



July 17, 2024

# Projection mapping exhibit shows SINET6 data flow rates on a map of Japan

- Visualizing the importance of network infrastructure that "just works" -

Starting from July 18, the Inter-University Research Institute Corporation Research Organization of Information and Systems National Institute of Informatics (NII; Director-General: KUROHASHI Sadao; Chiyoda-ku, Tokyo) will exhibit SINETARIUM ii, a projection mapping work showing traffic flow rates of the SINET6 scientific information network on a map of Japan, in the first-floor lobby of the National Center of Sciences (Chiyoda-ku). This work visualizes data from SINET6, built and operated by NII, and provides a glimpse of the importance of network infrastructure that is essential for the educational and research activities of universities and research institutions. The exhibit will be held from July 18 to September 30, and is open to view by everyone.

The Science Information NETwork, SINET, is an information and communications network built and operated by NII that supports research and educational activities of universities and research institutions throughout Japan. SINET6, which connects the prefectures of Japan with a 400 Gbps ultra-high-speed network and has been enhanced with international connections, began full-scale operations from April 2022, and has become essential infrastructure for the academic community. Currently, more than 1,000 universities and research institutes have joined the network. NII is promoting SINET and research data infrastructure in an integrated manner as scientific information infrastructure for the development of open science that can contribute to all academic fields.

This new exhibit will feature a projection mapping work that visualizes changes in data flow rates in the SINET6 scientific information network. It is a visual representation of how data flows through SINET from moment to moment and how traffic changes, as well as data flow rates in the data centers. Touch sensors are installed on the projected work to allow interactive operation. Visitors interact with the display by touching the data centers displayed on the wall, the networks between data centers, and the linked urban areas with international connections. In addition, the exhibit content visualizes information such as SINET's data volume and topology changes, and gives a glimpse of its importance as network infrastructure.

# National Institute of Informatics

Web: https://www.nii.ac.jp X (formerly Twitter): @jouhouken Facebook: https://www.facebook.com/jouhouken Inter-University Research Institute Corporation Research Organization of Information and Systems National Institute of Informatics Publicity Team, Planning Division, General Affairs Department 2-1-2 Hitotsubashi, Chiyoda-ku, Tokyo 101-8430 Direct: 03-4212-2164 E-Mail: media@nii.ac.jp This exhibit can be viewed by everyone. NII strives to proactively communicate its research and service initiatives and their results to society, and will continue to disclose information on its activities both in Japan and abroad.

#### **Exhibit Summary**

Exhibit Period	Thursday, July 18 to Monday, September 30, 2024 Weekdays 10:00 a.m. to 6:00 p.m. (Saturdays, Sundays, and holidays excluded/scheduled)
Exhibit Location	National Center of Sciences, first floor (2-1-2 Hitotsubashi, Chiyoda-ku, Tokyo)
Work Title	SINETARIUM ii
Production Cooperation	SWAG Inc. (Chiyoda-ku, Tokyo)

#### Main Content

- <u>Trace changes in SINET</u>
  This content visualizes changes in SINET's circuit topology and traffic volume in Japan.
- <u>400 Gbps domestic line Steady state of SINET6</u>
  Visualization of data centers and traffic volumes in Japan. Touch the data center icons projected on the wall for more information.
- <u>Robust design What if a SINET line breaks?</u>
  If there is a network line disconnection between data centers, SINET immediately switches to a detour path to maintain communications. In this scene, you can see a simulation of a line disconnection.
- <u>Circling the Earth The situation of international lines</u>
  SINET's international lines are joined to Singapore, Guam, Los Angeles, New York, and Amsterdam, and connect to the world. This shows the situation of connections circling the Earth designed in 2023.

### National Institute of Informatics



(Image = 400 Gbps domestic line — Steady state of SINET6)

Contact for media inquiries:

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