Japanese HPCI Open Call

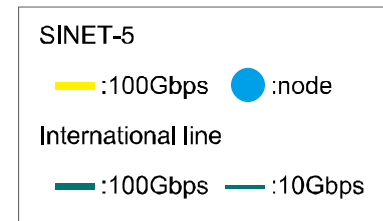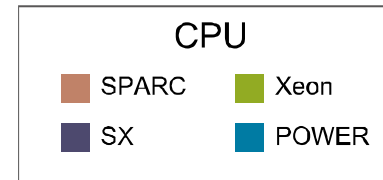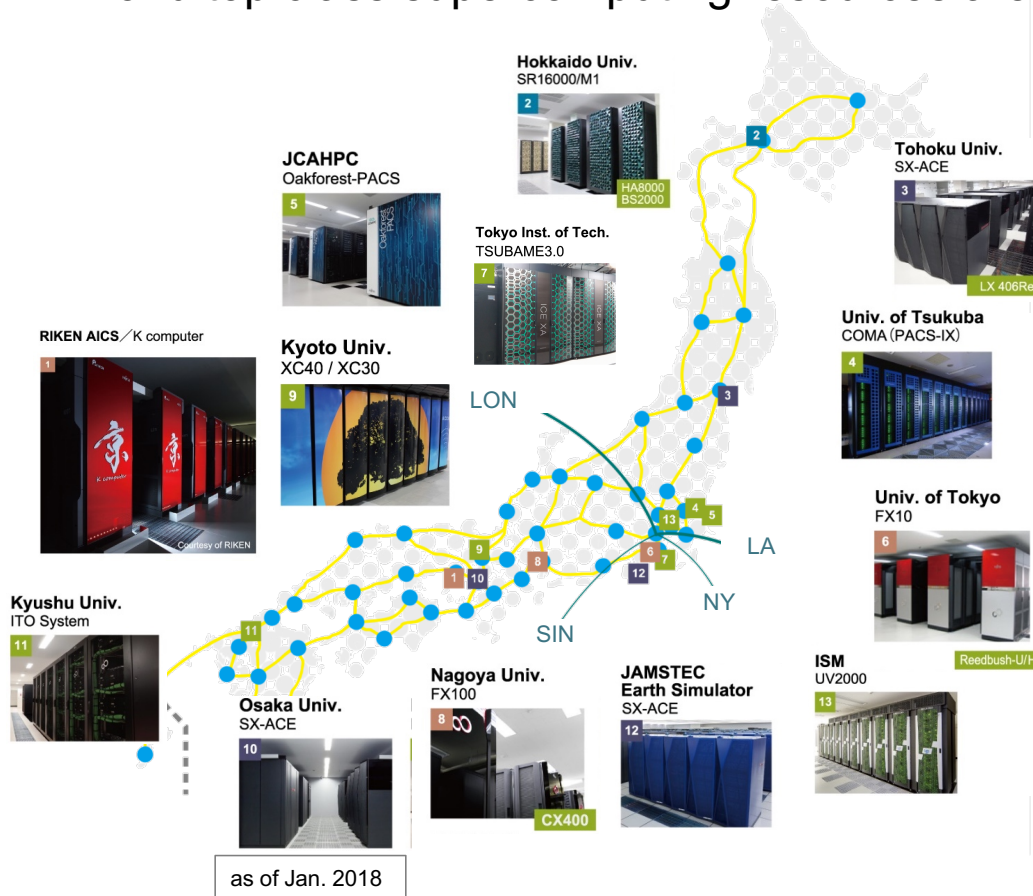*- HPCI : High Performance Computing Infrastructure -*

Motoi Okuda

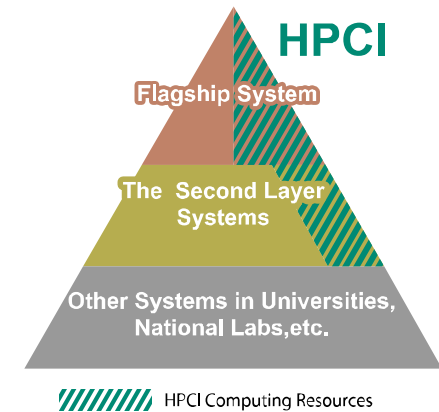*Research Organization for Information Science & Technology*

What is *HPCI* ?

- World top class supercomputing resources are open to the world wide HPC communities

Hokkaido Univ.
SR16000/M1

JCAHPC
Oakforest-PACS

Tokyo Inst. of Tech.
TSUBAME3.0

Tohoku Univ.
SX-ACE

RIKEN AICS／K computer

Kyoto Univ.
XC40 / XC30

Univ. of Tsukuba
COMA (PACS-IX)

Univ. of Tokyo
FX10

Kyushu Univ.
ITO System

Osaka Univ.
SX-ACE

Nagoya Univ.
FX100

JAMSTEC
Earth Simulator
SX-ACE

ISM
UV2000

LON
LA
NY
SIN

as of Jan. 2018

CPU

| SPARC | Xeon |
| SX | POWER |

SINET-5

— :100Gbps ● :node

International line

— :100Gbps — :10Gbps

Computing Resources Allocated for Public Call in FY 2017

K computer
   ~4 Pflops x Yr
Others in total
   ~5.6 Pflops x Yr

HPCI

Flagship System

The Second Layer Systems

Other Systems in Universities, National Labs,etc.

///// HPCI Computing Resources

JCAHPC : Joint Center for Advanced High Performance Computing
ISM : The Institute of Statistical Mathematics
JAMSTEC: Japan Agency for Marine-Earth Science and Technology

What is *HPCI* ? (cont.)

■ In **HPCI**, variety of supercomputer resources are provided **w/o charge**

Nov. 2017 Ranking

HPL	HPCG		Site	Computers（architectures）
10	1	1	RIKEN AICS	*K computer*（SPARC64VIIIfx）
		2	Hokkaido Univ.	*SR16000/M1*（POWER7）
		3	Tohoku Univ.	*SX-ACE*（NEC） *LX406Re-2*（Xeon E5-2695v2）
		4	Univ. of Tsukuba	*COMA*（Xeon E5-2670v2+Xeon Phi 7110P）
9	6	5	JCAHPC	*Oakforest-PACS*（Xeon Phi 7250）
157	37	6	Univ. of Tokyo	*FX10*（SPARC64IXfx） *Reedbush-U/H*（Xeon E5-2695v4/+Tesla P100）
13	10	7	Tokyo inst. Of Tech.	*TSUBAME3.0*（Xeon E5-2680v4+Tesla P100）
43	21	8	Nagoya Univ.	*FX100*（SPARC64XIfx） *CX400*（Xeon E5-2697v3,Xeon E5-2697v2+Xeon Phi 3120P）
41		9	Kyoto Univ.	*Cray XC40*（Xeon Phi 7250） *Cray XC30*（Xeon E5-2670v2+Xeon Phi 5120D）
		10	Osaka Univ.	*SX-ACE*（NEC） *VCC*（Xeon E5-2670v2+Tesla K20）
		11	Kyushu Univ.	*ITO Subsystem A*（Xeon skylake） *ITO Subsystem B*（Xeon skylake+Tesla P100）
	36	12	JAMSTEC	*SX-ACE*（NEC/EARTH SIMULATOR）
		13	ISM	*UV2000*（Xeon E5-4650v2）

As of January 2018

CPU

- SPARC
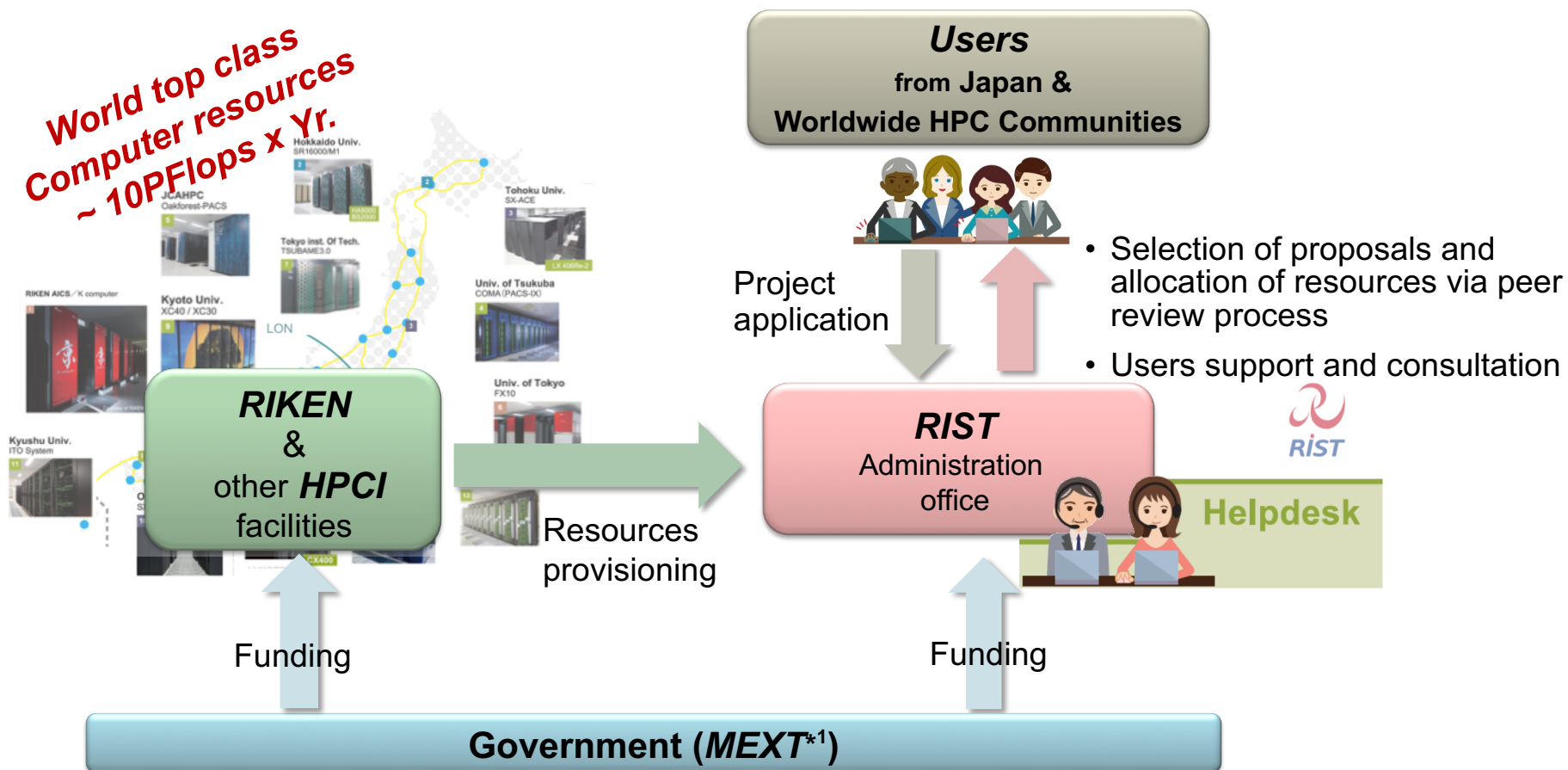- Xeon/GPU/Phi
- SX
- POWER

Nov. 2017 Ranking

n TOP500   n HPCG

JCAHPC ： Joint Center for Advanced High Performance Computing
ISM ： The Institute of Statistical Mathematics
JAMSTEC: Japan Agency for Marine-Earth Science and Technology

HPCI Outline Framework

World top class Computer resources ~ 10PFlops x Yr.

Users
**from Japan &
Worldwide HPC Communities**

RIKEN
&
other *HPCI*
facilities

Project
application

Resources
provisioning

RIST
Administration
office

Helpdesk

• Selection of proposals and
allocation of resources via peer
review process

• Users support and consultation

Funding
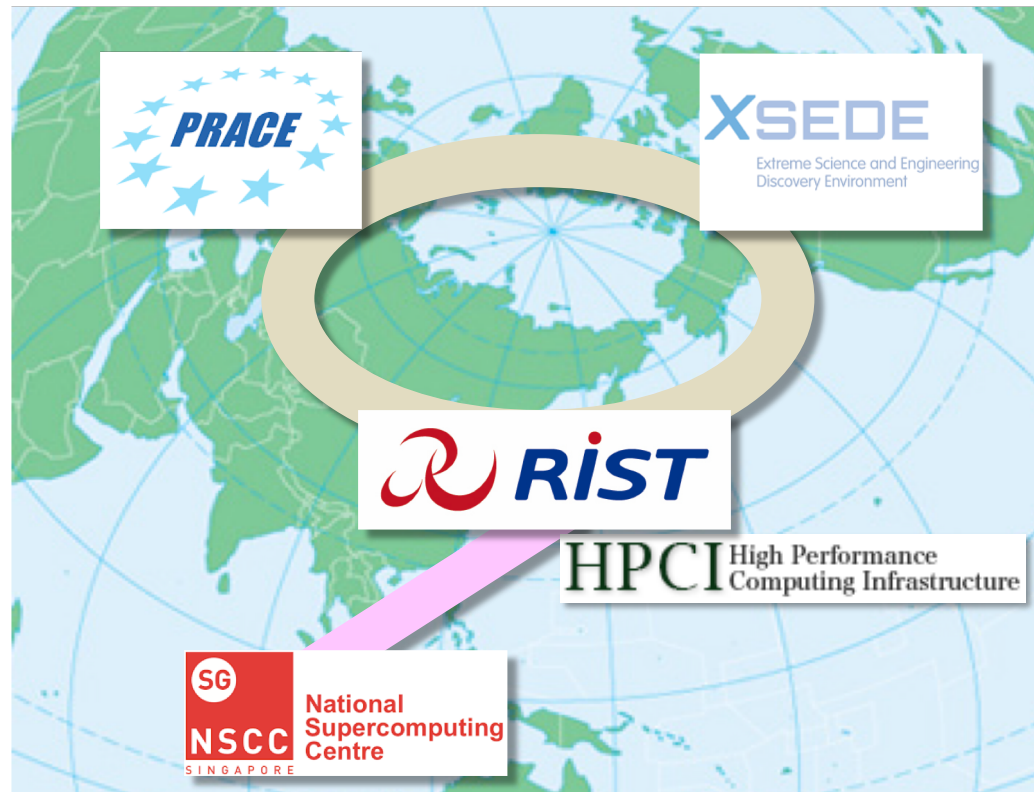
Funding

Government (*MEXT*[*1])

*1 : Ministry of Education, Culture, Sports, Science and Technology,

Global Partnership

- Based on MoUs with **PRACE**, **XSEDE**, and **NSCC**, **RIST** is promoting partnership between global HPC communities as the national supercomputing resource administration organization

Project Categories and Calls for Proposals

Categories		K	Others
General projects	General Use	✔ (twice a year)	✔ (once a year)
	General Trial Use	✔ (year-round)	---
	Projects supported by competitive funding from public sectors (usage fee is charged)	✔ (year-round)	---
Junior Researcher Promotion Project		✔ (twice a year)	---
Industrial Use projects	Non-proprietary Use	✔ (twice a year)	✔ (once a year)
	Industrial Trial Use	✔ (year-round)	(depend on each provider)
	Proprietary Use (usage fee is charged)	✔ (year-round)	(depend on each provider)

: Projects selected at regular calls

: Projects selected at calls open year-round

Note: In case of persons who belong to foreign companies, proposals must be submitted jointly with project representatives who belong to corporations registered in Japan.

Projects Selected at Regular Calls in FY2018 (Period A)

■ Statistics of submitted & selected proposals

<table>
<tr><th></th><th></th><th>Submitted</th><th>Awarded</th><th>Ratio</th></tr>
<tr><td rowspan="4"><i>K computer*1</i></td><td>General Use</td><td>34(47)</td><td>17(19)</td><td>50(40)%</td></tr>
<tr><td>Junior Researcher Promotion</td><td>12(16)</td><td>6(9)</td><td>50(56)%</td></tr>
<tr><td>Industrial (non-proprietary)</td><td>25(29)</td><td>12(17)</td><td>48(59)%</td></tr>
<tr><td>Total</td><td>71(92)</td><td>35(45)</td><td>49(49)%</td></tr>
<tr><td rowspan="3">Other <i>HPCI</i> system</td><td>General Use</td><td>101(118)*</td><td>60(61)</td><td>59(52)%</td></tr>
<tr><td>Industrial (non-proprietary)</td><td>11(19)*</td><td>6(8)</td><td>55(42)%</td></tr>
<tr><td>Total</td><td>112(137)</td><td>66(69)</td><td>59(50)%</td></tr>
</table>

Numbers in parentheses indicate those for FY 2017 (period A)

* Includes
- proposals which requested only "Other *HPCI* system"
- proposals which requested "Other *HPCI* system" as "the concurrent use with *K computer*" and were accepted with *K computer*,
- proposals which requested "Other *HPCI* system" as "the second choice of *K computer*" but were rejected with *K computer*.

Resource Allocation and Research Areas (FY2017)
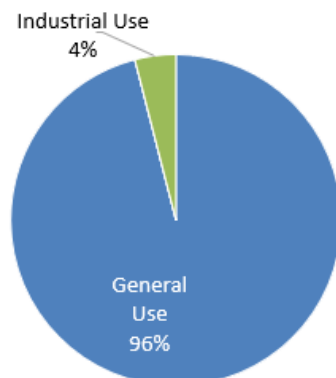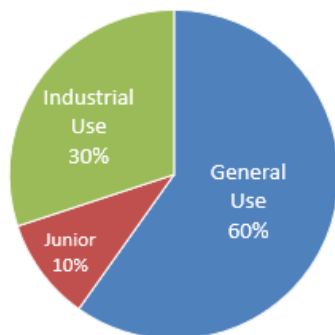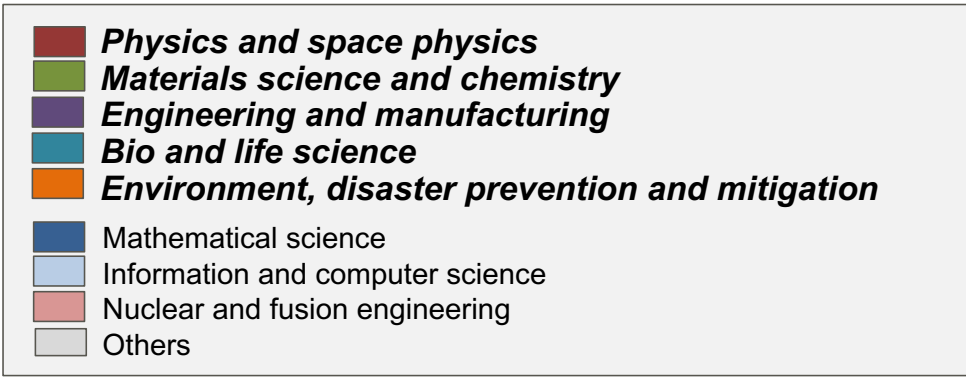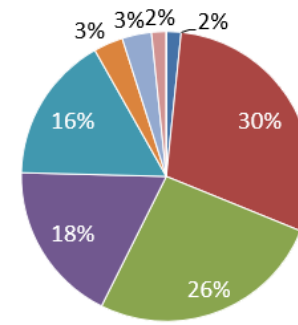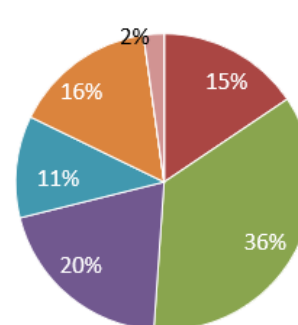
User Support : Key issue in *HPCI* utilization
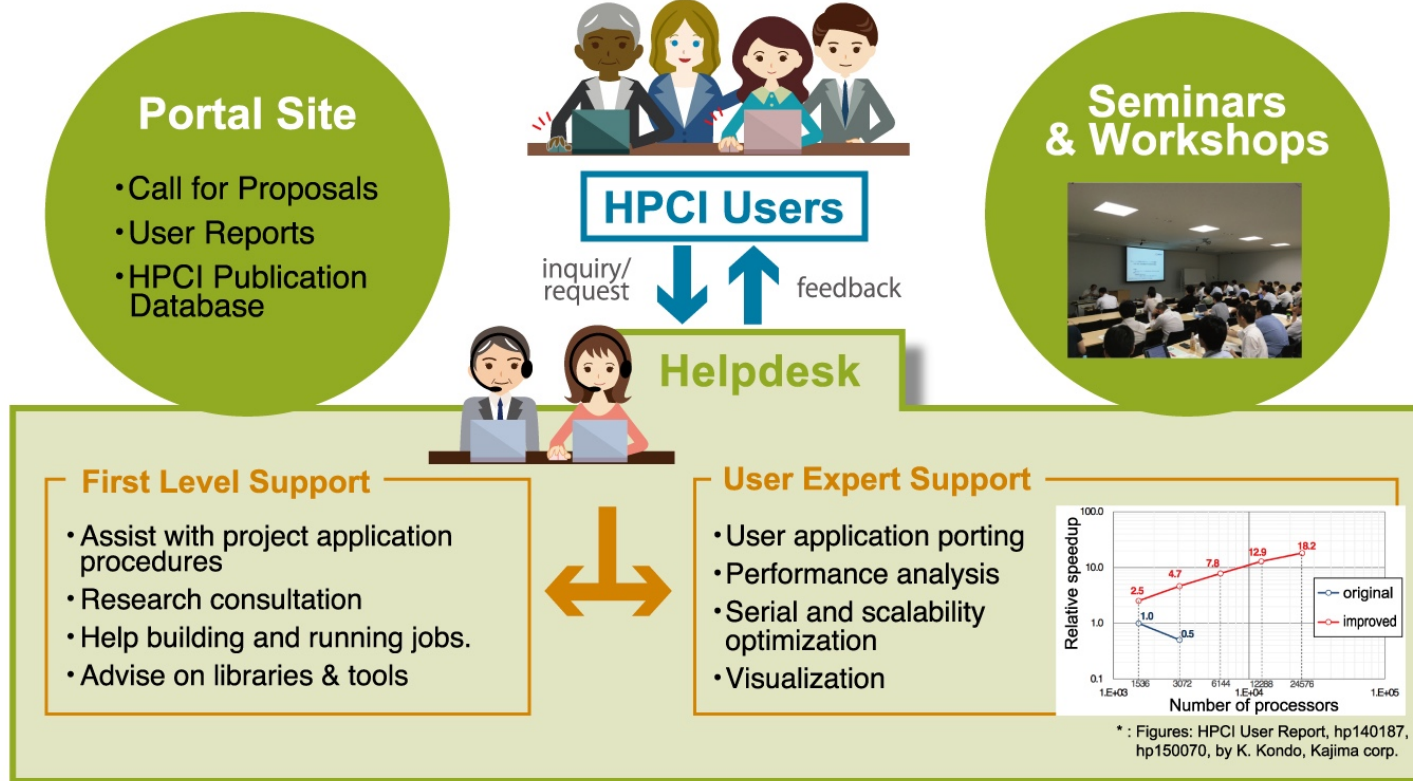

■ RIST provides a variety of user services with Helpdesk as the general contact point for users.

Portal Site
- Call for Proposals
- User Reports
- HPCI Publication Database

HPCI Users

inquiry/request ⬇ ⬆ feedback

Seminars & Workshops

Helpdesk

First Level Support
- Assist with project application procedures
- Research consultation
- Help building and running jobs.
- Advise on libraries & tools

User Expert Support
- User application porting
- Performance analysis
- Serial and scalability optimization
- Visualization

* : Figures: HPCI User Report, hp140187, hp150070, by K. Kondo, Kajima corp.

E-MAIL helpdesk@hpc-office.jp   URL http://www.hpc-office.jp/pages/e _support

Project Categories and Calls for Proposals

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Projects selected at regular calls

Projects selected at calls open year-round

Note: In case of persons who belong to foreign companies, proposals must be submitted jointly with project representatives who belong to corporations registered in Japan.

Trial Use of *HPCI*

■ Best fit for *HPCI* first touch overseas users

◆ Year around call timing

◆ Max. 50,000 nodes-hours

◆ Half year duration

◆ Only user report is mandatory

For more information,
Please join
RIKEN & RIST booth !
or
Visit HPCI portal site
http://www.hpci-office.jp/folders/english

K computer TRIAL USE

Call for proposals of General Trial Use projects for K computer

Call for proposals of the General Trial Use program is open to applicants who seek to drive scientific innovation using K computer. The program is targeted towards projects aiming to validate their codes and to prepare for full-fledged usage of K computer. This call is also open to overseas academic societies. Proposals are accepted throughout the year and being screened on a quarterly basis.

◆ Resources: 50,000 node-hours per project
◆ Duration: Up to 6 months
◆ User fee: None
◆ Screening of proposals and notification of the results:
The project selection takes place quarterly, screening proposals made by the end of Feb., May, Aug., and Nov. Awarding results will be shortly notified (within about a couple of weeks).
◆ Reporting Requirements:
Projects should submit User Report within 60 days after the project completion. It will be published on the HPCI portal site. Publication of the research achievements to peer-reviewed journals is not required.
◆ Eligibility: Project Representatives have no experiences to use K computer.

For more details, visit HPCI portal site (http://www.hpci-office.jp/folders/english) or contact Helpdesk.

HELPDESK
TEL +81-78-940-5795 (9am-5:30pm JST, Mon. to Fri.) / FAX +81-78-304-4959
E-MAIL helpdesk@hpci-office.jp
URL http://www.hpci-office.jp/pages/e_helpdesk

RIST Research Organization for Information Science and Technology