PRACE - European HPC Research Infrastructure

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PRACE Peer Review Director

Partnership for Advanced Computing in Europe

➢ PRACE is an international not-for-profit association under Belgian law, with its seat in Brussels

➢ PRACE counts 24 members and 2 observers

➢ The PRACE Tier-0 Hosting Members are France, Germany, Italy, Spain, and Switzerland

➢ PRACE is governed by the PRACE Council in which each member has a seat. PRACE is managed by the Board of Directors

➢ PRACE is funded by its members, as well as through a series of implementation projects supported by the European Commission
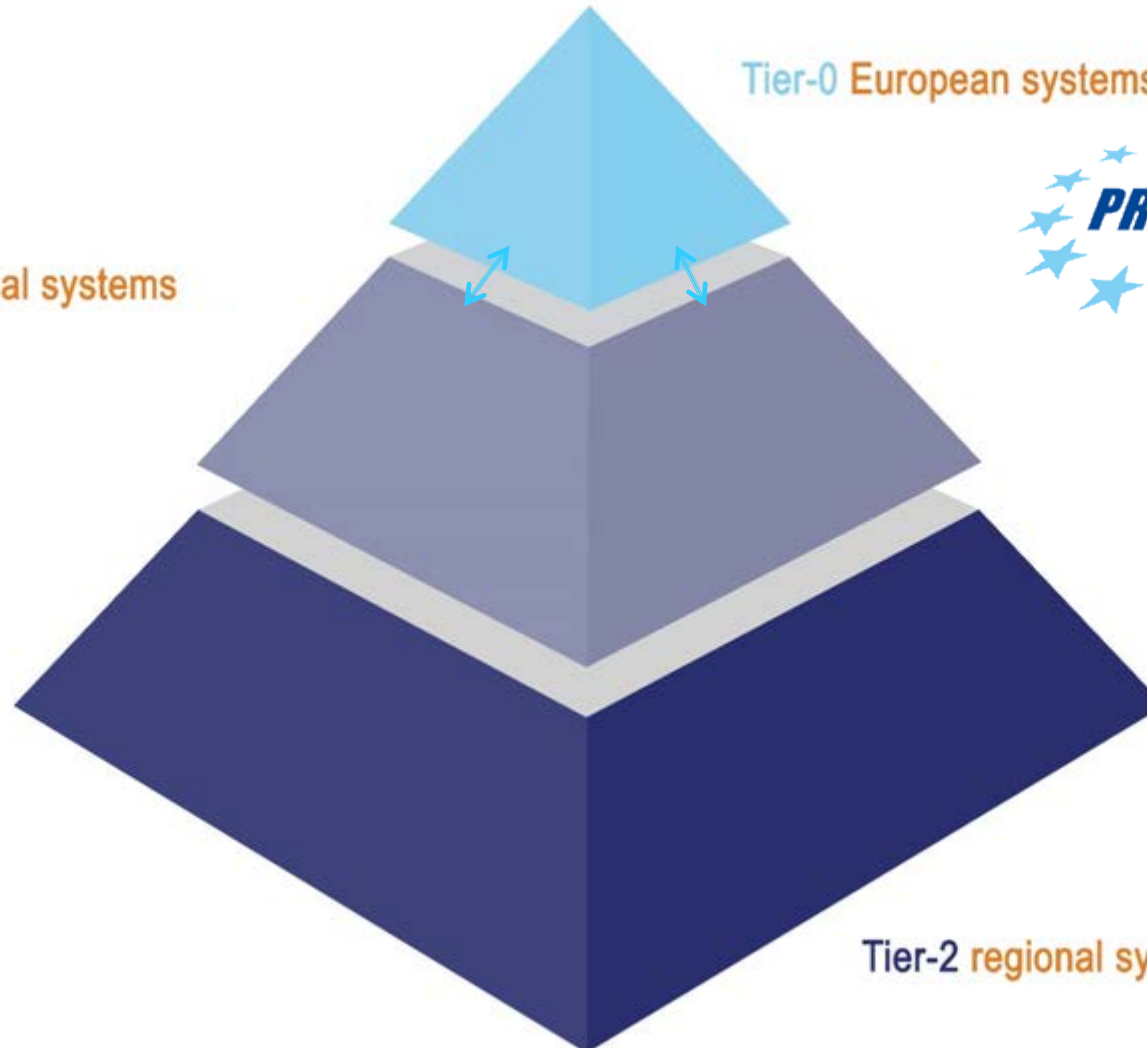
HPC ecosystem

Tier-0 European systems

Tier-1 national systems

Tier-2 regional systems

RED ESPAÑOLA DE
SUPERCOMPUTACIÓN

PRACE HPC services

PRACE aims at providing Tier-0 capacity, capability and architectural diversity. PRACE also coordinates a fraction of the Tier-1 ecosystem

- **Scope:** open research projects from academy and industry, free at the point of usage

- Tier-0 (large scale) Projects Access

- Tier-0 Support programs

- Support to SMEs

- Tier-1 for Tier-0 support program

- Tier-1 Projects Access (DECI)

- Training to HPC users

Criterion: Scientific Excellence

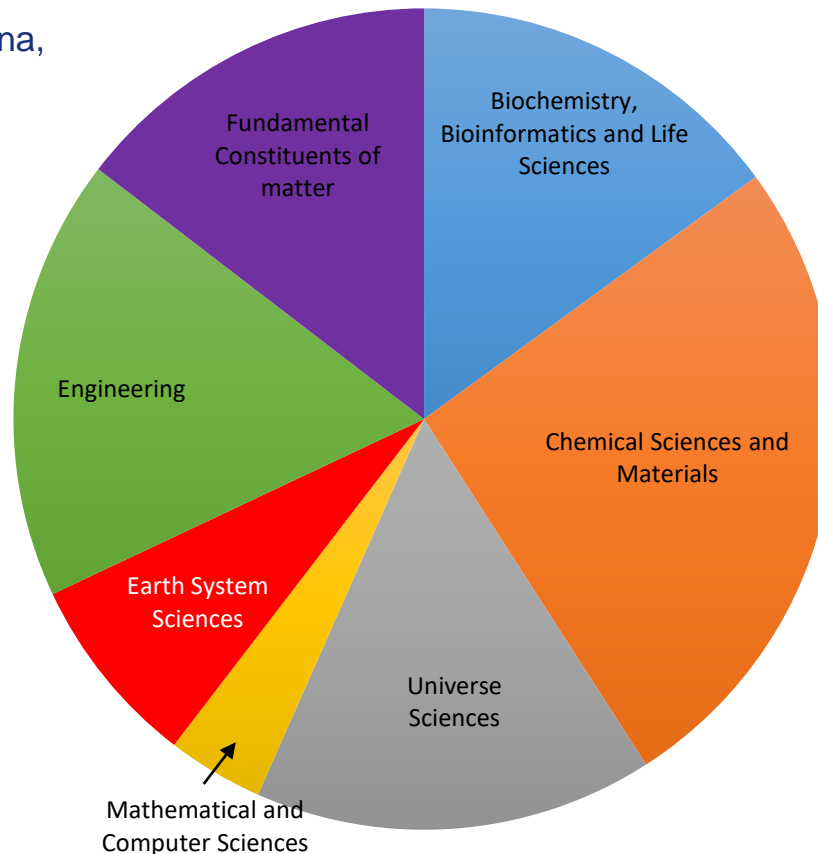# 5 Hosting Members offering HPC resources on 7 world-class machines

MareNostrum:
IBM
BSC, Barcelona, Spain

CURIE: Bull
Bullx
GENCI/CEA, Bruyères-le-Châtel, France

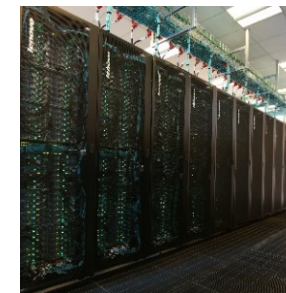**Piz Daint:** Cray XC50 system, CSCS, Lugano, Switzerland

JUQUEEN: IBM BlueGene/Q,GAUSS/ FZJ, Jülich, Germany

SuperMUC: IBM GAUSS/LRZ Garching, Germany

Hazel Hen: Cray GAUSS/HLRS, Stuttgart, Germany

MARCONI: Lenovo CINECA, Bologna, Italy

Pie chart segments:
- Biochemistry, Bioinformatics and Life Sciences
- Chemical Sciences and Materials
- Universe Sciences
- Mathematical and Computer Sciences
- Earth System Sciences
- Engineering
- Fundamental Constituents of matter

PRACE Achievements to-date

✓ **570** scientific projects enabled

✓ **16 thousand million** core hours awarded since 2010

✓ Open R&D access for industrial users with **>60** companies supported

✓ **>10 000** people trained by 6 PRACE Advanced Training Centers and others events

✓ **>70** Petaflops of peak performance on **7** world-class systems

Tier-0 trans-national scope

Percentage of projects (blue) and resources (orange) awarded to trans-national projects

Legend: Foreign projects/total — Resources in foreign projects/total
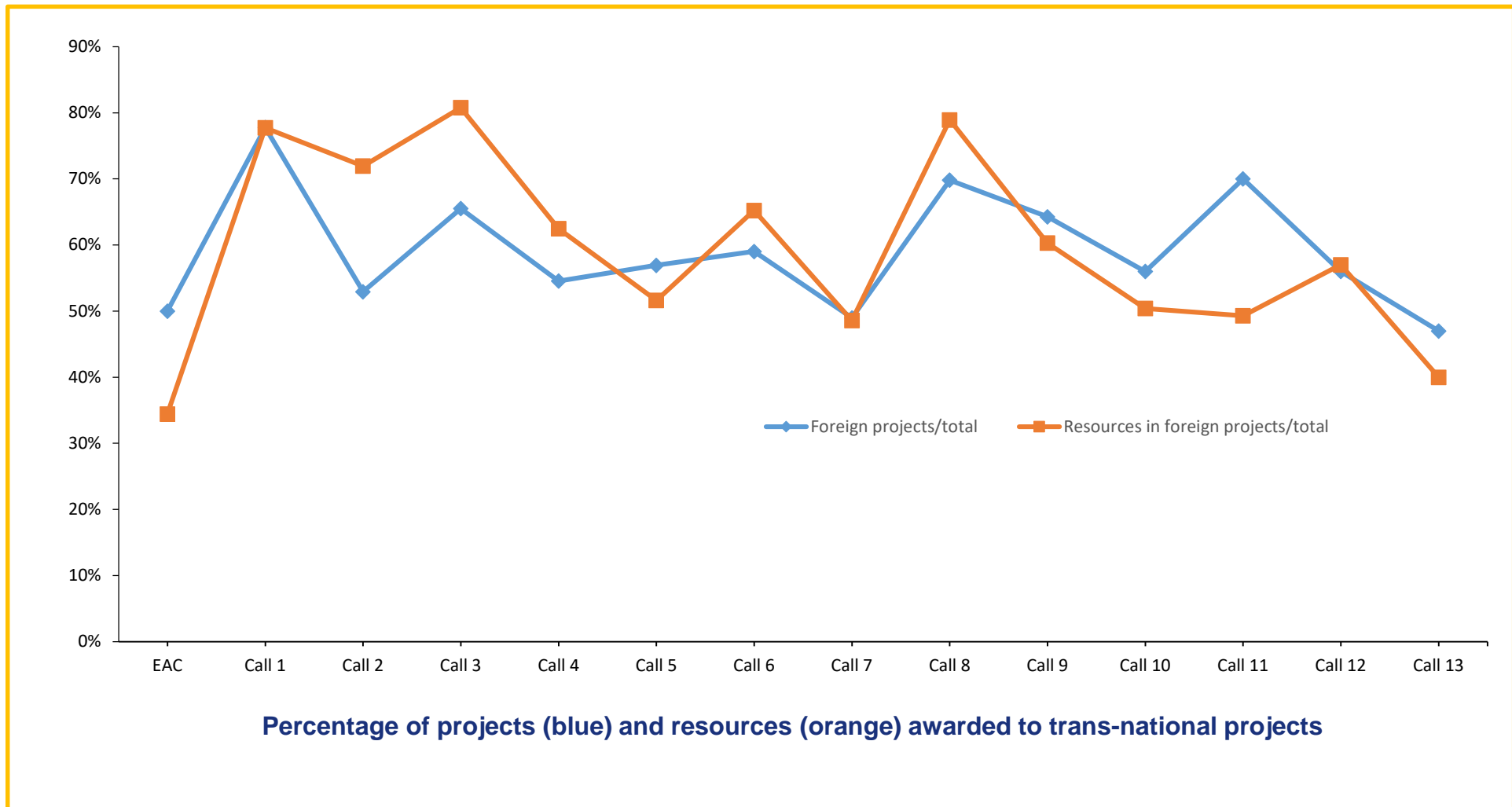
PRACE Training and Outreach activities

provide a sustained, high-quality training and education service for the European HPC community

PRACE Advanced Training Centres

PRACE training events: Seasonal Schools, International HPC Summer School, **On-demand training events**

Summer of HPC (programme for undergraduate and postgraduate students)

PRACE Training and Events portal

Code Vault, Massive Open Online Courses (MOOCs)

Training topics

Different levels of training
- Basic, intermediate, advanced

High performance computing
- Parallel programming
- Accelerators
- Performance optimization

Domain-specific topics
- Simulation software
- Visualization
- Data intensive computing

Tier-0 systems in PRACE

➢ Each PRACE Tier-0 system has a **capability** comparable to a system of 5,000 nodes, each of them with two CPUs of the latest generation at procurement time

➢ Each PRACE Hosting member contributes a **capacity** of 40% of the resources corresponding to one Tier-0 system

➢ With 5 Hosting Members, PRACE is offering a capacity equivalent to a dedicated system of 10,000 nodes. This corresponds to approximately 4 thousand million core hours per year
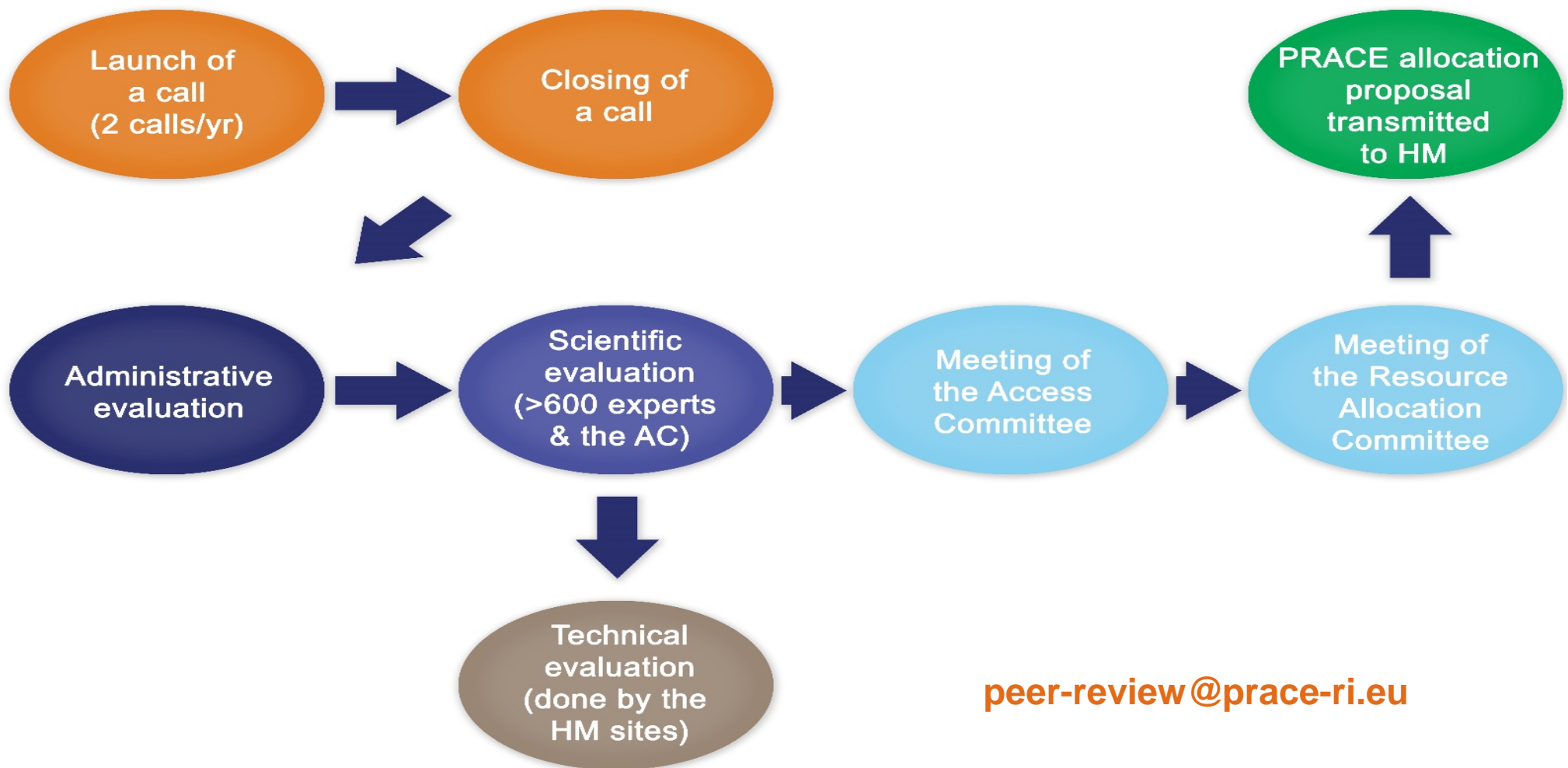
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PRACE 16th Call for Project Access

Opening date: **26/09/2017**

Closing date: **21/11/2017, 10:00 CET**

Applicants' reply to scientific reviews: **January 2018**

Communication of allocation decision: **End of March 2018**

Allocation period for awarded proposals: **03/04/2018 – 31/03/2019**

Type of Access

**Project Access
and
Multi-Year Project Access**

PRACE 16th Call for Project Access

System	Architecture	Site (Country)	Core Hours (node hours)	Minimum request
Curie and its successor Irene - SKL	Bull Bullx cluster / Bull Sequana (starting service in 2H 2018)	GENCI@CEA (FR)	128 million (3.9 million)	15 million core hours
Irene - KNL	BULL Sequana (starting service in 2H 2018)	GENCI@CEA (FR)	57 million (0.8 million)	15 million core hours
Hazel Hen	Cray XC40 System	GCS@HLRS (DE)	70 million (2.9 million)	35 million core hours
Juqueen successor	Multicore cluster	GCS@JSC (DE)	70 million (tbd)	35 million core hours
Marconi-Broadwell	Lenovo System	CINECA (IT)	36 million (1 million)	15 million core hours
Marconi-KNL	Lenovo System	CINECA (IT)	442 million (6.5 million)	30 million core hours
MareNostrum	Lenovo System	BSC (ES)	475 million (10 million)	15 million core hours
Piz Daint	Cray XC50 System	CSCS (CH)	510 million (7.5 million)	68 million core hours Use of GPUs
SuperMUC	IBM System X iDataplex/ Lenovo NextScale	GCS@LRZ (DE)	105 million (6.6 million)	35 million core hours

PRACE Peer Review

Launch of a call (2 calls/yr) → Closing of a call

Administrative evaluation → Scientific evaluation (>600 experts & the AC) → Meeting of the Access Committee → Meeting of the Resource Allocation Committee → PRACE allocation proposal transmitted to HM

Technical evaluation (done by the HM sites)

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THANK YOU FOR YOUR ATTENTION

www.prace-ri.eu