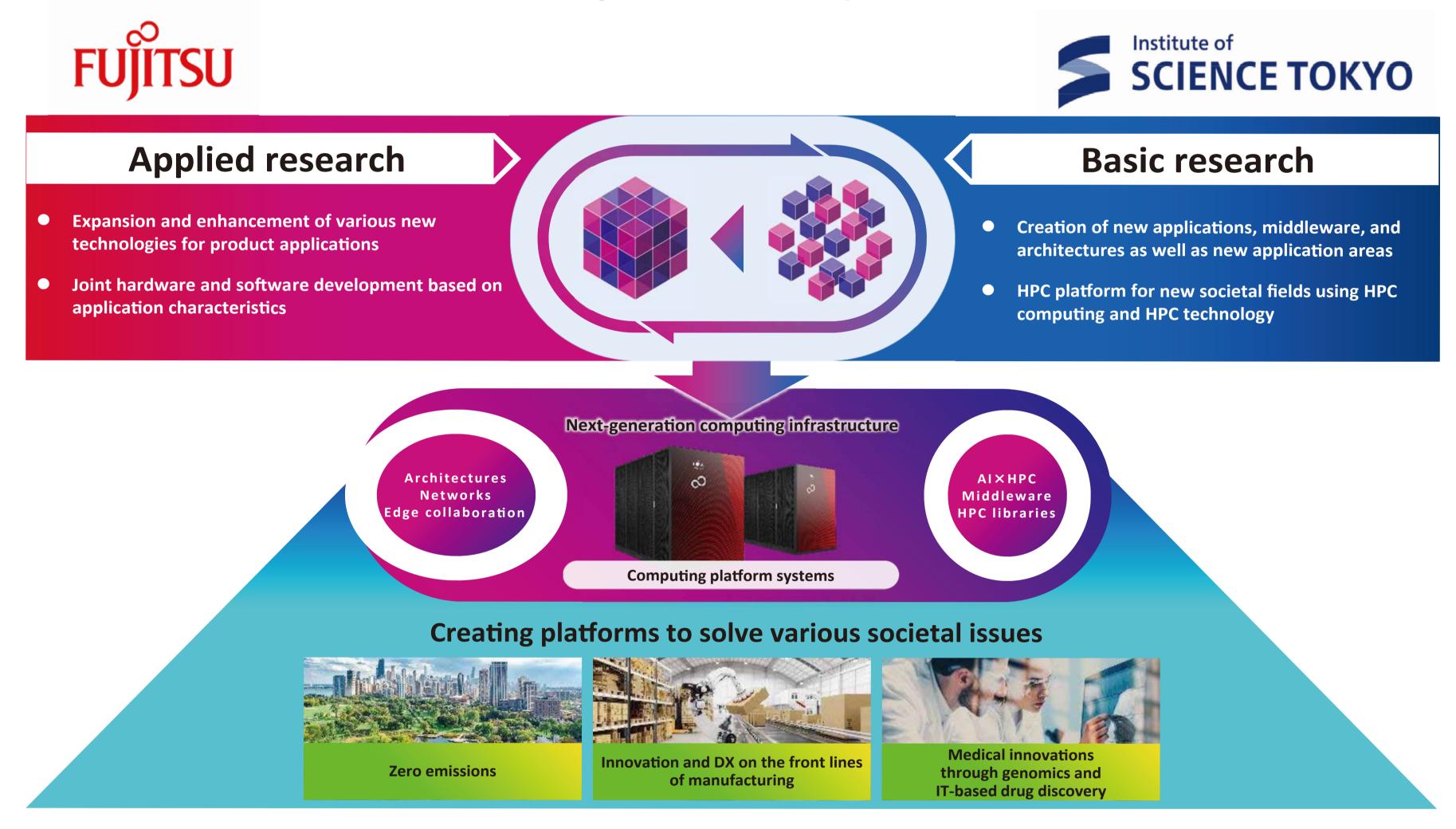


# Collaborative Research between Science Tokyo and Fujitsu

## Overview of Collaborative Research Cluster

The purpose of **Fujitsu Next Generation Computing Infrastructure Collaborative Research Cluster** is to realize s new computing infrastructure capable of extremely large-scale data processing and simulation based on AI and High Performance Computing (HPC) technologies.

- Oct 2022: The cluster was established between Tokyo Institute of Technology (Tokyo Tech) and Fujitsu
- Oct 2024: Tokyo Tech became Institute of Science Tokyo, due to merger with Tokyo Medical and Dental University



Leader: Science Tokyo) Prof. Hidehiko Masuhara

Deputy Leader: Fujitsu) Fellow Naoki Akaboshi, Science Tokyo) Prof. Toshio Endo

### Fujitsu

Research Manager: Miwa Ueki Researcher: Toshio Ito, Kota Itakura

Research Manager: Masahiro Miwa

Researcher: Hiroki Ohtsuji, Jun Kato, Akane Koto

Application
Large Scale AI/ML
Digital Twin
Material, Fuilds...

System/Middleware
Interactive, Real-time

Resource Management

GPU, Next-gen memory

### Science Tokyo

Prof. Ono Isao, Prof. Rio Yokota, Prof. Ryo Onishi Prof. Katsuki Fujisawa, Prof. Takefumi Kanamori

Assoc. Prof. Ryuishi Sakamoto, Assoc Prof. Akihino Nomura Assoc. Prof. Ryohei Kobayashi, Prof. Toshio Endo, Prof. Hidehiko Masuhara 1 Technical Staff, 10 Graduate Students

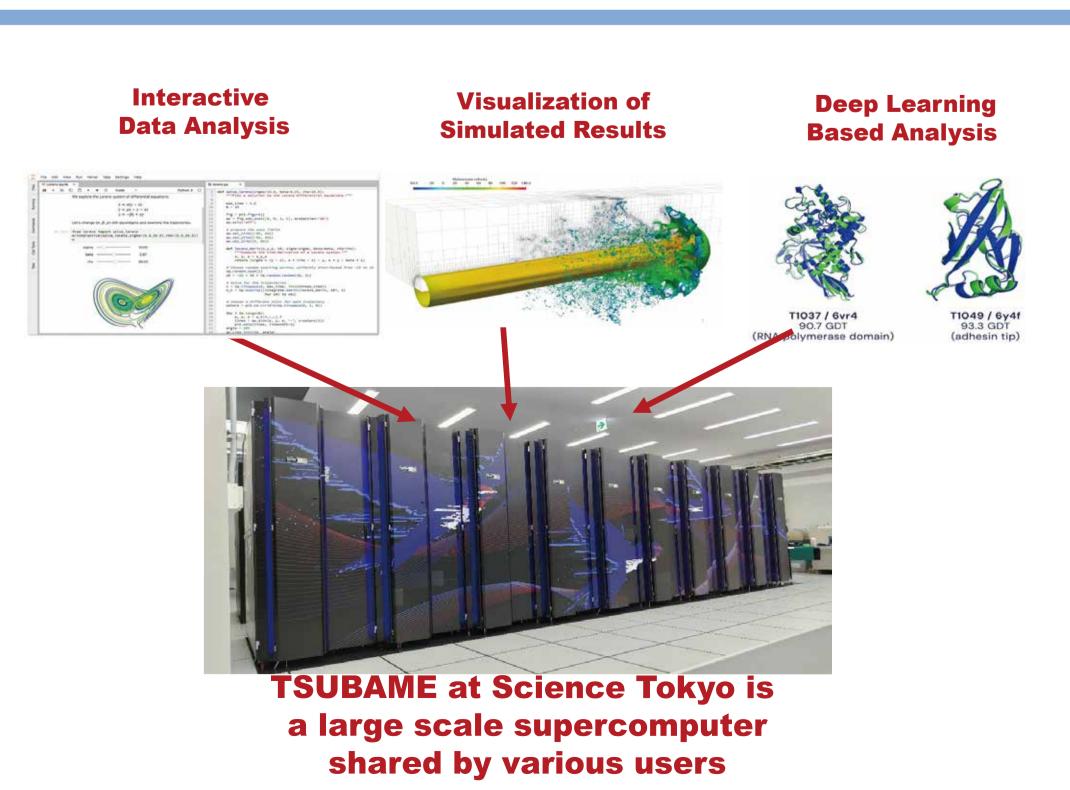
# System Infrastructure Supporting Real-World Interactive HPC

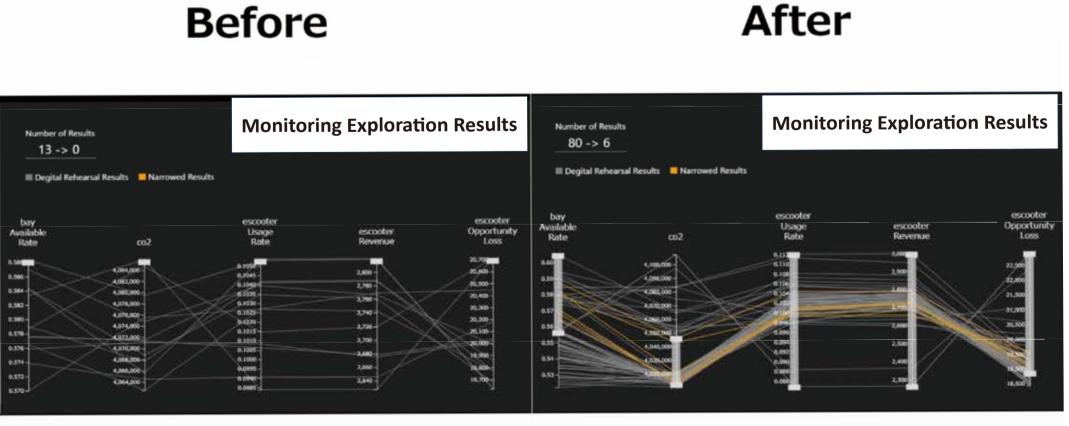
Analysis of real-world big-data requries HPC technologies with innovation.

Achievement of both interactiveness and efficient

interactiveness and efficient resource usage is required.

- Interactive/real-time job scheduling based on preemption and gang scheduling
- Supporting "cloud-native" apps on system without "root" privilege





See Demo Video at Booth



Digital twin application (e-Scooter placement) is run on TSUBAME with interactive scheduling

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