



TRAINING WEEK by SCDA

September 28th - October 2nd | LandNexus



SCHEDULE



Monday 28th

10:00 – 12:00

SCDA intro:
desktop software,
Network info +
Q&A

13:00 – 14:00

SCDA Q&A and
hands-on support

14:00 – 15:00

DX session
(*Registration
required*)

Tuesday 29th

10:00 – 12:00

- Intro to R
(Day 1)
- QIAGEN IPA

13:00 – 14:00

- Intro to HPC
(Day 1)
- QIAGEN IPA

15:30 – 16:30

- AI x HPC at
OIST
- QIAGEN IPA
one-on-
one/group
session

Wednesday 30th

10:00 – 12:00

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(Day 2)

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- Storage at
OIST

15:30 – 16:30

- Nextflow &
NF-core on
Deigo

15:30 – 16:30

- Nextflow Clinic
and Q&A

Thursday 1st

10:00 – 12:00

- Intro to
command line

13:00 – 14:00

- GitHub &
version control

15:30 – 16:30

- Network and
research
connectivity

Friday 2nd

10:00 – 12:00

- Advanced
Scientific Viz.
Techniques

13:00 – 14:00

- Intro to HPC
(Day 2)

15:30 – 16:30

- Intro to ggplot
in R





Core Facilities



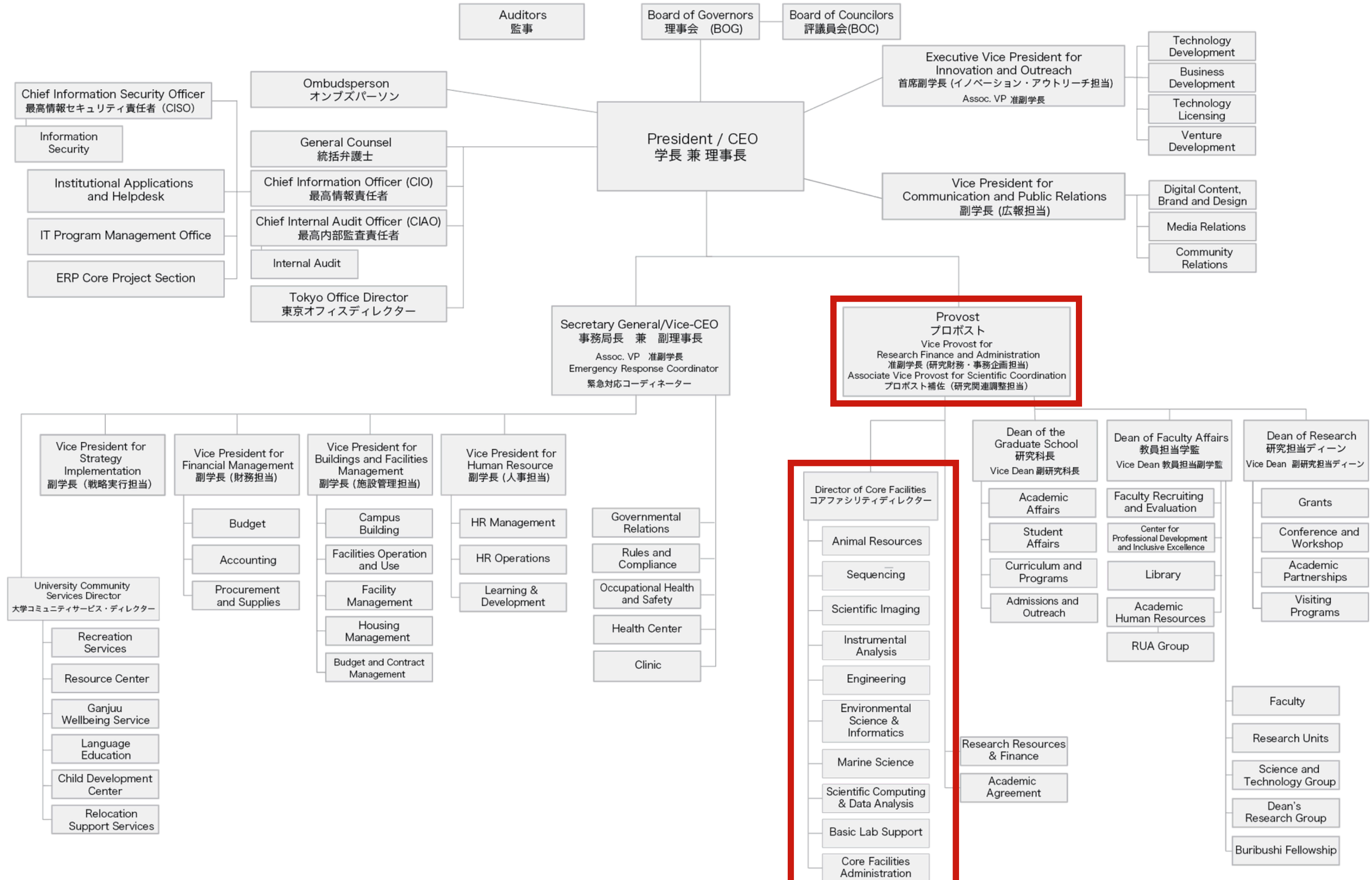
© Pavel Puchenkov



OIST School Corporation Organization

学校法人沖縄科学技術大学院大学学園組織図

As of January 1, 2025



Core Facilities





Provost
Amy Shen



Director of Core Facilities
Kieran Deasy



Deputy Director
Nana Arakaki



Deputy Director
Eddy Taillefer

Core Facilities Admin Support



Hidenari Matsugawa



Kyoko Yasutomi



Basic Lab Support
Young-Ho Yoon





Sequencing Section
Nana Arakaki





Animal Resources Section
Chen Chi Wang





Scientific Imaging Section
Toshiaki Mochizuki





Marine and Terrestrial Science Section
Shannon McMahon





Instrumental Analysis Section
Kazuo Yamauchi





Scientific Computing & Data Analysis Section
Eddy Taillefer





Engineering Section
Patrick Kennedy





Core Facilities

Scientific Computing & Data Analysis (SCDA)

We provide large capacity and secure computing resources, consulting, training and support to OIST researchers

Current Services

- High-performance computing and large-capacity data storage for research use
- Scientific data visualization
- Scientific software - Centrally licensed software; open source actively supported
- Support and documentation - Open Hours, one-on-one consultations, training
- Manage the campus data network and maintain effective and secure integration of researcher environment with the computing and storage systems

Our Compute System

- Linux-based large-scale high performance clusters
- High-end computing GPU, accelerator and other architecture-specific systems
- Scalable high-capacity secure tiered research storage systems
- Remote desktop and VDI systems for data analysis and visualization
- On premise and cloud systems for special research requirements



Core Facilities



Scientific Computing & Data Analysis (SCDA)

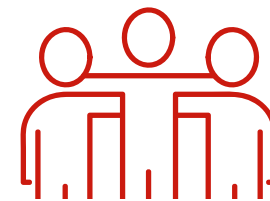
We provide large capacity and secure computing resources, consulting, training and support to OIST researchers

Research Computing Support

- Training and Seminars
- Open Hours (HPC & Bioinfo.)
- One-on-One Support
- HPC documentation
- etc.

HPC and Computing Resources

- Resource management & monitoring
- User support
- Research project assistance
- etc.



SCDA Team

Research Cloud

- Research HPC integration
- Saas, PaaS and IaaS
- End-to-End hosting services
- etc.

Software

- Software procurement
- Site or campus-wide licensing
- User training and workshop
- Centralized end-user support
- etc.

Scientific Services

- Scientific Data visualization
- Web-based systems
- Data acquisition and analysis
- Training & Seminars
- etc.

Campus Network

- Design and deployment
- Operation and monitoring
- Maintenance and support
- etc.



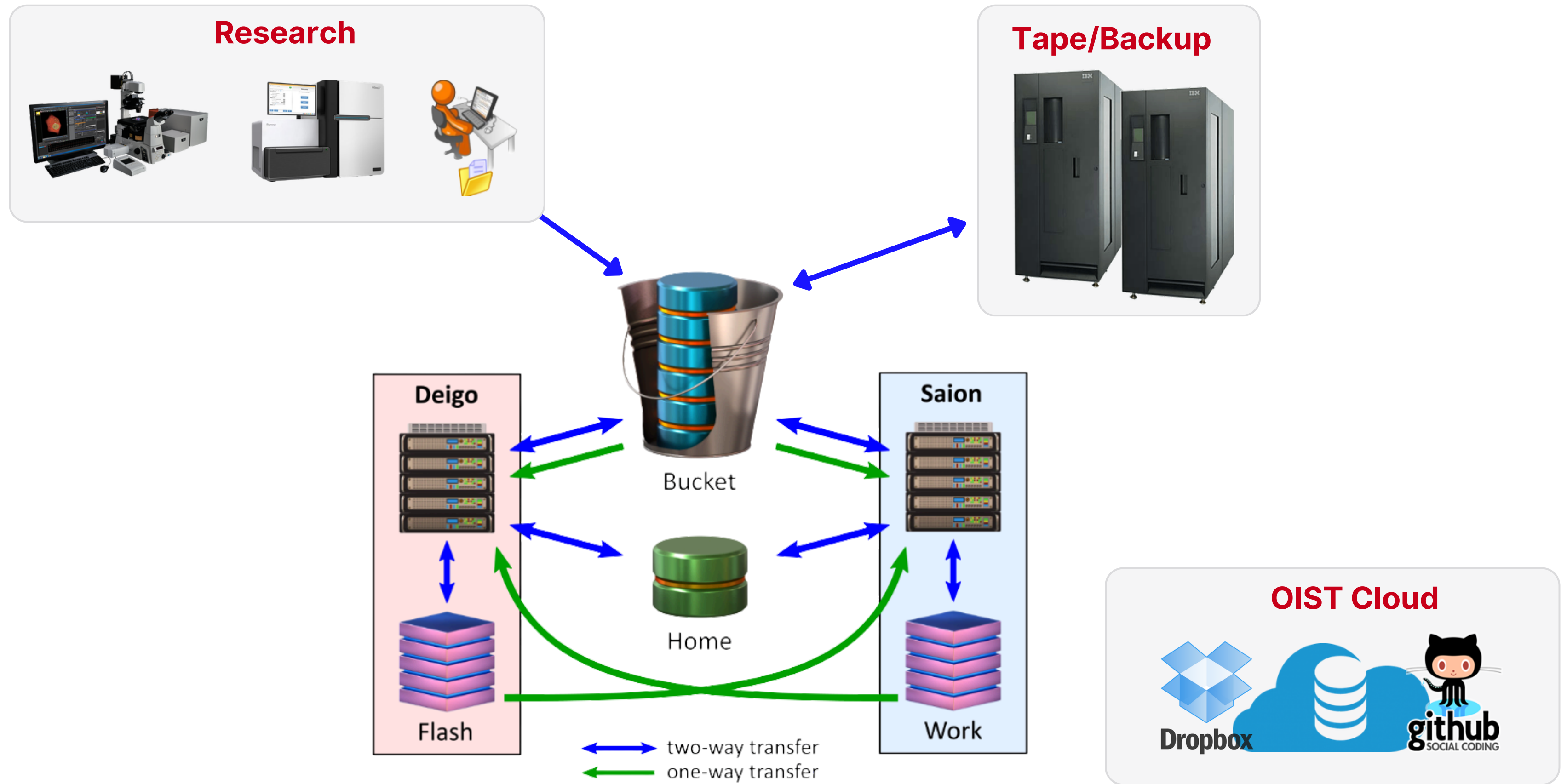


What is HPC?

- High performance computing : is the practice of **aggregating computing power** to deliver much **higher performance** than one could obtain from a typical desktop computer.
- Intensively used to solve **large problems** in science, engineering, or business
- Consists of **parallel storage** and **computers interconnected** using a high-speed network
- At OIST, HPC and research storage are managed by the **Scientific Computing and Data Analysis Section**

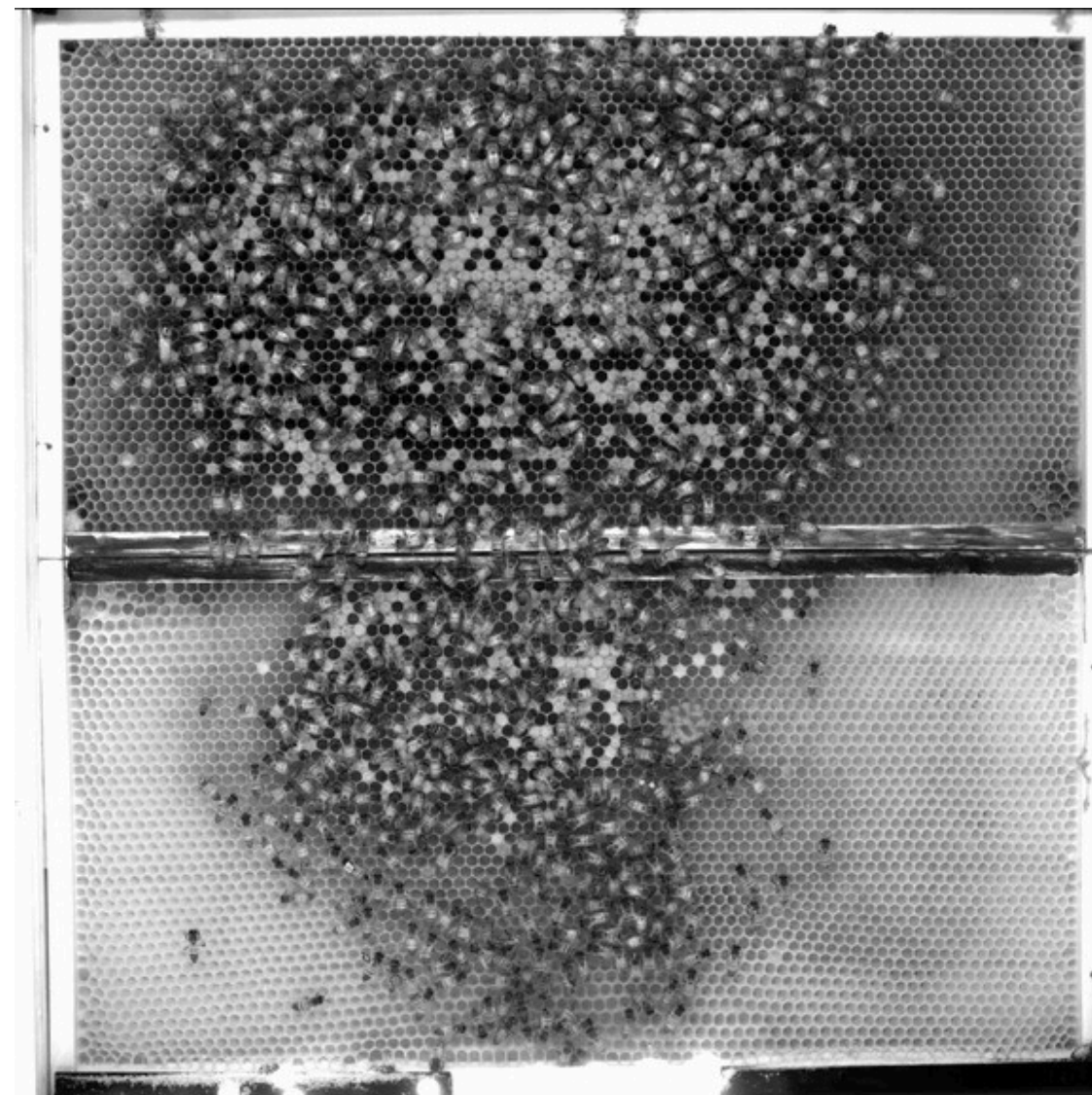


Scientific Computing & Data Analysis (SCDA)





Detection and tracking of individual bees in a hive



“Towards dense object tracking in a 2D honeybee hive” Katarzyna Bozek, et al. In arXiv:1812.11797v1

Simulations of violent expiratory events

M. E. ROSTI *et al.*

PHYSICAL REVIEW RESEARCH 3, 013091 (2021)

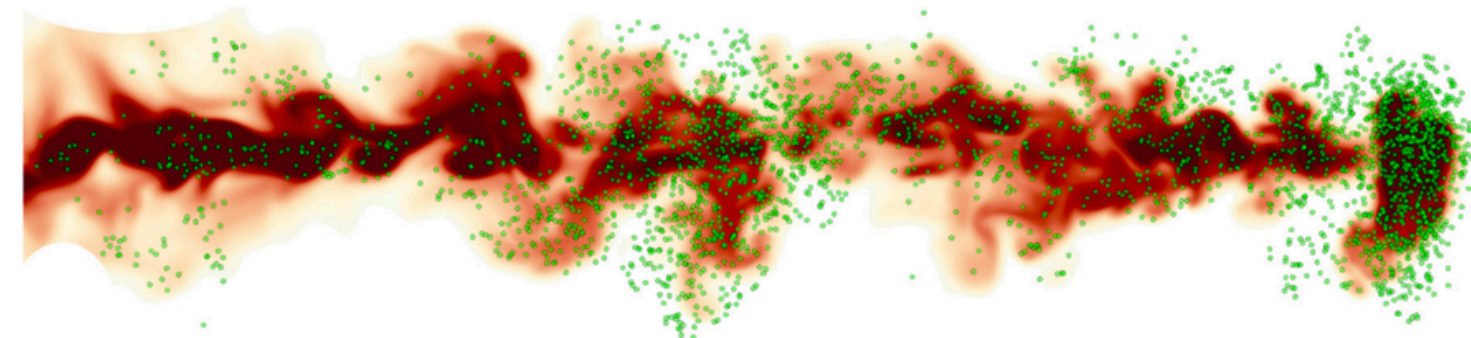


FIG. 1. Snapshot of the expiratory event 7.6 s after start coughing obtained from our numerical simulations. Different colors represent different values of the humidity field ranging between the 99% of the ambient humidity RH_a (red areas) and RH_a (white areas). Green bullets (shown not in scale) identify the position of the airborne droplets, initialized with the sizes taken from Ref. [11]. The streamwise extension of the puff at this time is 2.6 m.

“Turbulence role in the fate of virus-containing droplets in violent expiratory events”

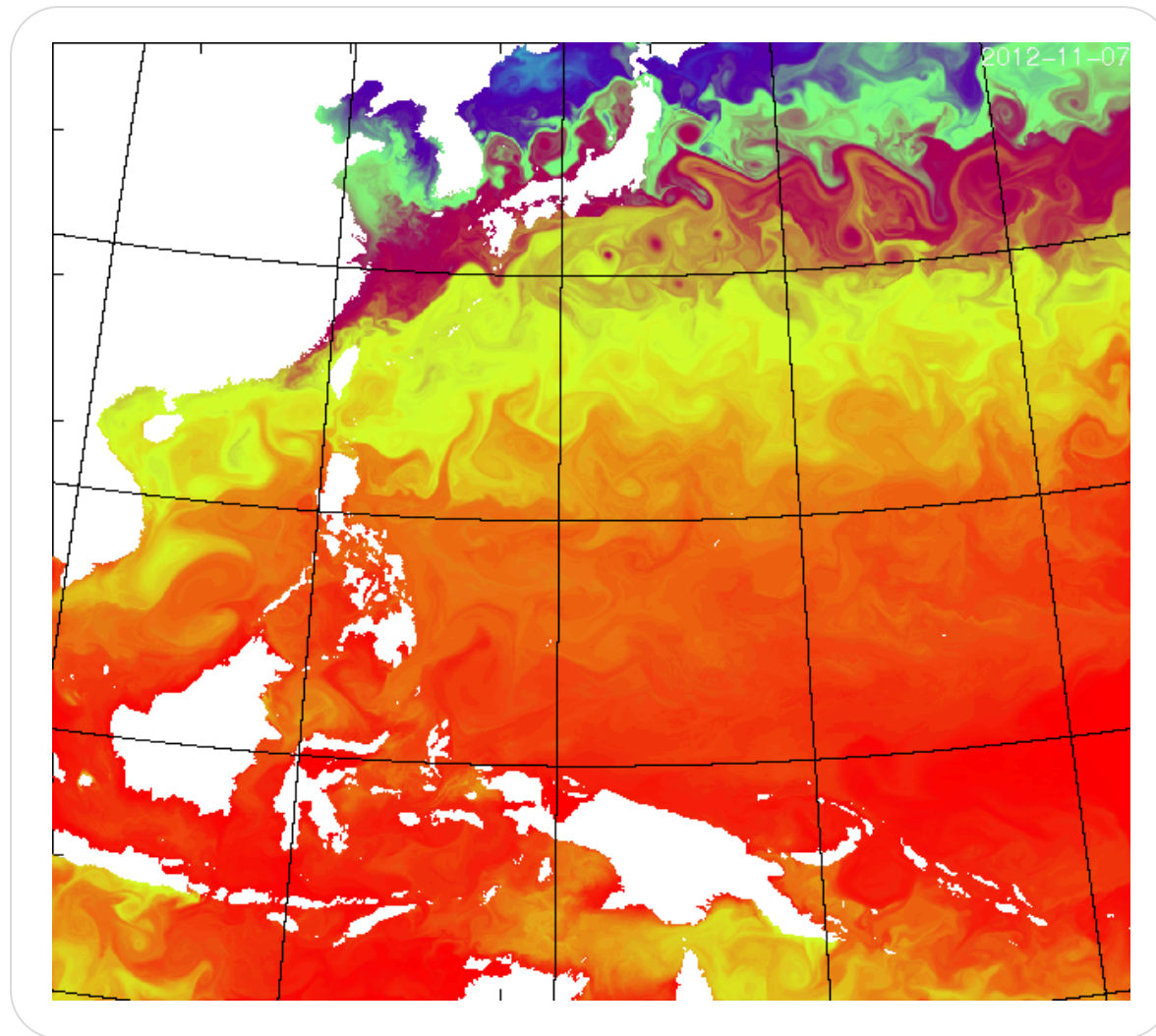
M. E. Rosti, M. Cavaola, S. Olivieri, A. Seminara, and A. Mazzino

Phys. Rev. Research 3, 013091 – Published 29 January 2021





Simulations of Ocean Currents in Marine Science



Marine Biophysics Unit

Simulate ocean currents to learn the patterns of objects like eggs floating in Okinawa's coral reefs and oceans flow through the ocean.

The sea area is divided into 960 subareas, and the computations for each sub-area are allotted to a compute core for parallel processing.

Furthermore, by sharing information like water temperature between each of the nodes, the next flow can be predicted

Need help?

Email us anytime, or drop by Open Hours

ASK-SCDA@OIST.JP



SCDA OPEN HOURS

DAILY OPEN HOURS

Every weekday
15:30 - 17:30
Lab 2, Room B648
Next to IT Section

BIOINFORMATICS OPEN HOURS

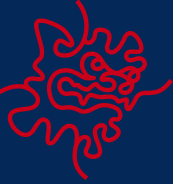
Tuesdays & Thursdays
10:00 - 12:00
Lab 2, Room B648
Next to IT Section



Visit our documentation page
SCDA-GUIDE.OIST.JP

Submit a ticket
ASK-SCDA@OIST.JP





Centralized Software Services

Understanding Centralized Software at OIST

- Institutional Procurement
- User Access Priority
- Lifecycle Guidelines

TRAINING
WEEK by **SCDA**



September 28th – October 2nd





Centrally Managed Scientific Software

<https://scda-answers.oist.jp/books/software-and-services>



- What is Centralized Software -

Centrally Managed Scientific Software

Software used by OIST researchers and students to support their research activities. Licenses are managed centrally by SCDA to meet the OIST's academic and scientific needs.

Key Benefit

- **Less Administrative Burden:** Provides access to software without requiring individual units to manage separate budgets, procurement processes, or software licenses.
- **Cost Efficiency:** Centralizing procurement maximizes OIST's procurement power and vendor negotiation leverage.
- **Technical Optimization:** Enables SCDA to evaluate and ensure software compatibility with OIST's HPC environment prior to deployment.

We strongly recommend to use open-source software



Centrally Managed Scientific Software

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- Funding and Availability ① -

Funding

- Software purchased by SCDA is OIST prerational expense and it will be subject to the audit by the Japanese Board of Audit.
- We have not charged the license fee to the individual unit **so far**.

Availability

- SCDA provides 31 desktop software (as of September 2026)
- OIST researchers and students have access to all of the centrally managed software.
- The site licensed software can be provided to OIST-hosted workshops. (Matlab – OCNC)



Centrally Managed Scientific Software

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- Funding and Availability ② -

License Type

- **Site license** : allows us to install and run a software across an entire campus without paying per individual device or user.
e.g. Matlab, Mathematica, EndNote
- **Network/Floating license** : A shared licensing model where **a fixed number of concurrent** users can run the software simultaneously on a first-come, first-served basis. SCDA manages the onsite license server. Requires a connection to the OIST internal network (or VPN) to run the application.
e.g. COMSOL, SOLIDWORKS, Imaris, etc.
- **Subscription/standalone license** : A license assigned specifically to a user or tied to one computer. It cannot be shared with or used by other people simultaneously.
e.g. GraphPad Prism, ChemDraw, **ArcGIS**, etc.



Centrally Managed Scientific Software

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- Service Lifecycle & Decommissioning Policy -

Requesting New Software

When there is sufficient demand for a software title, SCDA will evaluate it for centralization based on the following conditions:

- **Sponsorship:** The request must be submitted or sponsored by a faculty member.
- **Institutional Need:** The software is used by multiple users across multiple units.
- **License Model:** Either a site license or a network (concurrent) license is available from the vendor.
- **Financial Viability:** Centralizing the license makes financial sense and is cost-effective for OIST.

Service Decommissioning

To ensure efficient use of university resources, centralized software license undergo regular reviews.



Centrally Managed Scientific Software

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- Newly Purchased & Decommissioning Service -



New

Dragonfly - image processing, data analysis, and visualization tool.

<https://scda-answers.oist.jp/books/software-and-services/page/dragonfly>.

No Updates

- Amira – v2025.1
- IBM SPSS – v31
- SigmaPlot – v16

Decommissioning

- Geneious Prime – August 2026
- Slack - December 2026
- GraphPad Prism – April 2027



Unit Managed Software



- SCDA Service to Individual Unit -

License Server Hosting

If your unit purchases software license that can be shared internally, SCDA can host and maintain a dedicated license server for you.

Assist License Transfer

Some software licenses cannot be transferred across external institutions. SCDA can assist with transferring these assets internally between OIST research units.

e.g. VASP

Please contact us for any software inquiry – we are here to help you!



ask-scda@oist.jp

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Next Co-working:

October 21st

Cafe private room (C102)

13:00-17:30



MONTHLY OPEN ***co-working*** **SPACE**

BY THE BIOINFORMATICS USER GROUP - OPEN TO ALL

Come join us for our monthly co-working sessions!

Whether you're stuck on a bioinfo. problem and need a second pair of eyes, want to contribute to our Bioinfo User Group, or just need a space to get work done, bring your laptop and join in

No agenda, no sign-ups, no presentations required. Just time and space to get work done in company with others!

Questions?

Email: ask-scda@oist.jp

Webpage: scda-guide.oist.jp

In-person: Daily Open Hours & Bioinformatics Open Hours



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