

AI activities in Japan

Taku Gunji (QNSI/U-Tokyo)

Recognition of Japan's AI for Science Strategy

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Driving the Paradigm Shift in Scientific Research (FY2026–2030)

▶ A Historic Turning Point

- ▶ AI is a major game changer, revolutionizing the entire research process from hypothesis to analysis.
- ▶ AI research capability now directly determines a nation's scientific and international competitiveness.

▶ National Strategic Positioning

- ▶ Designated as a core technology domain in Japan's *7th Science, Technology, and Innovation Basic Plan*.

▶ The 5-Year Reform Period (FY2026–2030)

- ▶ A critical, concentrated phase to secure international competitiveness and revitalize science.

Japan's strategic targets and milestones

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Leveraging Strengths and Tackling 3-Year Milestones

▶ Japan's Core Assets (Strengths)

- ▶ **Info-Infra:** Ultra-high-speed network (SINET), NII Research Data Cloud, and computing power (Fugaku/Fugaku-NEXT).
- ▶ **Research & Social:** Advanced large-scale facilities, reliable real-world data, and precision robotics.

▶ The Ultimate Target and Three-Year Milestones

- ▶ **The 1/10 Goal:** Reduce R&D timelines to 1/10 in key areas as below.
- ▶ **Material:** AI-driven lab systems with 10x potential speed in material discovery.
- ▶ **Biology:** High-efficiency bio-generation models to design functional bio-products.
- ▶ **Facilities:** Automated and autonomous experiments utilizing AI agents at large-scale facilities.

Computing & Data Infrastructure for AI for Science

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Leveraging Fugaku-NEXT, SINET, and NII RDC for Advanced Discovery

▶ The Pillars of AI Development

- ▶ Highly advanced AI models require massive computing power and high-quality data.
- ▶ Empowered by NII RDC (data platform), SINET (high-speed network), and "Fugaku".

▶ Evolution of Computing Power (Fugaku-NEXT)

- ▶ **Fugaku-NEXT:** Leapfrogging AI processing and application performance through dedicated AI supercomputing.

▶ Advancing Networks & Data Clouds

- ▶ **SINET Upgrade:** Supporting the exponentially increasing flow of research data.
- ▶ **AI-Enabled NII RDC:** Automating tedious data management tasks to free up researchers' creative time.

Computing & Data Infrastructure for AI for Science

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https://www.riken.jp/en/news_pubs/news/2025/20250822_1/index.html

Aug. 22, 2025

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RIKEN launches international initiative with Fujitsu and NVIDIA for "FugakuNEXT" development

Building the next-generation "AI-HPC platform" to solve complex social challenges through computational science

[Japanese Page](#)

https://www.riken.jp/en/news_pubs/news/2026/20260619_1/index.html

Jun. 23, 2026

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RIKEN's new AI for Science supercomputer has an official name: "RIKYU"

[Japanese Page](#)

RIKYU comprises 400 compute nodes equipped with the NVIDIA GB200 NVL4 (1,600 NVIDIA Blackwell GPUs in total). The nodes are interconnected by NVIDIA Quantum-X800 InfiniBand networking, enabling high-speed communication of up to 3.2 terabits per second

US-Japan cooperation for Genesis Mission

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Japan Becomes 1st International Partner for U.S. Genesis Mission AI Project



Keiichi Nakane / The Yomiuri Shimbun

Yasuyoshi Kakita, vice minister for policy coordination of the Education, Culture, Sports, Science and Technology Ministry, right, and Takehiko Matsuo, vice minister for international affairs of the Economy, Trade and Industry Ministry, left, hold documents on Japan's participation in the Genesis Mission in Washington on Thursday.

By Keiichi Nakane / Yomiuri Shimbun Correspondent

16:12 JST, June 5, 2026

WASHINGTON — The Japanese and U.S. governments officially announced Thursday that Japan will participate in the Genesis Mission, making the country the first international partner for the U.S. project aimed at accelerating scientific discoveries and technological innovation utilizing artificial intelligence.

Under this partnership, the two countries plan to conduct joint

research utilizing AI in 11 fields, including the development of autonomous laboratory systems and advanced materials. The aim is to enhance Japan's research capabilities and enable the two countries to work together to counter China.

United States and Japan Announce Historic \$1 Billion Partnership Under President Trump's Genesis Mission

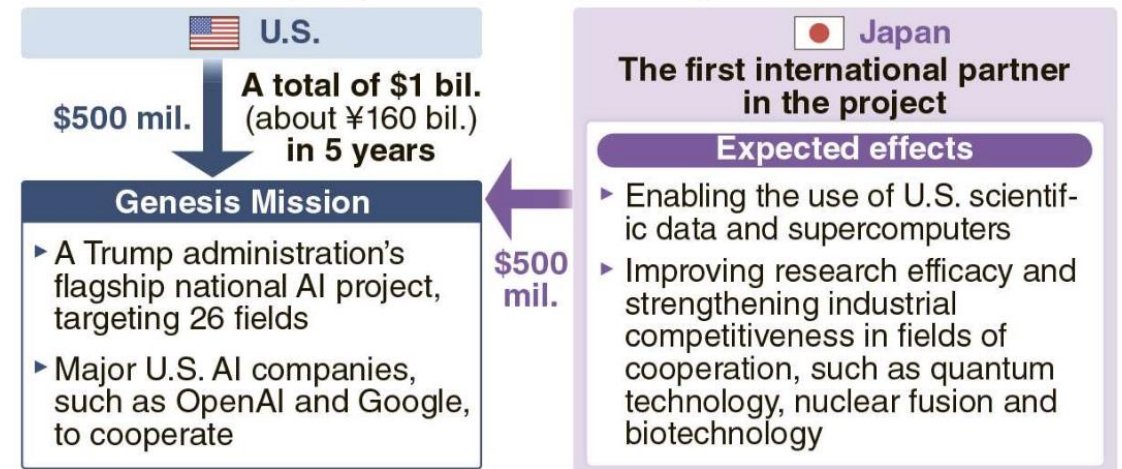
The U.S. Department of Energy and Japan's Ministry of Education, Culture, Sports, Science and Technology and Ministry of Economy, Trade and Industry, today announced an historic \$1 billion strategic partnership making Japan the first international partner in President Trump's Genesis Mission.

[Energy.gov](https://www.energy.gov)

June 4, 2026

Estimated Read Time 4 min

U.S. national project and Japan's planned contribution



US-Japan joint research in 11 fields

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1. Scaling the Biotechnology Revolution
2. Accelerating Delivery of Fusion Energy
3. **Unifying Physics from Quarks to the Cosmos** →
4. **Enhancing Particle Accelerators for Discovery**
5. Designing Materials with Predictable Functionality
6. Next Generation Computational Science
7. Autonomous Lab
8. Advanced Manufacturing
9. Strategic resource security for energy, food, and water
10. Designing edge and cloud computing resources and establishing frameworks for shared operation
11. AI for Math

Unifying Physics from Quarks
to the Cosmos

Dr. Gina Rameika (US)

Dr. Sharon Stephenson (US)

Dr. Taku Gunji (JPN)

Mr. Akira Henda (JPN)

Funding Strategy: Launch of "ARiSE" Program

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Accelerating Strategic Targets & International Collaboration (Launched May 2026)

▶ Program Overview (ARiSE)

- ▶ **Flagship Initiative:** Launched by MEXT and JST as the leading flagship program to execute the "AI for Science" national strategy.
- ▶ **Strategic Investment:** Focused investment in areas leveraging Japan's strengths to generate world-leading scientific achievements and foster global partnerships.

MEXT = Ministry of Education, Culture, Sports, Science and Technology
JST = Japan Science and Technology Agency

Funding Strategy: Launch of "ARiSE" Program

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Funding details for ARiSE

▶ Overall Budget for the Program

- ▶ Total Budget: 320 billion JPY (allocated as a national fund)
- ▶ Project Duration: Approx. 2.5 years (From October 2026 to March 2029)

▶ Funding & Scale by Research Type

▶ Type A: "Strategic Target" Type

- ▶ Budget: 1.0 to 3.0 billion JPY per project for the entire duration.
- ▶ Expected Awards: Around 10 to 12 projects.

▶ Type B: "International & Collaborative" Type

- ▶ Budget: 200 million JPY per project for the entire duration.
- ▶ Expected Awards: Around 20 projects.

My proposal in ARiSE Program

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International Standardization of Autonomous Scientific Experimentation Platform for EIC

AI-Driven Autonomous Experimentation Platform

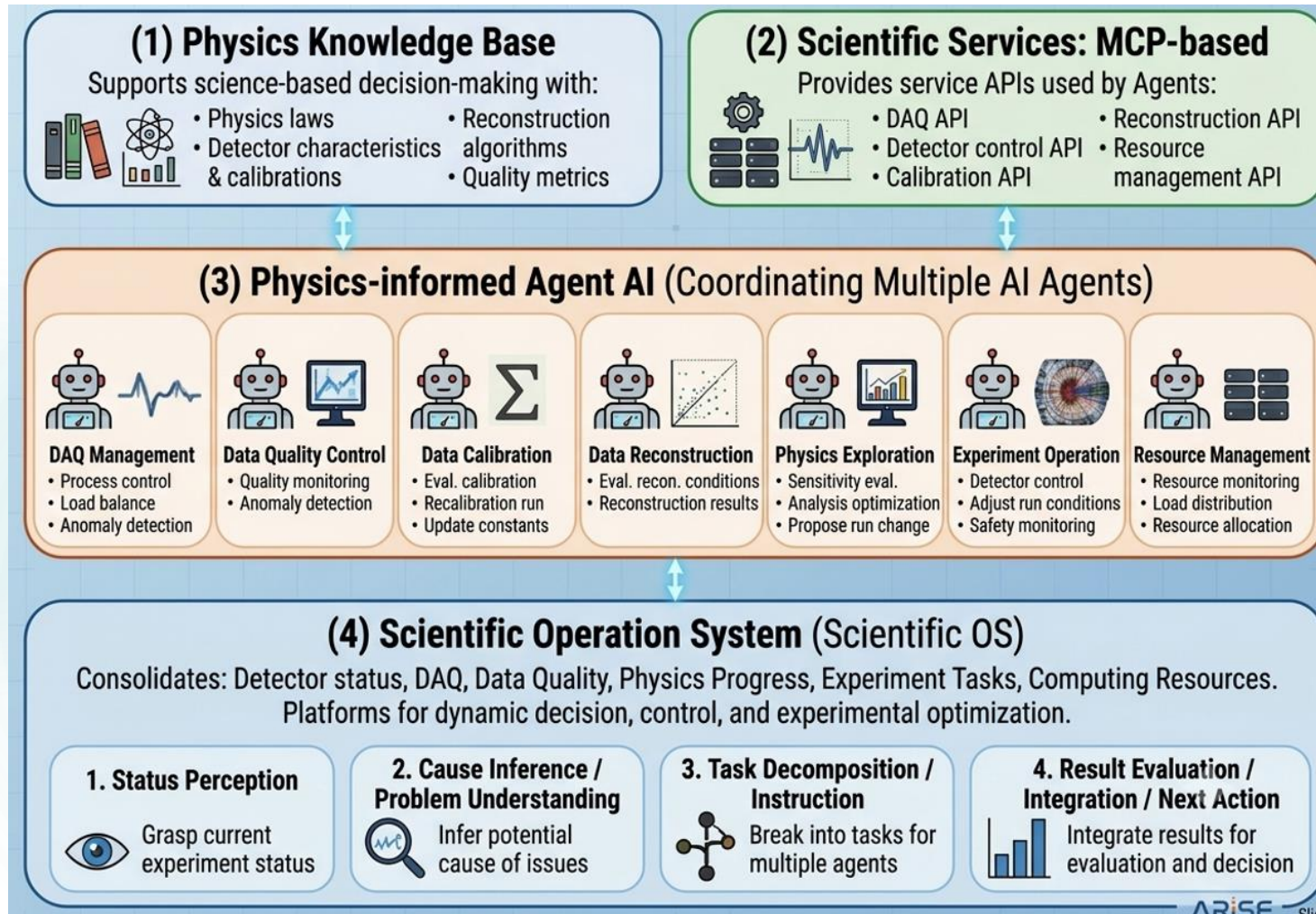
- **Collaborative AI Agents:** Developing a prototype platform where multiple, role-assigned AI agents cooperate to optimize everything from daily operations to final physics discovery.
- **International Collaboration :** JP (Tokyo/RIKEN/Osaka) and US (BNL/JLab)

The Deployment Target (The Outlet)

- **EIC Realization:** Implementing and validating this platform directly within the **Electron-Ion Collider (EIC)**, an international top-league project.
- **Impact:** Directly accelerating the timeline for next-generation physics discoveries and establishing a new global standard for experimental infrastructure.

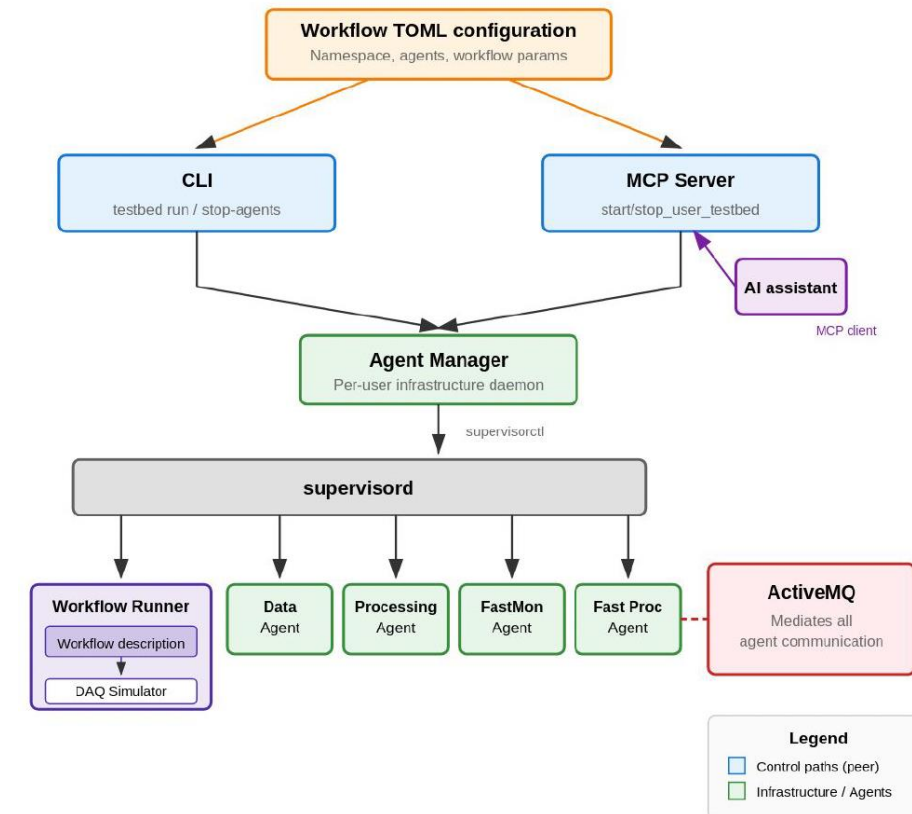
My proposal in ARiSE Program

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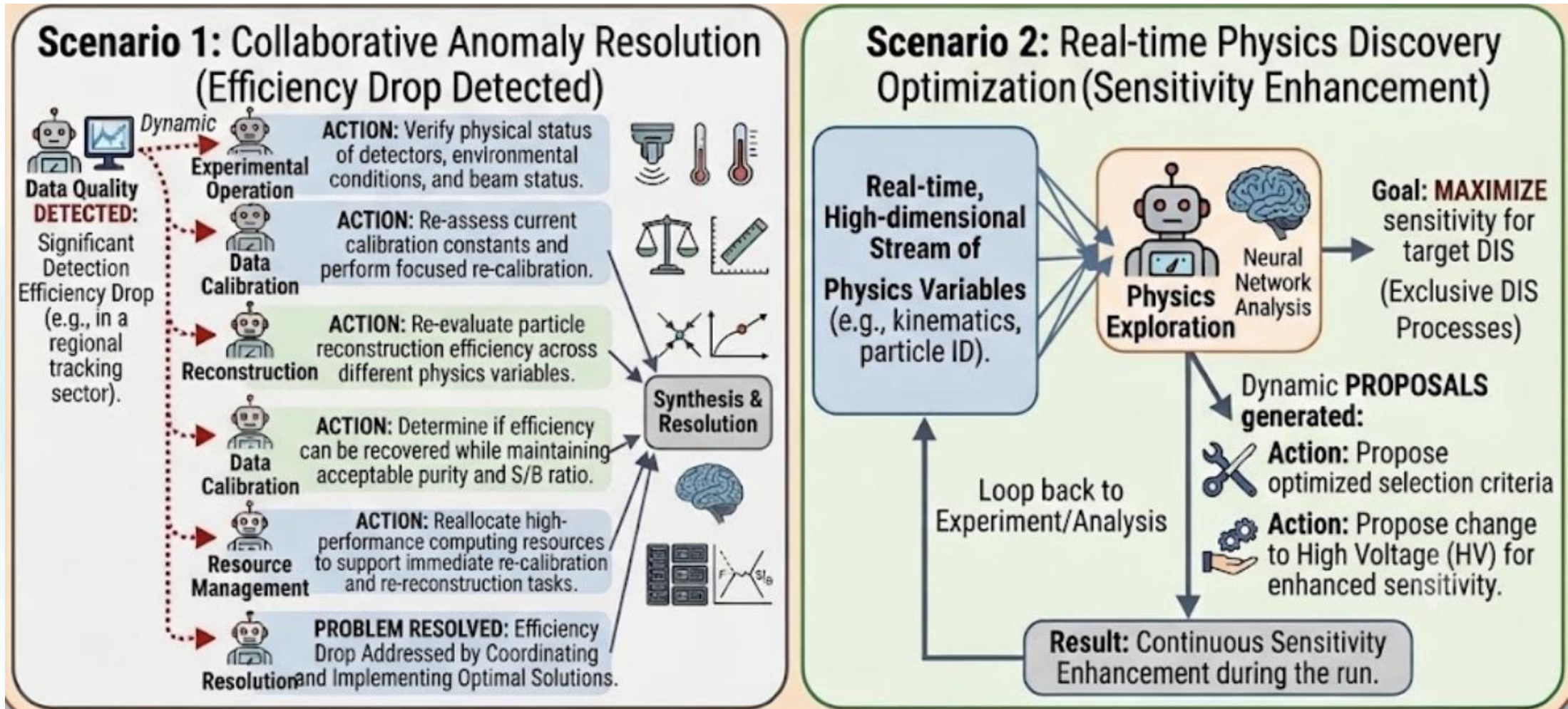
Agent based orchestration
(testbed R&D for ePIC streaming
Readout and computing)

<https://indico.bnl.gov/event/31808/contributions/126683/>



Operation Examples by Agentic AI

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Future Vision: "ARiSE 2.0"

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Shifting from "AI for Science" to "AI for Innovation"

▶ Core Vision

- ▶ **Evolution:** Expanding from scientific discovery to industrial and societal innovation.
- ▶ **Goal:** Establishing Japan's strategic indispensability in the global AI ecosystem.

▶ Four Possible Pillars

- ▶ **U.S. Collaboration:** Deepening partnership with the U.S. *Genesis Mission*.
- ▶ **Global Alliances:** Co-developing AI foundation models with top-tier global partners.
- ▶ **Global South (ASEAN):** Solving regional challenges (e.g., disasters, food) via AI.
- ▶ **Industry-Academia Data:** Creating secure "AI-Ready" platforms for industrial data sharing.
- ▶ **If this is called, I will apply for 1-3 billion JPY to build echelon2.**