



Beyond 5G Promotion Strategy 2.0 for AI Society in the 2030s

- MATSUI Masayuki
- Director of Technology Policy Division,
Global Strategy Bureau
- Ministry of Internal Affairs and Communications, Japan

Progress of Beyond 5G Initiatives

MIC/NICT initiative

Full-scale operation of research and development fund

- The **permanent fund** was established for NICT in March 2023.
- **17 new projects** were selected in FY 2023.
- Total ¥116.1 billion (about \$774.3 million) was funded.

USD 1 = JPY 150



Multinational initiative

Developing an international vision on Beyond 5G/6G

- The 2023 “G7 Digital and Technology Ministerial Declaration” endorsed the “**G7 Vision for Future Networks in the Beyond 5G/6G Era.**”



2023 G7 Digital and Tech Ministers' Meeting

Currently it is transitioning from **the initial phases** of vision creation and elemental technology development to a phase of **social implementation!**

Background on Beyond 5G Promotion Strategy

June 2020

「Beyond 5G Promotion Strategy」(MIC)

January 2021

Amendment of NICT Act Launching Temporary Beyond 5G R&D Fund on NICT

June 2022

Interim Report by the Information and Communications Council

December 2022

Amendment of NICT Act Launching Permanent Beyond 5G R&D Fund on NICT

March 2023

The Beyond 5G R&D Fund started

June 2024

Final Report by the Information and Communication Council

August 2024

「Beyond 5G Promotion Strategy 2.0」(MIC)

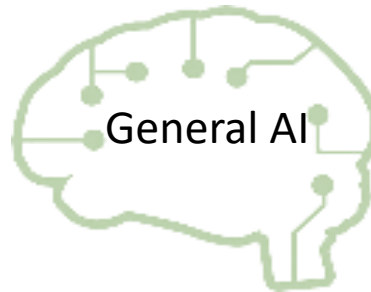
Image of AI Utilization by Society in the 2030s

- **Innovations in AI development and utilization** are expected to address social issues, on the other hand **various risks** are pointed out regarding **generative AI**.
- Not only we will **rely on huge general AI** to solve all problems, but also **link small and distributed AIs** specialized for **individual fields**.

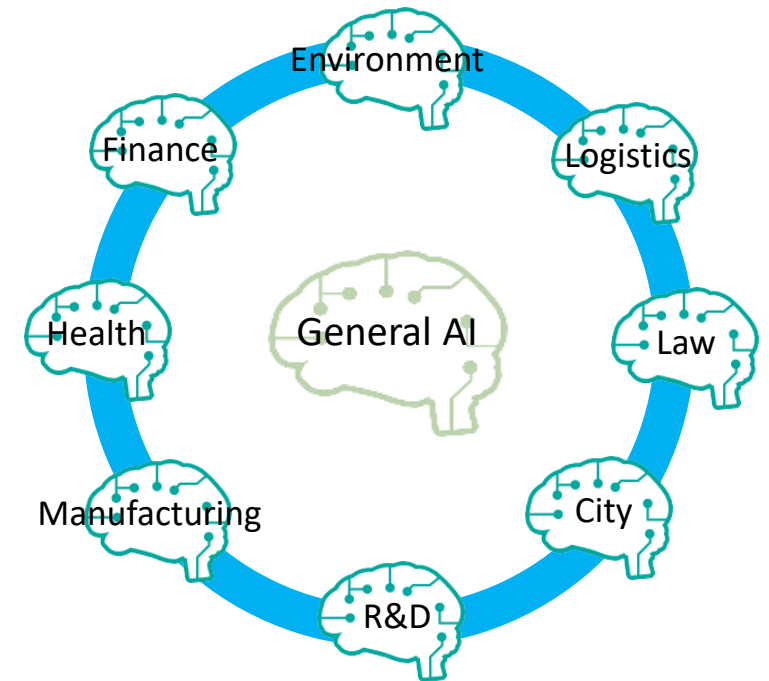
General AI has risks.

- High costs.
(computational resources, electricity, and time)
- High environmental impacts.
- High barriers to introduce to each field.
- False or misleading information.

The Dawn of Generative AI (Current Era)



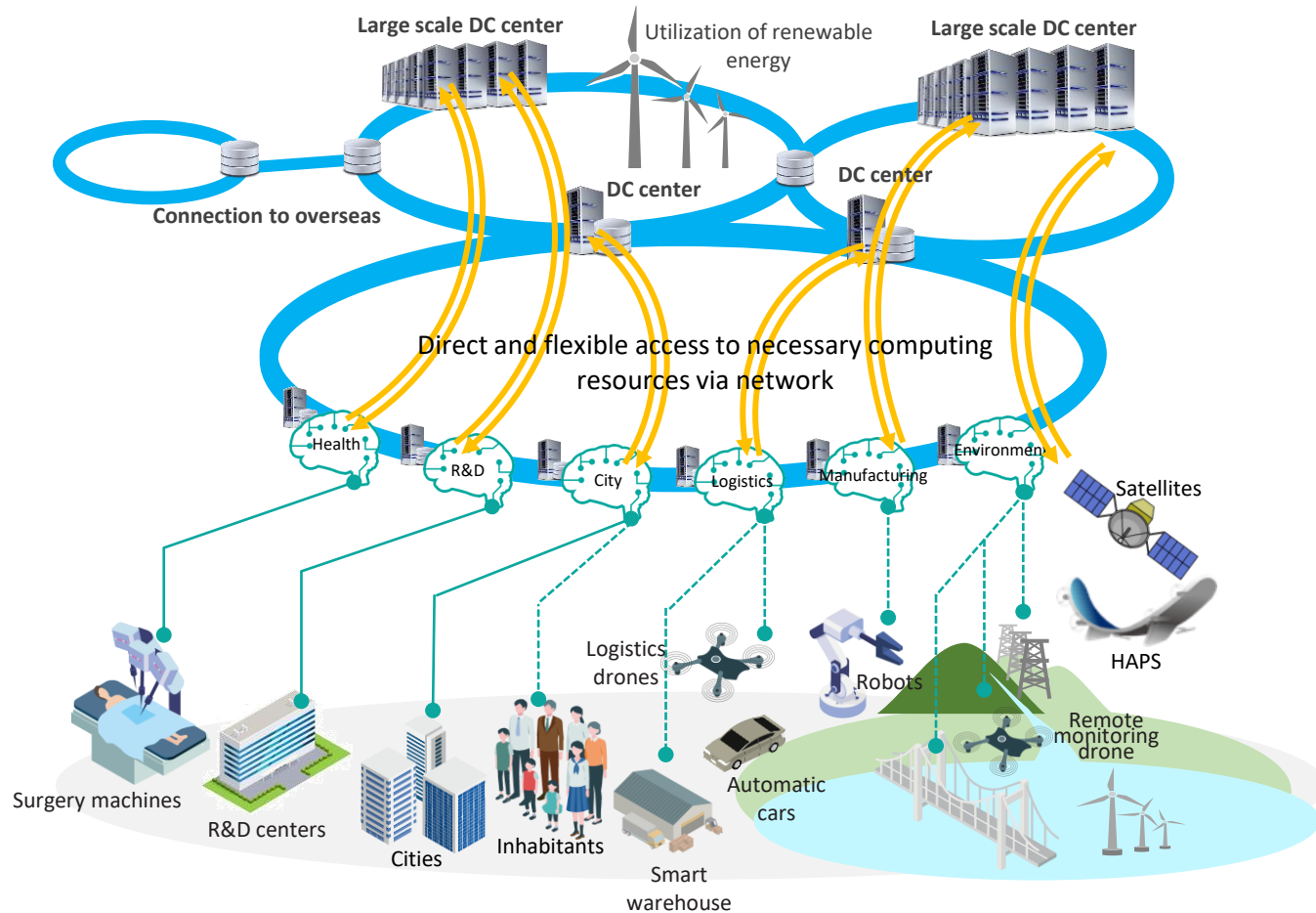
AI Society in the 2030s



As a support system for numerous small and distributed AIs,

the role of **the information and communication infrastructure (Network for AIs)** is even more important!

Digital Infrastructure That Will Support AI Society in the 2030s



A next-generation information and communication infrastructure (**Beyond 5G**) should be **connecting extensively**

- a wide variety of users,
- objects and sensors,
- numerous small and distributed AIs specialized in individual fields,
- and **computing resources**, such as **data centers** where **renewable energy** can be utilized

on multi-layered network (**RAN** and **NTN**) and **all-photonics network (APN)**.

Accelerate innovation that resolves social issues

by providing green, safe, secure, and reliable AI to the entire society through Beyond 5G!

Three Strategic Areas of Beyond 5G Promotion Strategy 2.0

All-Photonics Network (APN) field

- Support for **R&D, testbed development** and **standardization** toward 2030.

Non-Terrestrial Networks (NTN) field

- On **HAPS**, system development for **2026 introduction** in Japan, and support for **R&D**.
- On **satellite communications**, system development for smooth **introduction of globally provided services** in Japan, and support for **R&D**.

Radio Access Network (RAN) field

- Expand utilization of **Sub-6 GHz, millimeter waves**, and **Stand Alone (SA)**.
- Promote **R&D to secure frequencies** to meet the future growth of traffic demand, **upgrade RAN**, and further **utilize high frequencies**.

Thank You

- MATSUI Masayuki
- Director of Technology Policy Division,
Global Strategy Bureau
- Ministry of Internal Affairs and Communications, Japan