff was hired in November 2024.
- One academic and two technical staff members will be newly employed from the beginning JFY2025.
- One graduate student was joined in August 2024.
- Two academic and two technical staff will retire at the end of JFY2024, but continue to be employed as Senior Fellows.

Collaborations with Belle II and international community

- Shoji Uno (Professor of IPNS) has been appointed as new liaison of SuperKEKB and Belle II since October 2024.
- Some of Belle II members continue to contribute accelerator operation and to investigate SBL and other accelerator issues together with the SuperKEKB team.
- International collaboration with CERN, IHEP etc. is strengthened (details will be given by Tobiyama-san).