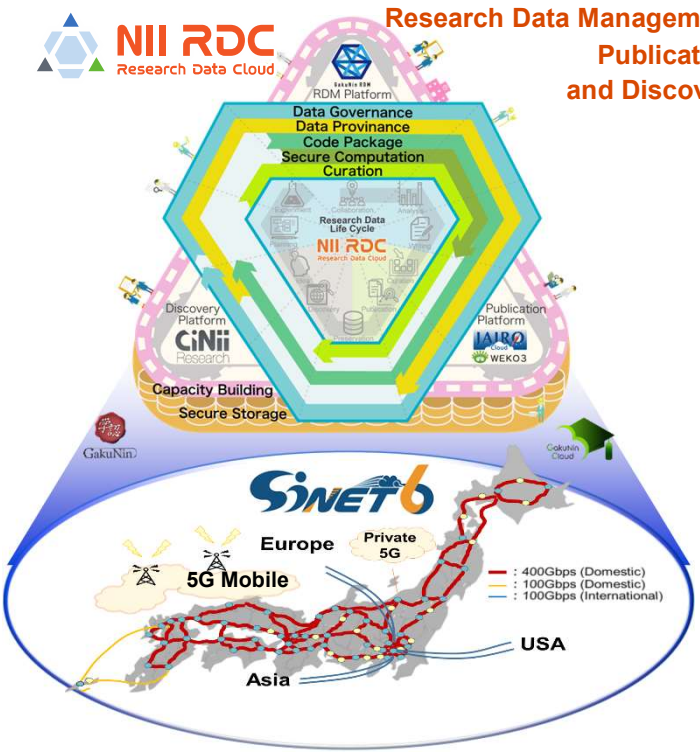
Academic Information Infrastructure for Data-Driven Science

National Institute of Informatics & Academic Information Infrastructure

The National Institute of Informatics (NII) seeks to advance integrated research and development activities in information-related fields, including networking, software, and content. NII also promotes the creation of state-of-the-art academic information infrastructure, designed by fusing the ultra high-speed network, ***SINET6***, and the research data platform, ***NII Research Data Cloud***, to promote data-driven science.



Cloud, HPC and IoT Platform

Case Study of Hybrid Cloud for Astronomical Observatory Data Analysis

- ✓ Case study of hybrid cloud architecture for storing *ALMA Radio Telescope data* and analyzing them through research applications

Data Analysis Platforms

- ✓ Virtual cloud provider (VCP) for automatically building data analysis platforms
- ✓ Reproducible computing service in NII Research Data Cloud (RDC)

Analysis

Infrastructure Operation

- ✓ ID management federation for High Performance Computing Infrastructure (HPCI)
- ✓ Coordination of Fugaku-NEXT & HPC systems
- ✓ Security guideline

Literate Computing for Reproducible Infrastructure

- ✓ Knowledge sharing for operations of cloud computing infrastructure utilizing Jupyter Notebook preserving reproducibility

Cloud HPC

Zero Trust based IoT Security

- ✓ Secure Internet of Things (IoT) systems by the concept of zero trust security by the fusion of formal verification and system software technologies

IoT Stream Processing

- ✓ Development and application studies of SINETStream, a software library that enables easy development of secure and efficient IoT applications over the Internet

IoT