



**Barcelona
Supercomputing
Center**

Centro Nacional de Supercomputación

The acquisition and operation of the EuroHPC supercomputer is funded jointly by the EuroHPC Joint Undertaking, through the European Union's Connecting Europe Facility and the Horizon 2020 research and innovation programme, as well as the Participating States Spain, Portugal and Türkiye

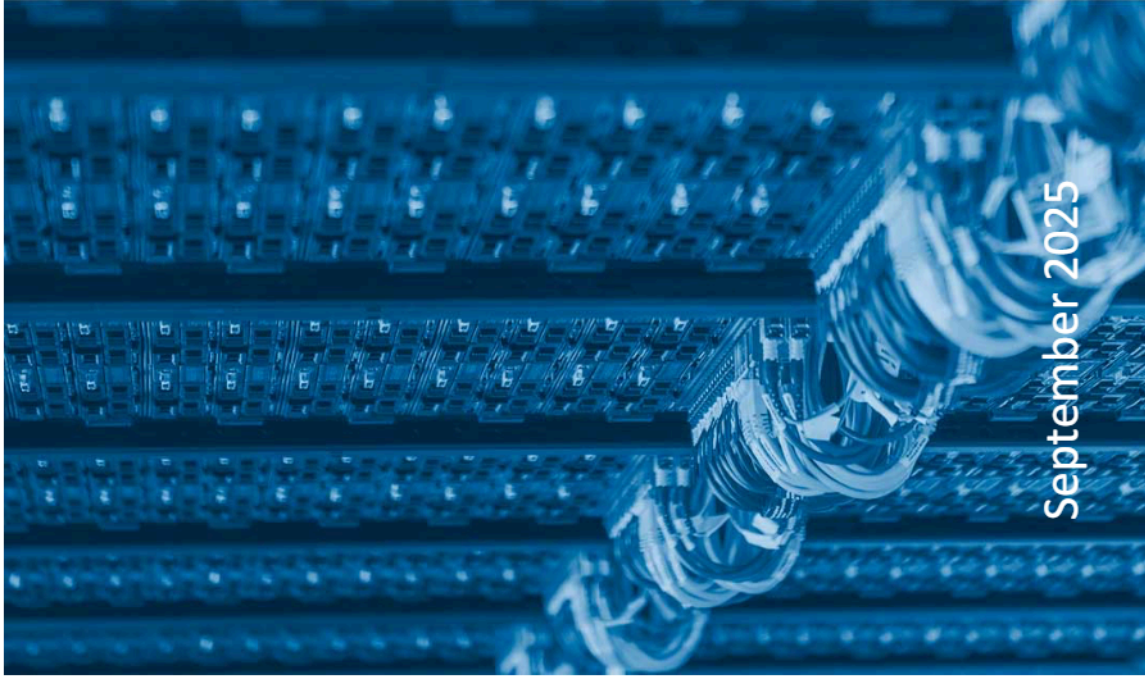


Hosting Consortium:



UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH





September 2025



**Barcelona
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Centro Nacional de Supercomputación



EXCELENCIA
SEVERO
OCHOA



MareNostrum 1 to 5 and BSC Datacenters

Dr. Sergi Girona
Operations Director



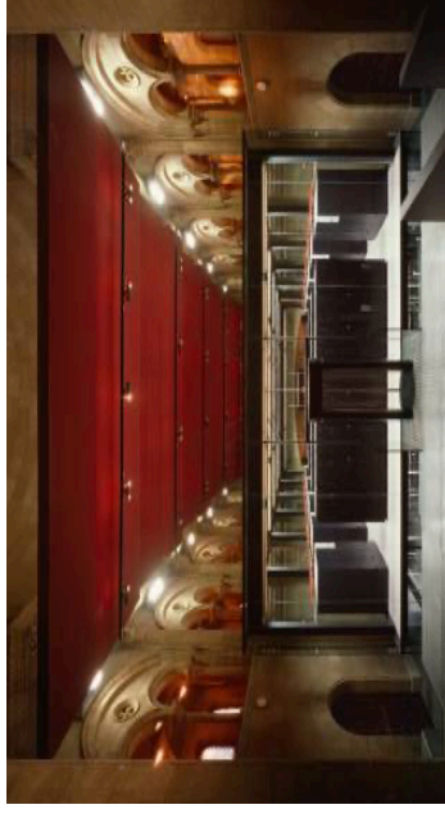
CARLA 2025







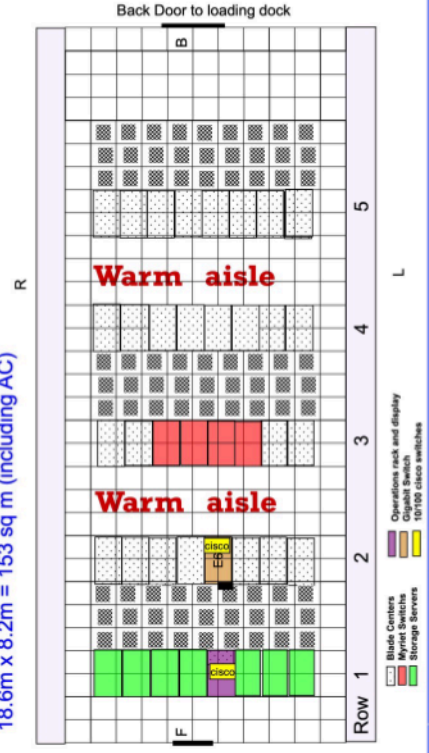
Chapel from MareNostrum 1 to MareNostrum Ona



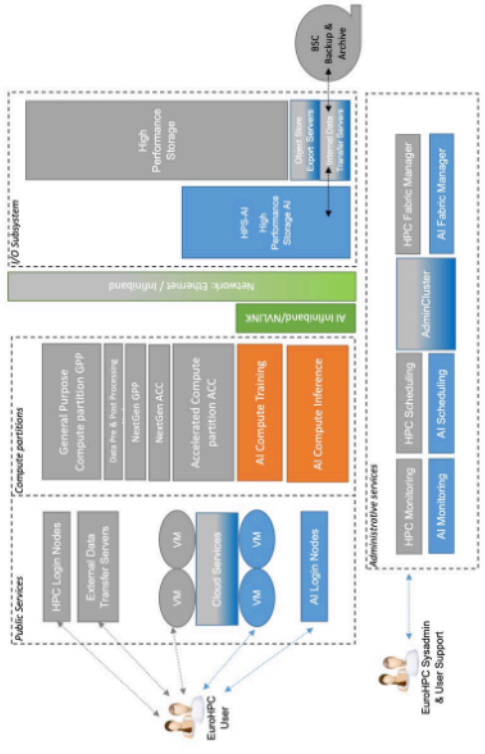
MareNostrum 1 to MareNostrum 5 + AI Factory

Mare Nostrum Scaled Floor Plan v14

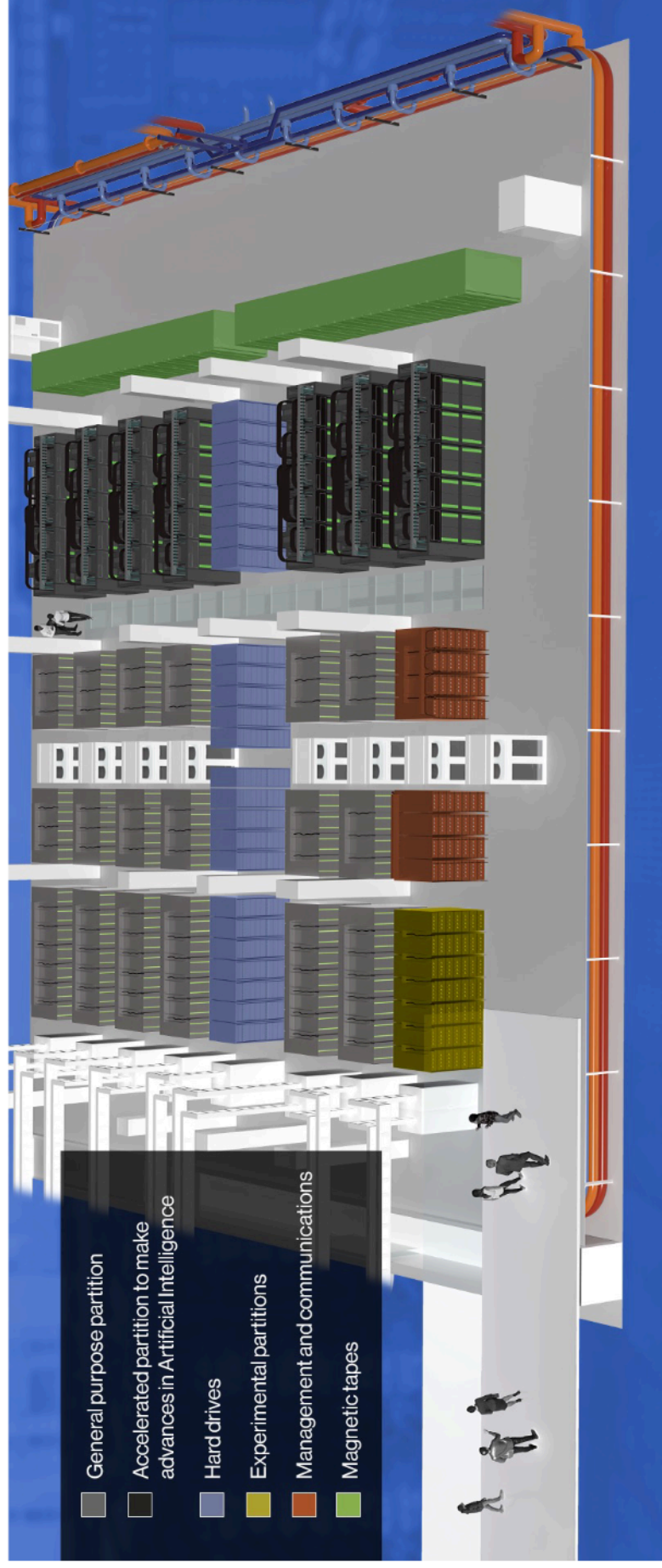
Notes:
 - 80cm room border to contain 10 Leibert AC units
 - 1350 racks are 64cm x 110cm. 8 flush is 5.12m
 31 x 11 tiles (60cm x 60cm)
 18.6m x 6.6m = 123 sq m
 18.6m x 8.2m = 153 sq m (including AC)



MareNostrum 5, with AI partition

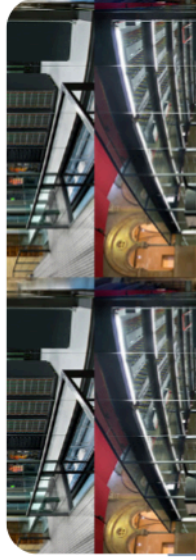


MareNostrum5

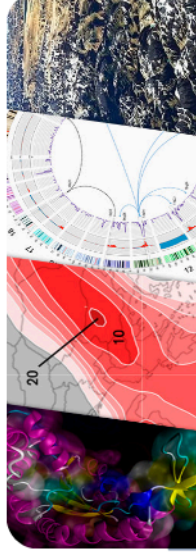


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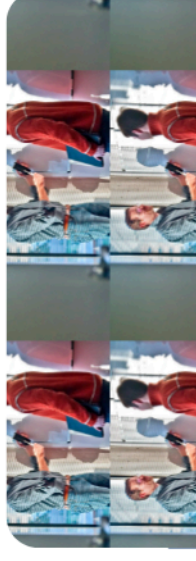
BSC-CNS objectives



Supercomputing services
to Spanish and EU researchers



R&D in Computer, Life, Earth and
Engineering Sciences



PhD programme, technology
transfer, public engagement



BSC in numbers



Mission of BSC Scientific Departments



To influence the way machines are built, programmed and used: programming models, performance tools, Big Data, Artificial Intelligence, computer architecture, energy efficiency



To develop and implement global and regional state-of-the-art models for short-term air quality forecast and long-term climate applications



To understand living organisms by means of theoretical and computational methods (molecular modeling, genomics, proteomics)



To develop scientific and engineering software to efficiently exploit super-computing capabilities (biomedical, geophysics, atmospheric, energy, social and economic simulations)

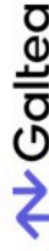
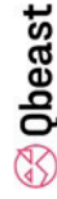
BSC'S Spin Offs Portfolio

14
Spin Offs Created

+40M€
Capital Raised

+40
Technologies transferred

+380
Jobs Created



Summary Education and Training at BSC

Engagement with the University	Training at European Level
➤ BSC PhD Program with specific training (currently 109 PhD Students) ➤ European Master for High Performance Computing (EUMaster4HPC) ➤ MSc in HPC and MSc in AI (FIB-UPC) ➤ MSc in Bioinformatics applied to Personalised Medicine and Health (ISCIII) ➤ MSc in Meteorology (UB) and MSc in Renewable Energy and Sustainability (UNIBA) ➤ BSc in Data Science (FIB-UPC) ➤ BSc in Bioinformatics (UPC/UPF/UAB/UB) ➤ Doctoral Program Affiliation with Catalan Universities and EU training networks ➤ University stakeholders in EVITA and AI Factory projects	➤ BSC Training Center (17 courses currently offered with over 3169 attendees up to date) ➤ EuroHPC Virtual Training Academy (EVITA) coordinator, developing a European competence and qualification framework in HPC ➤ CASTIEL (Coordination and Support for National Competence Centres on a European Level) ➤ EuroNCC (National Competence Centres in the framework of EuroHPC) ➤ PUMPS+AI (Programming and Tuning Massively Parallel Systems + AI) Summer School (15th edition) ➤ ACM Europe Summer School on HPC Computer Architectures for AI and Dedicated Applications (5th edition) ➤ GPU Center of Excellence courses (over 1450 CUDA attendees in 2011-21) ➤ CoEs (CHEESE, PerMedCoE, CompBioMed, BioExcel)
In Projects	Leveraging BSC E&T program
➤ EVITA, AI Factory, ETP4HPC, Montblanc, BigStorage, HBP, HiPEAC, BioInfo4Women, EPEEC... ➤ Education Research & development (RISC, ITNs, AGAUR, COFUND Marie Skłodowska-Curie Actions (STARS), HPB, ELIXIR CONVERGE ...) ➤ RES workshops and meetings (for researchers, technicians and scientists, over 1000 attendees)	➤ Mobility Program (225 mobility grants since 2013 up to date) ➤ Doctoral Symposium 2014 to 2024 with an average of 100 attendees ➤ Research Seminars (376 seminars since 2013-up to date) ➤ Tutorials, Schools, Training workshops, Industry training, MOOC ➤ Skills Development Programme ➤ Post-doctoral training programs (average of 65 postdoc per year)

Spanish Supercomputing Network (RES), since 2006



HPC and data management resources for the scientific community

- 14 institutions (+2 new nodes pending)
 - 16 supercomputers
 - 9 data management centres
- +320 PFlop/s combined capacity
- +180 PB storage in 2022 (and growing)
- +1.500 million CPU hours/year 2024
- +1.000 regular users
- +200 scientific papers annually
- 3 HPC/AI calls per year
- 1 Data call per year
- Continuous call for AI small access
- Applications Support Teams
- Member of Spanish Unique Scientific and Technical Infrastructure network (ICTS)
- Access Committee and Users Committee
- EuroHPC National Competence Centre
- Coordinated by **BSC-CNS**





RISC2

2020 - 2023

16 PARTNERS



CeNAT | Cinvestav | COPPETEC Fundacao Coordenação de Projetos, Pesquisas e Estudos Tecnológicos do Rio de Janeiro | Laboratório Nacional de Computação Científica (LNCC) | Universidad de Buenos Aires | Universidad de Chile | Universidad Industrial de Santander (UIS) | Universidad de la República (Udelar) |

Atos | Barcelona Supercomputing Center (BSC-CNS) | Ciemat | CINECA | INESCITEC | Inria | Jülich | Universidade de Coimbra |

EXPECTED IMPACTS

Develop a realistic HPC research cooperation **roadmap** with clearly identified application areas, hardware/system requirements and funding schemes.

Set up a sustainable **network** focusing on activities to support and promote the coordination of the research and industrial communities using HPC and the policymakers from both regions.

Improve sharing of information and expertise to solve common societal problems with the use of HPC, reflected in **Joint Action Plans**.



EuroHPC: towards European HPC technologies



EuroHPC-Ju members:

Austria, Belgium, Bulgaria,
Croatia, Cyprus, Czechia,
Denmark, Estonia, Finland,
France, Germany, Greece,
Hungary, Iceland, Ireland, Israel,
Italy, Latvia, Lithuania,
Luxembourg, Malta, Montenegro,
Netherlands, North Macedonia,
Norway, Poland, Portugal,
Romania, Serbia, Slovakia,
Slovenia, Spain, Sweden, Türkiye
and United Kingdom



“A new legal and funding structure – the EuroHPC Joint Undertaking – shall acquire, build and deploy across Europe a world-class High-Performance Computing (HPC) infrastructure.

It will also support a research and innovation programme to develop the technologies and machines (hardware) as well as the applications (software) that would run on these supercomputers.”



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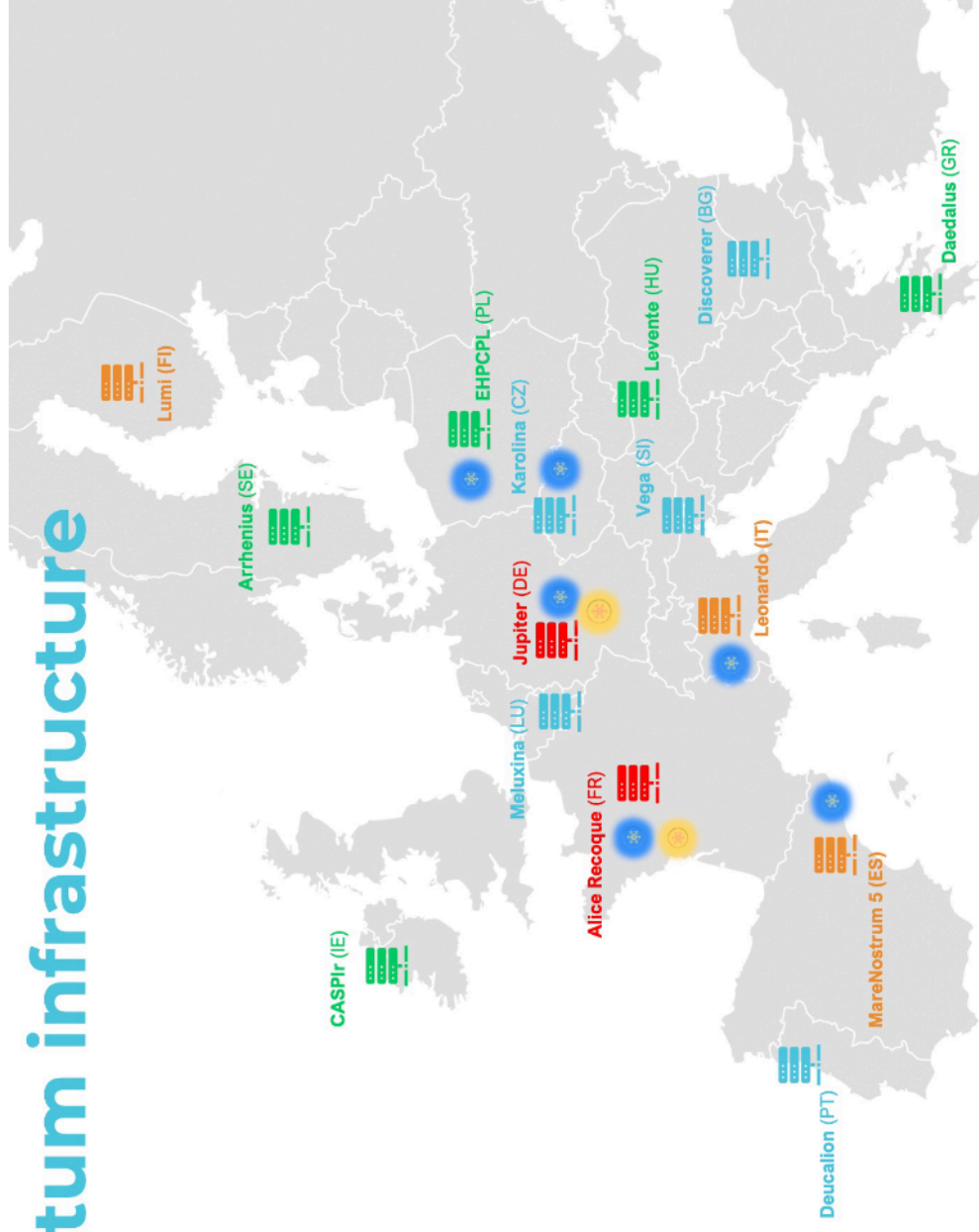


EuroHPC
Joint Undertaking

February 2020

HPC – Quantum infrastructure

2024 - 2025



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EuroHPC
Joint Undertaking




Shaping Europe's digital future

[Home](#) > [News & Views](#) > Second wave of AI Factories set to drive EU-wide innovation

PRESS RELEASE | Publication 12 March 2025

Second wave of AI Factories set to drive EU-wide innovation

The European High Performance Computing Joint Undertaking (EuroHPC JU) has selected six additional Artificial Intelligence (AI) Factories in the EU.

- **13 AI Factories** across 17 Member States and two EuroHPC Participating States
- **Nine new AI-optimised supercomputers** and one upgrade
- Overall investments in supercomputing infrastructures and AI Factories in the EU will reach **EUR 10 billion** over 2021-2027
- AIFs will be **interconnected** and establish a collaborative framework for effective networking



MareNostrum 5

Total peak performance: 315.2 Pflops

General Purpose Partition: 46.4 Pflops (29-04-2024)

Accelerated Partition: 260 Pflops (29-04-2024)

Next Generation GPP: 2.82 Pflops (03-2025)

Next Generation ACC: 6 Pflops (12-2025)



MareNostrum 1
2004 – 42.3 Tflops
1st Europe / 4th World
New technologies



MareNostrum 2
2006 – 94.2 Tflops
1st Europe / 5th World
New technologies



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MareNostrum 3
2012 – 1.1 Pflops
12th Europe / 36th World

MareNostrum 4
2017 – 11.1 Pflops
2nd Europe / 13th World
New technologies



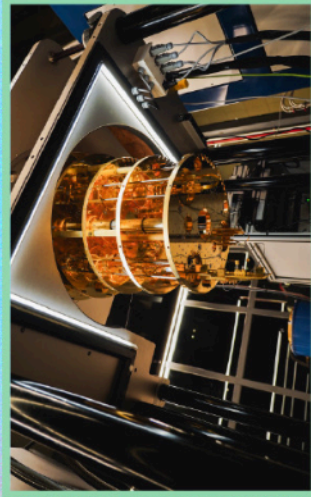
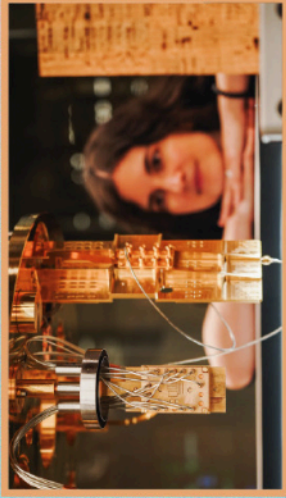
MareNostrum 5
2022
260 + 46.4 Pflops
8th and 19th World
3rd and 7th Europe



UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional

MareNostrum 5 - ONA

The Quantum partition



European Commission | Shaping Europe's digital future

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MN1 – MN2 – MN3 – MN4 – MN5

		MN1 (2004)	Ratio	MN2 (2006)	Ratio	MN3 (2012)	Ratio	MN4 (2017)	Ratio	MN5 (2024)
Compute	Cores/chip	1	x2	2	x4	8	x3	24	x2,3	56
	Chip/node	2		2		2		2		2
	Cores/node	2	x2	4	x4	16	x3	48	x2,3	112
	Nodes	2406	+154	2560	+468	3028	+428	3456	x1,875	6480
	Cores	4812	x2	10240	x4,73	48448	x3,42	165888	x4,375	725760
Performance	Racks	29	x1,03	31	x1,16	36	x1,3	48	x1,8	90
	Freq.	2,2		2,3		2,6		2,1		2
	Per core	8,8		9,2		20,8		67,2		64
	Per node	17,6		36,8		332,8		3225,6		7168
	Per system	42,3	x2	94,2	x10,61	1000,0	x11,14	11147,6	x4,1	46448,6
Memory	GB/core (GB)	2		2		2		2		2
	Per node	4	x2	8	x4	32	x3	96	x2,6	256
	Per system	9,6	x2	20	x4,84	96,89	x3,42	331,7+	x5	1658,8+
Network	Topology	Non-block Fat Tree		Non-block Fat Tree		Non-block Fat Tree		Non-block Fat Tree		Fat Tree 3 Islands non-blocking
	Gbits/core	2	x0,5	1	x2,5	2,5	X0,8	2,1	x0,42	0,89
	Gbits/node	4		4	x10	40	x2,5	100	x1	100
Storage	(TB)	236	x2	460	x6,5	3000	x4,6	14000	x17	240000
Consumption	(KW)	650	x1,1	750	x1,44	1080	x1,29+	1400+	x4	5753

MareNostrum 5

Total peak performance: 314 Pflops

GPP: 45.4 Pflops

ACC: 260 Pflops

NGT GPP 2.82 Pflops

NGT ACC : 6 Pflops

MareNostrum 1

2004 – 42.3 Tflops

1st Europe / 4th World

New technologies

MareNostrum 2

2006 – 94.2 Tflops

1st Europe / 5th World

New technologies

MareNostrum 3

2012 – 1.1 Pflops

12th Europe / 36th World

MareNostrum 4

2017 – 11.1 Pflops

2nd Europe / 13th World

New technologies

MareNostrum 5

2023 – 204.6 Pflops

3rd Europe / 8th World

MareNostrum 5

Total net storage capacity: 650 PB

ESS 3500 data: 248 PB HDD

ESS 3500 performance 2.48 PB NVME

Archive Tape: 400 PB Tape

MareNostrum 1

2004 – 236 TB

1st Europe / 4th World
New technologies

MareNostrum 2

2006 – 460 TB

1st Europe / 5th World
New technologies

MareNostrum 3

2012 – 5.7 PB

12th Europe / 36th
World

MareNostrum 4

2017 – 149.5 PB

2nd Europe / 13th World
New technologies

MareNostrum 5

2023 – 650 PB

3rd Europe / 8th World



Three Rivers 40 Rack Summary (V14)

32 xSeries e1350 Racks

- 27 Compute Racks (RC01-RC27)
- 162 BC chassis w/OPM & gb ESM
 - 2268 JS20+ nodes w/myrinet card

- 1 Gigabit Network Rack (RN01)
- 1 Force10 E600 for Gb network
 - 4 Cisco 3550 48-port switches

- 4 Myrinet Racks (RM01-RM04)
- 10 clos256+256 myrinet switches
 - 2 Myrinet spine1280s

8 pSeries 7014-T42 Racks

- 1 Operations Rack (RH01)
- 1 7316-TF3 display
 - 2 p615 mgmt nodes
 - 2 HMC 7315-CR2
- 3 Remote Async Nodes
- 3 cisco 3550 (installed on site)
 - 1 BC (installed on site)

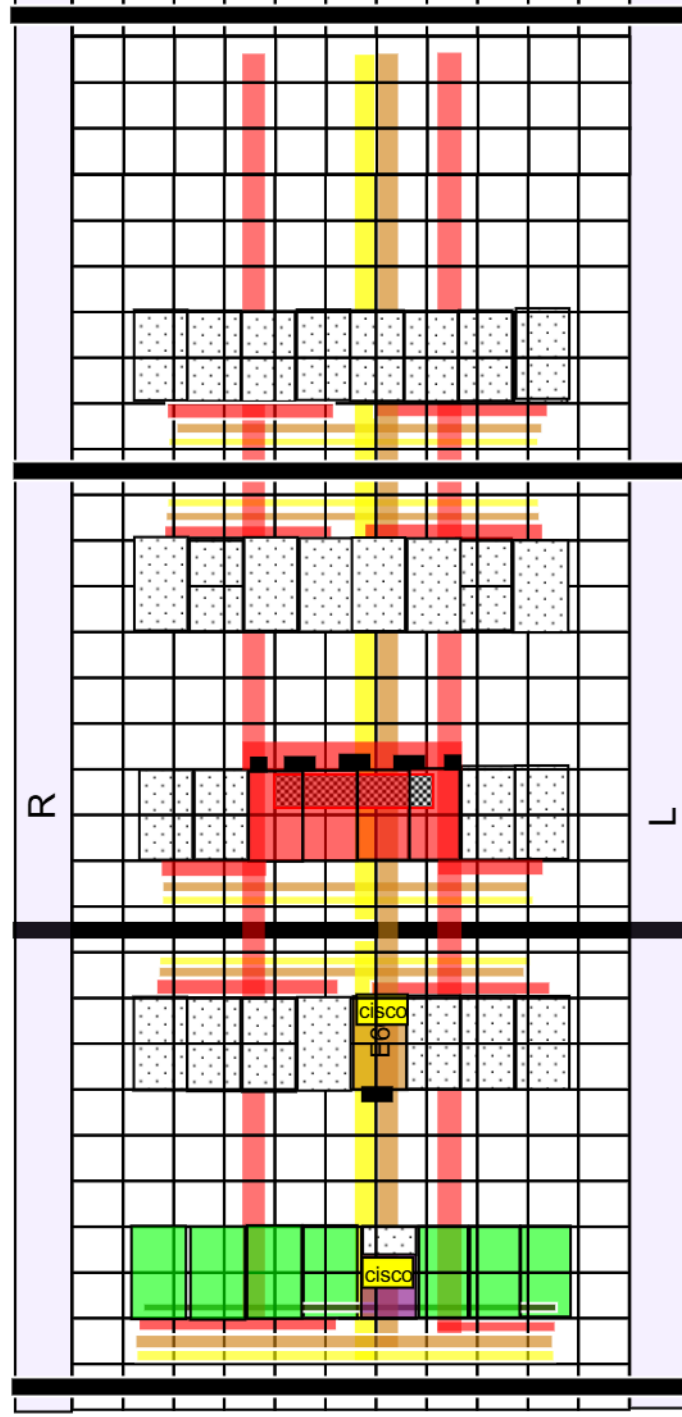
- 7 Storage Server Racks (RS01-RS07)
- 40 p615 storage servers
 - 20 FASTT100 controllers
 - 20 EXP100 expansion drawers
 - 560 250M SATA disks

Environmental

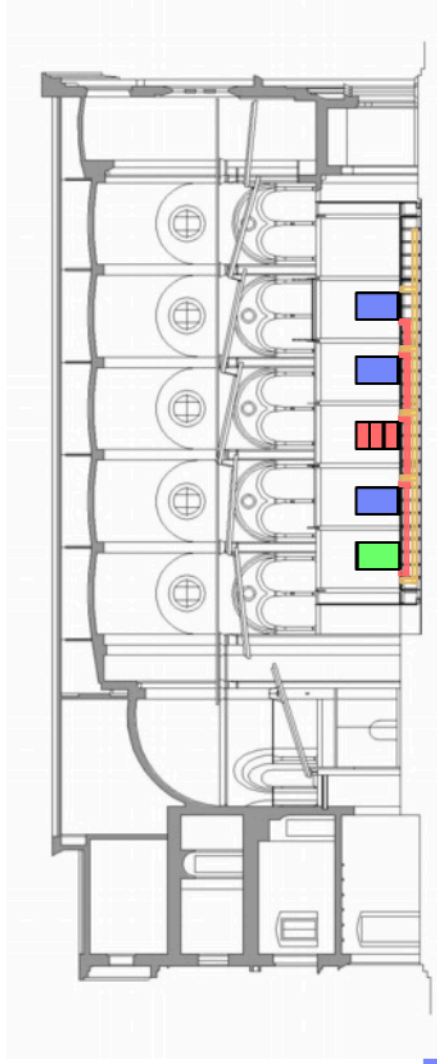
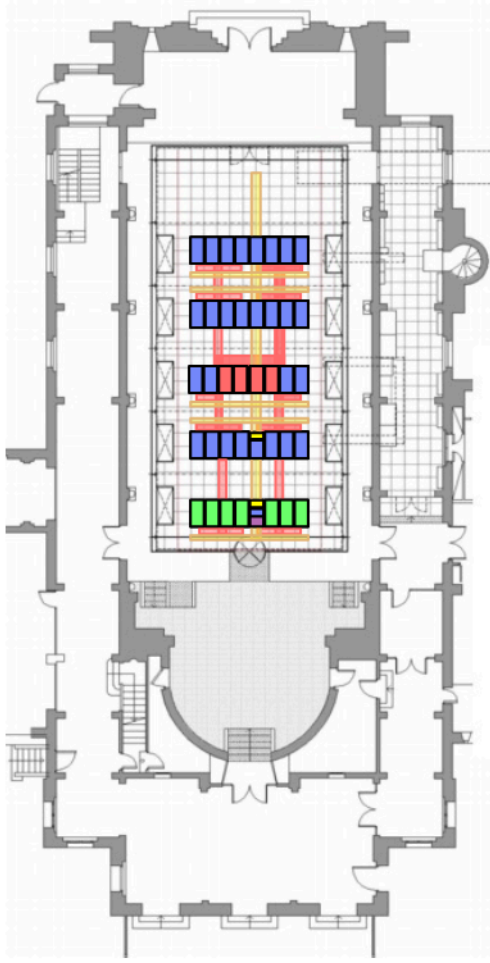
	Individual	Frames	Composite
Compute	3000 lbs 21.6 KWatts 73699 BTUs/hr	27 163 * 7U chassis	81000 lbs 583.2 KWatts 1,989,873 BTUs/hr
Storage	1100 lbs 6 KWatts 12000 BTUs/hr	7	7700 lbs 42 KWatts 84000 BTUs/hr
Mgmt	1050 lbs 1.5 KWatts 5050 BTUs/hr	1	1050 lbs 1.5 KWatts 5050 BTUs/hr
Myrinet	40kg 1.4KWatts	4 12 * 14U chassis	16 KWatts 37800 BTUs/hr
Switch	321 lbs 5KWatts 16,037BTU/hr	2	321 lbs 5KWatts 16,000BTU/hr
TOTAL	Weight Power Heat AC Required Space		98,000 lbs 630 KWatts Over 2 million BTUs/hr 180 Tons AC 160 sq meters

* All data subject to change

Mare Nostrum Under floor cabling channels



MareNostrum Floorplan



Hardware: Installation

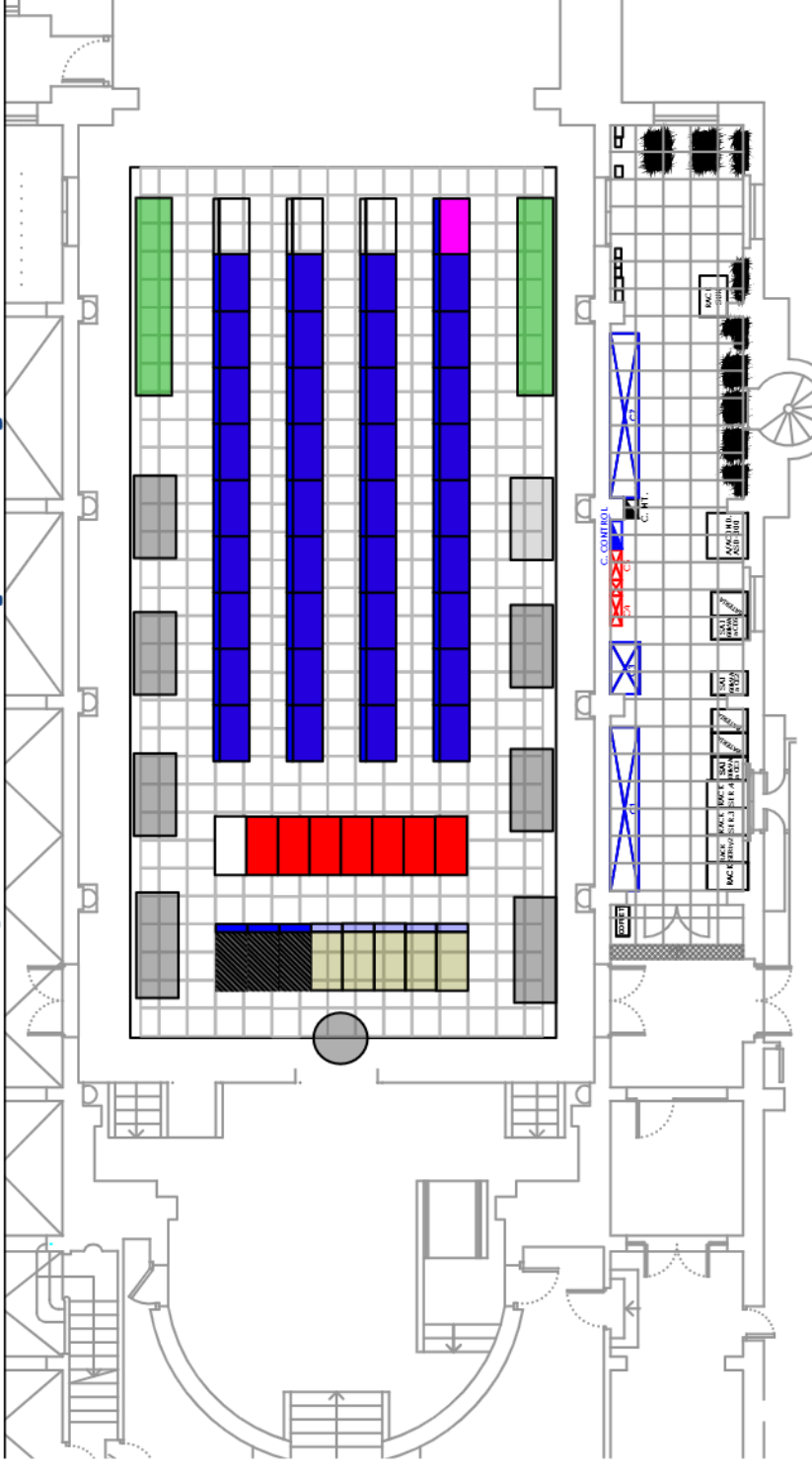




MN1 – MN2 – MN3 – MN4 – MN5

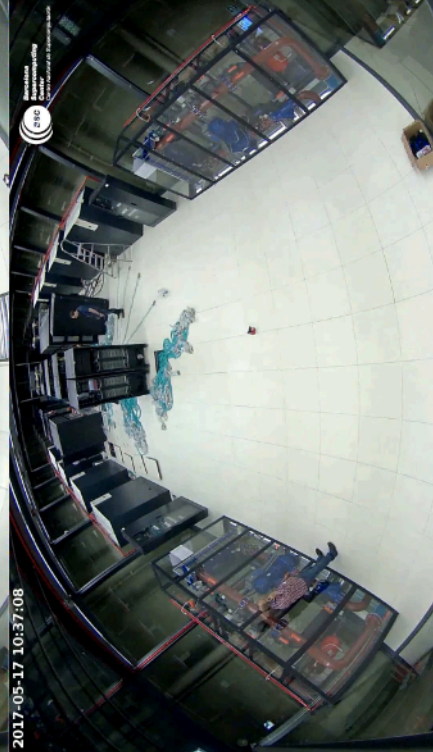
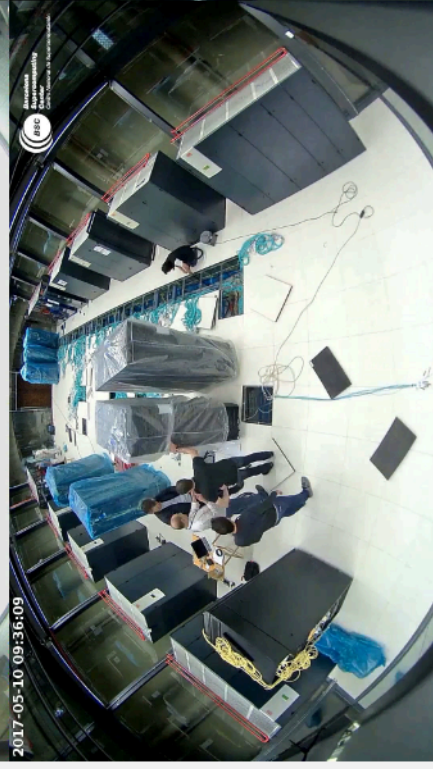
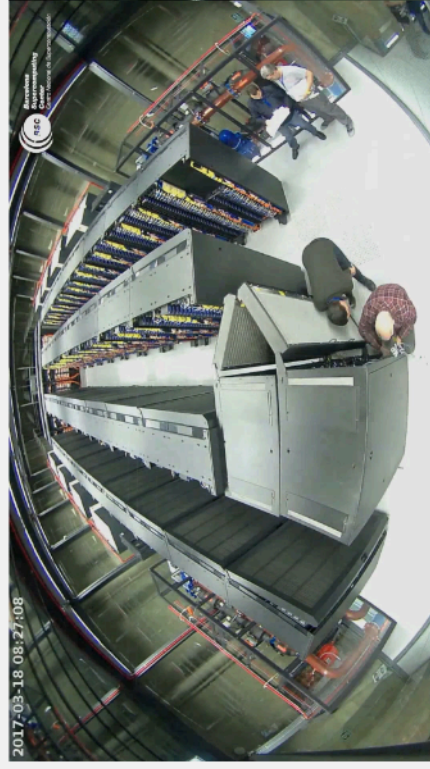
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MareNostrum 3, more capacity more dense



Peak Performance: 1,1 Pflop/s
 Total memory: 100,08 TB
 IB FDR10, non-blocking Fat Tree 0,7 μ s latency, 40 GB/s bandwidth
 Max. Power consumption: 1,08 MW
 GFPS: 2 PB

From MN3 to MN4



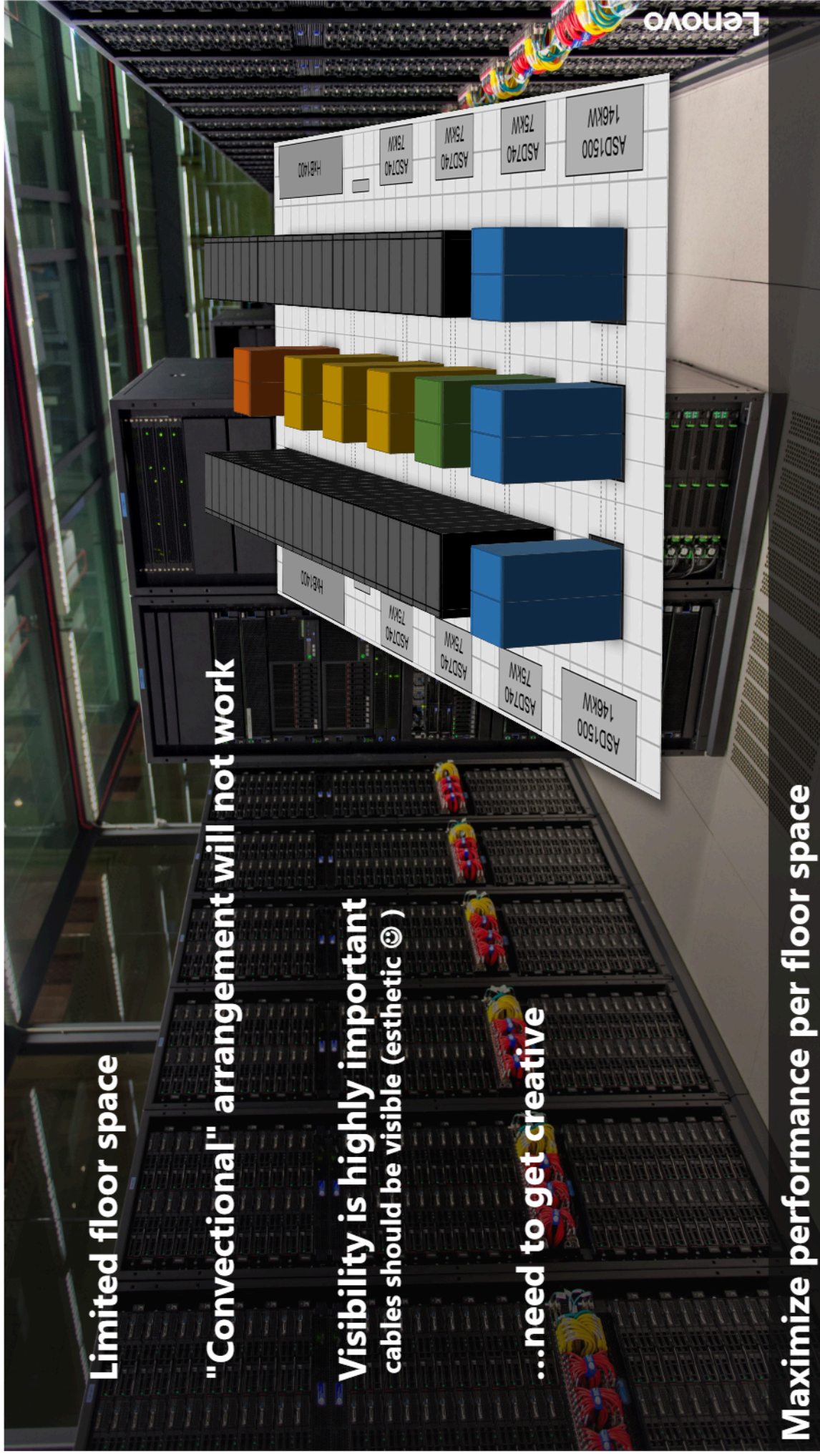
Limited floor space

"Convectional" arrangement will not work

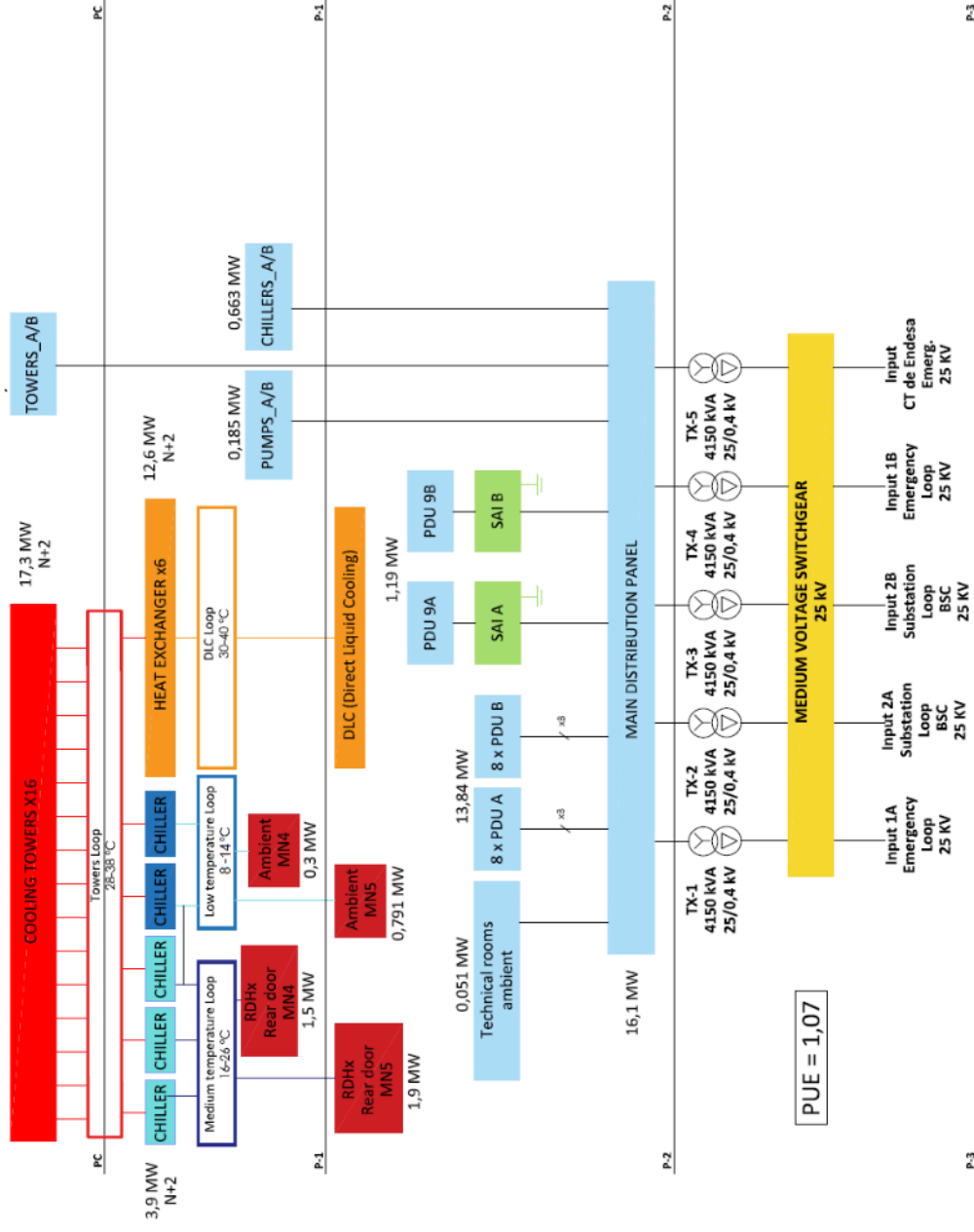
Visibility is highly important
cables should be visible (esthetic ☺)

....need to get creative

Maximize performance per floor space

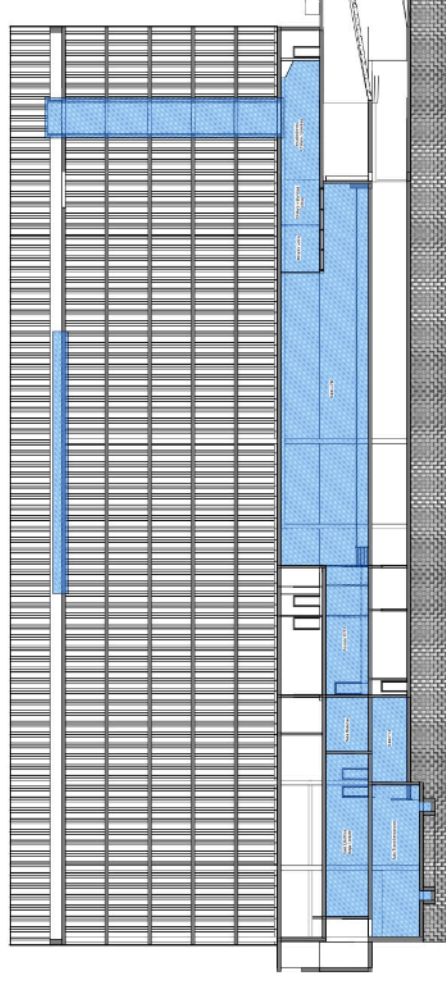






Space available for MN5

Floor		m²	Total
P-3	Transformers	426	470
	Fire extinction	49	
P-2	Compute Room	847	1374
	Access to compute room	46	
	Batteries room	73	
	Low voltage room	408	
P-1	Chillers & Pumps room	466	711
	Riser / "PATIO"	9	
	Visitors area	236	
Roof		320	320
Total		rounded	2875



- 
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Compute Room

- Space: 900 sqm
- >6 meters height 120 cm false floor
- 2500 kg/sqm
- MM (Italy)
- FRP(Fiber-Glass Reinforced Plastic)
PRFV (Poliéster reforzado con fibra de vidrio)
- with carbon powder to give conductivity and antistatic property

Compute Room

- 3 water distribution loop
- Italsan
- PPR, Polypropylene
- About 4 km



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Heat exchangers

- 6 (4+2) Heat exchangers T25-PFM
- Water flow: 1170 m³/h
- Water volume: 26 m³
- Temperatures
 - To tower: outlet: 28,1°C , Inlet: 38,1°C
 - To rack: outlet: 30°C , Inlet: 40°C
- Total dissipation power: 13500 kW



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Chillers

- 5 (2 MT + 1 LT + 2) Chillers
- Water flow: 302 m³/h + 151 m³/h
- Water volume: 12 m³ + 8 m³
- Temperatures, separate loops
 - 16°C – 26°C
 - 8°C – 14°C
- To rack outlet: 30°C, Inlet: 40°C



Pumps

- Grundfos
- 36 in total
 - 12 DLC
 - 12 Medium
 - 12 Low



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Compute Room

- Air cooling
- Crahs: Hi-REF
- 10 x 60 Kw net cooling capacity

Cooling towers

- 14+2 Torraval CTFP-2436(SB)
- Water flow: 1500 m³/h
- Water volume: 60 m³
- Outlet: 28,1°C , Inlet: 38,1°C
- Wet bulb temperature: 25C
- Total dissipation power: 17300 kW
- Water source
 - Underground/phreatic water
 - Industrial water



Compute Room

- Power distribution
- PDU: Schneider
- 8 x 2 x 3200 A/B (2 MW)
- 1x2x1600A UPS (1MW)



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Transformers

- 5 x TRANSFORMADOR 4150KVA VACUUM CAST FILLED DRY (ABB)
- 4150 kVA
- Primary: 25 kV
- Secondary: 420 V
- Frequency: 50Hz
- 3 phases



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Low voltage switchboard room

- Main switchboard with max. intensity of 5x6300 A (Schneider)
 - 36 Tn (18 Tn Copper)
- Power distribution with BlindosBarra, double path
 - 1,5 km of Aluminium blindos + 130 m Copper (3200A)
 - 18 Tn Aluminium blindos

UPS

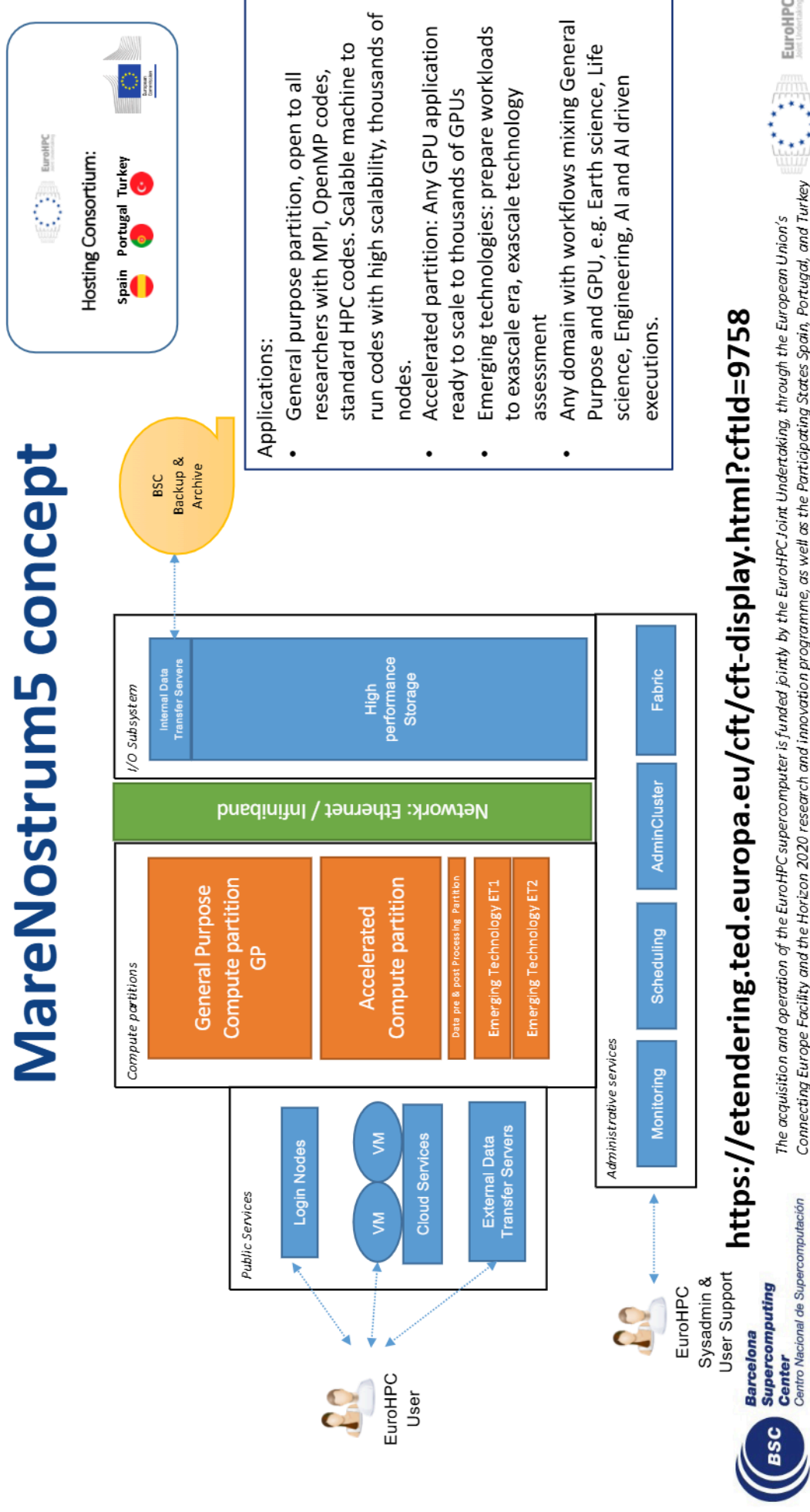
SALIDA DE EMERGENCIA

- Huawei
- 2 x UPS 1MW, 2N. Lithium batteries
- 10 minutes durations



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MareNostrum5 concept



<https://etendering.ted.europa.eu/cft/cft-display.html?cftId=9758>

MareNostrum 5 – Storage Spectrum Scale

MN5 Technology providers:
Eviden, Lenovo, IBM, Nvidia, Intel

HDD: 50 x 4 x 102 x 18 TB NL-SAS 3,5"
248 / 376 PB Net/Brut Capacity
1.6 TB/s read, and 1.2 TB/s

write

Flash: 13 x 24 x 15.36 TB
2.8 / 4.8 PB Net/Brut Capacity
600 GB/s read or write

Power consumption: 400-550 kW

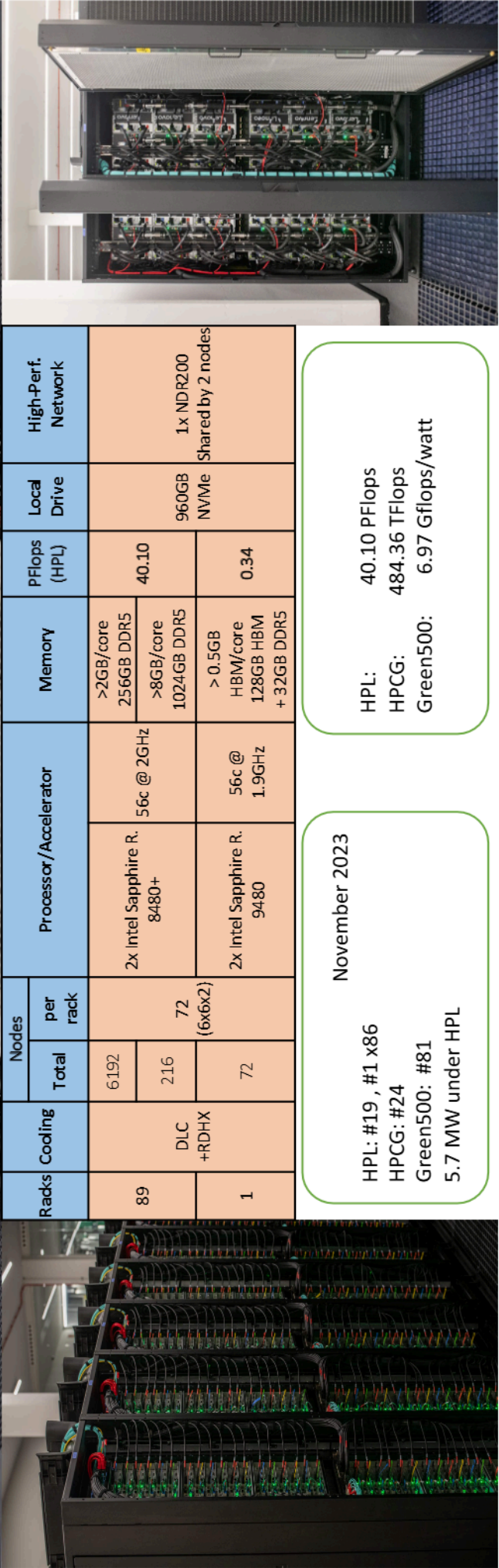
2 Tape libraries HSM/backup TS4500
20000 x JE cartridges Enterprise GEN6
400 PB

20 TB/tape uncompressed
64 x TS1160 fibre channel tape drives
400 MB/s per drive

Power consumption: <10 kW



MareNostrum5
GPP



Racks	Cooling	Nodes		Processor/Accelerator	Memory	PFlops (HPL)	Local Drive	High-Perf. Network
		Total	per rack					
89	DLC +RDHX	6192	72 (6x6x2)	2x Intel Sapphire R. 8480+	>2GB/core 256GB DDR5	40.10	960GB NVMe	1x NDR200 Shared by 2 nodes
		216		56c @ 2GHz	>8GB/core 1024GB DDR5			
1		72		2x Intel Sapphire R. 9480	> 0.5GB HBM/core 128GB HBM + 32GB DDR5	0.34		

November 2023

HPL: #19 , #1 x86
HPCG: #24
Green500: #81
5.7 MW under HPL

HPL: 40.10 PFlops
HPCG: 484.36 TFlops
Green500: 6.97 Gflops/watt

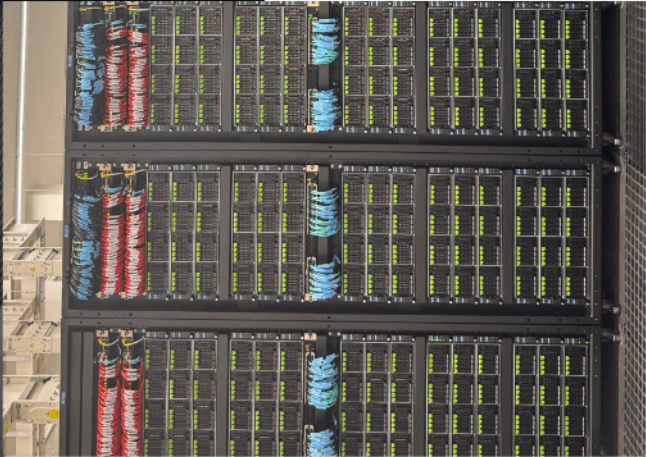
A photograph of the MareNostrum5 supercomputer facility. The image shows a long aisle with rows of server racks on the right and a large white pillar on the left. A green-bordered box is overlaid on the image, containing the text "MareNostrum5" and "ACC". The server racks are filled with various components, including circuit boards and cooling fans. The floor is dark, and the ceiling is white with some lighting fixtures.

HPL:	175.30 Pflops
HPCG:	1.146 PFlops
Green500:	42.15 Gflops/watt
Graph500:	15.73e+12 GTEPS (BFS)
	4.1 MW under HPL (175 PF/s)

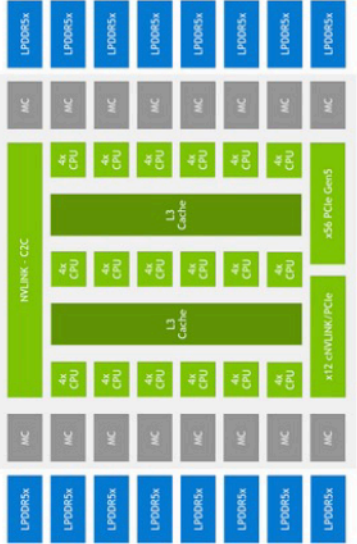
Nvidia Hopper BF16: 120 TFLOPs, Tensorcore: 1 PFLOPs



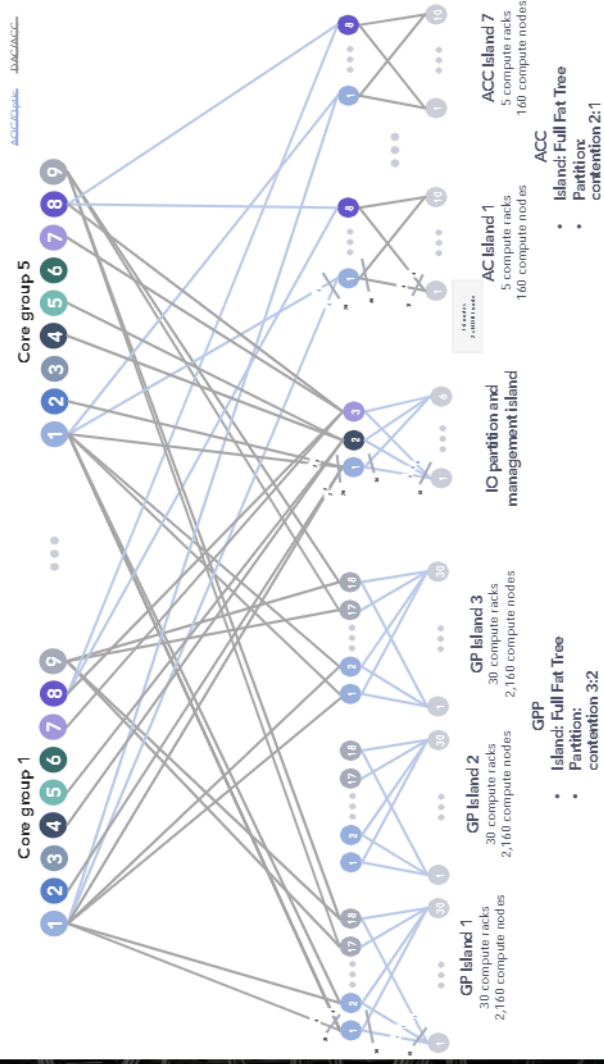
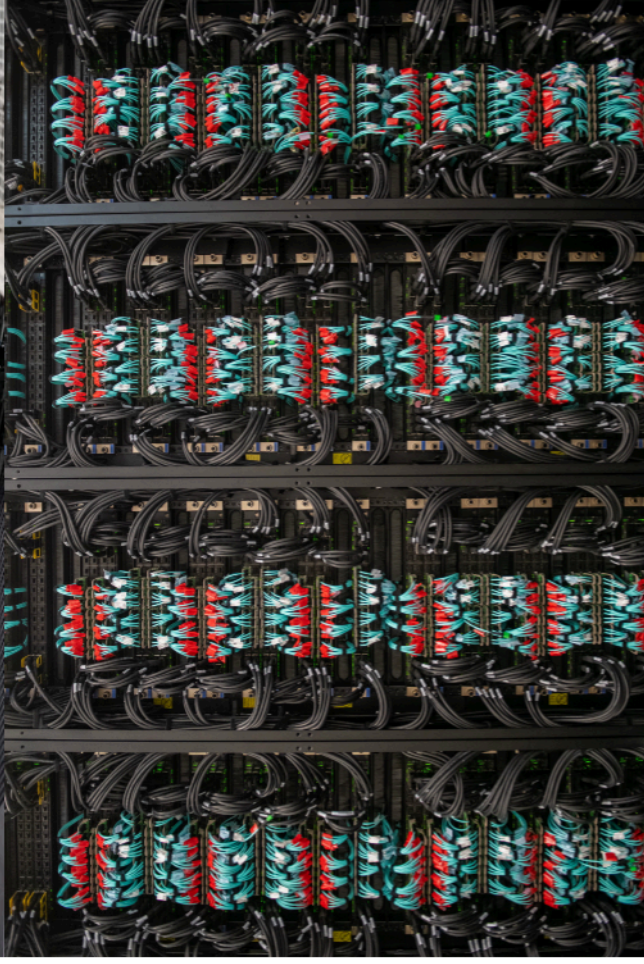
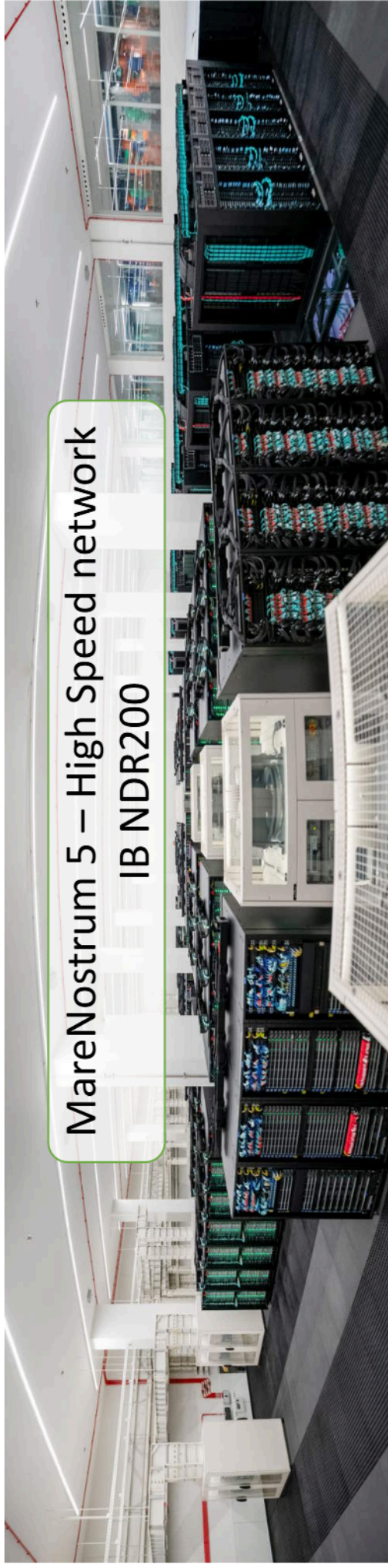
MareNostrum5
NG GP



Racks	Cooling	Nodes		Processor/Accelerator	Memory	pFlops (HPL)	Local Drive	High-Perf. Network
		Total	per rack					
7	RDHX	408	6x60 1x48	2x NVidia Grace 72c @ 2GHz	240 GB LPDDR5	2	745GB NVMe	1x NDR200



MareNostrum 5 – High Speed network IB NDR200

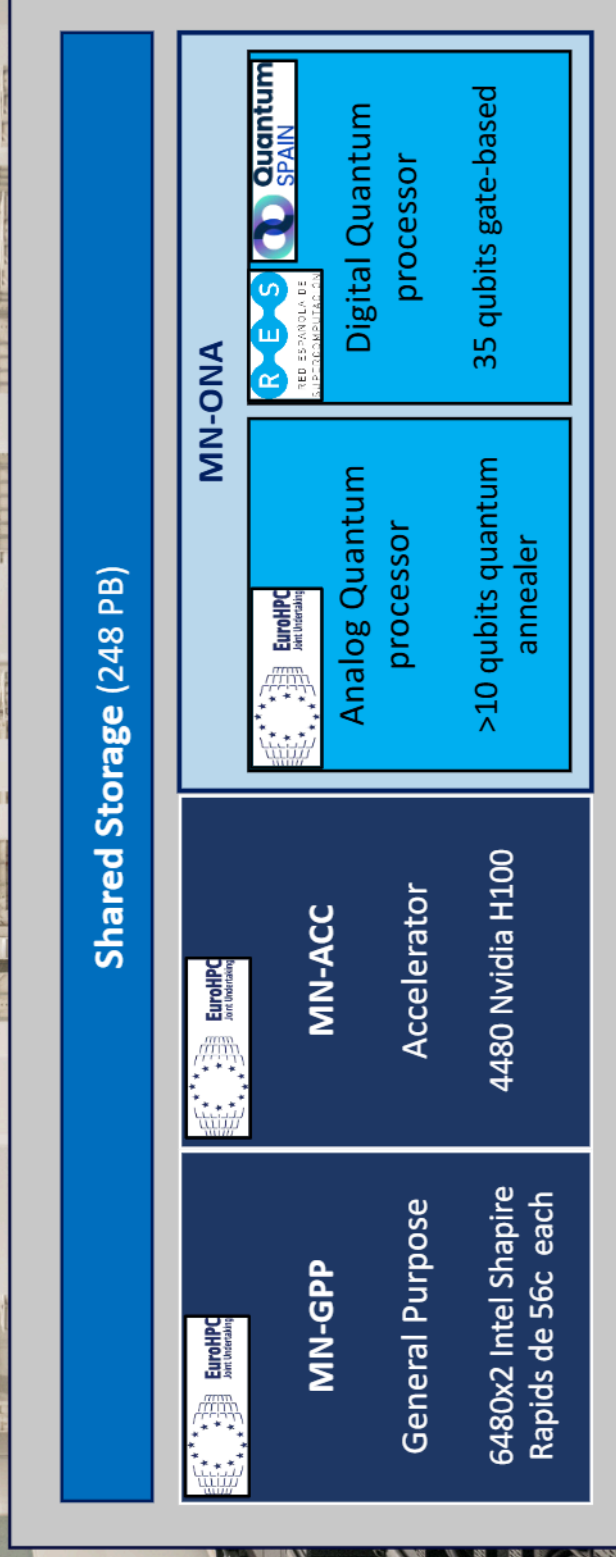


MareNostrum5 – Software stack

Software type	MN5
Operating system	Red Hat Enterprise Linux
Compiler Suite	Intel OneAPI HPC Toolkit Nvidia SDK (PGI)
Numerical libraries	Intel MKL Nvidia SDK
Debugging/profiler tools	BSC Performance tools ARM DDT Nvidia SDK Intel OneAPI HPC Toolkit (vtune, ...)
Resource and workload manager	SLURM Only one Slurm cluster, with different partitions
Energy Efficiency and Power Management	EAR

MareNostrum5

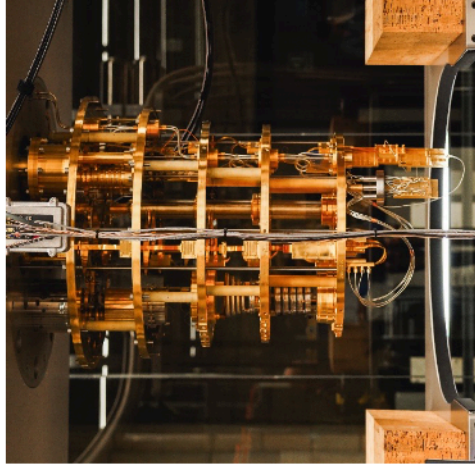
Integration of the quantum partition



“MareNostrum5 Ona”

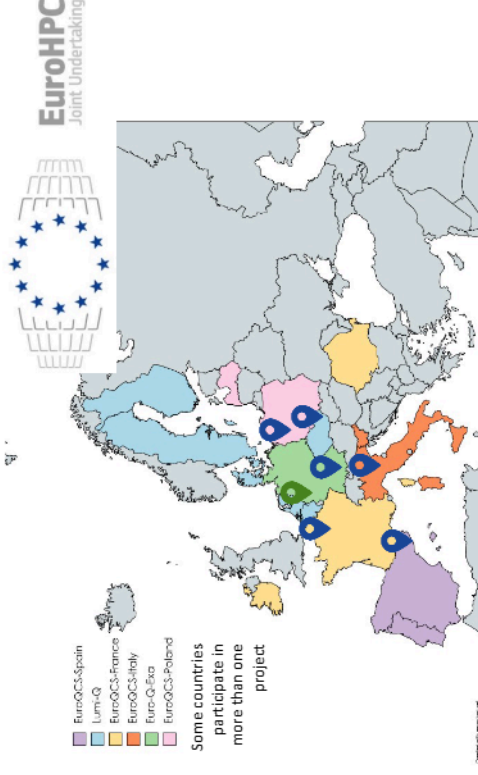
MareNostrum5 quantum computing partition

Superconducting circuits digital quantum computer
(installed)



Technology provided by
Qilimanjaro Quantum Tech - GMV

Superconducting circuits analog quantum computer
(tender in process)



Access through the Spanish Supercomputing Network.
Quantum Spain: 27 Spanish institutions involved

Part of the EuroHPC quantum computing network
Consortium BSC (ES) – IFAE (ES) – INL (PT)



Barcelona Supercomputing Center
Centro Nacional de Supercomputación



España digital

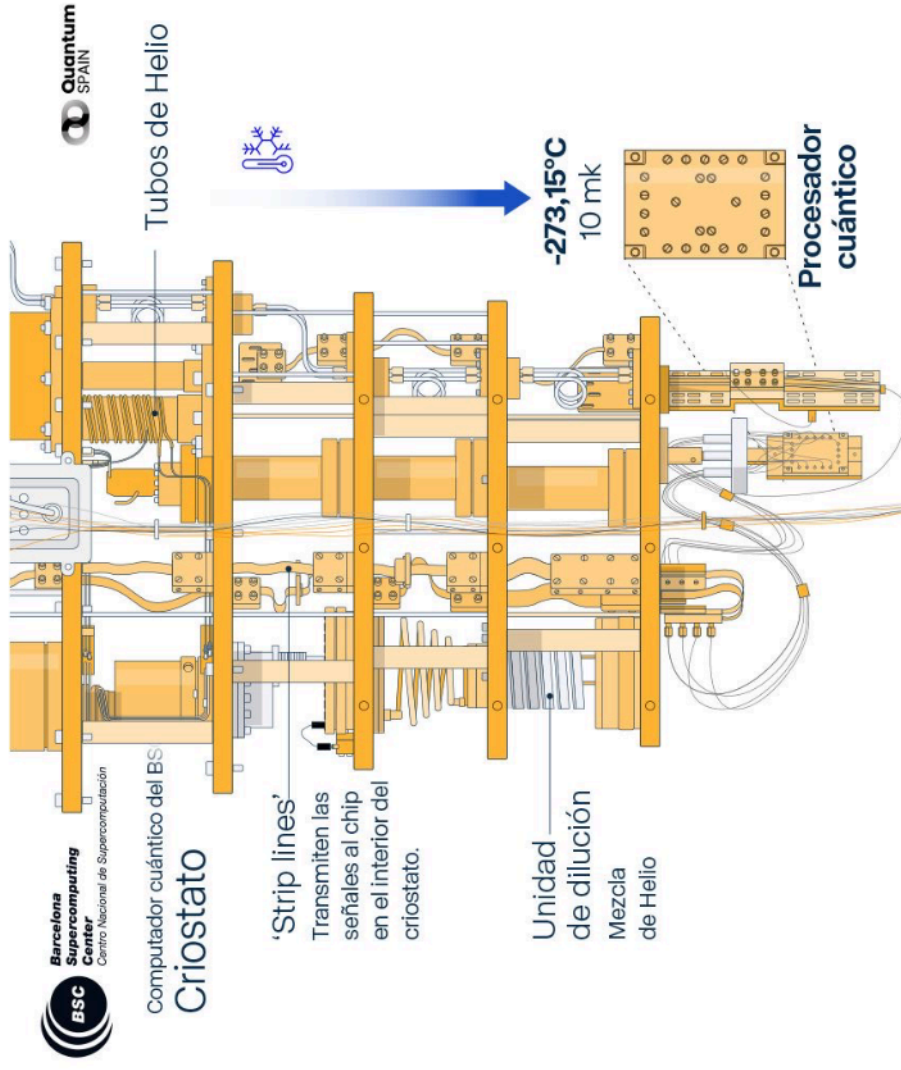
2026



 <https://quantumspain-project.es>

Quantum Computers @BSC





This work has been financially supported by the Ministry for Digital Transformation and Civil Service of the Spanish Government through the QUANTUM ENIA project call – Quantum Spain project, and by the European Union through the Recovery, Transformation and Resilience Plan – NextGenerationEU within the framework of the Digital Spain 2026 Agenda.



BSC AI Factory

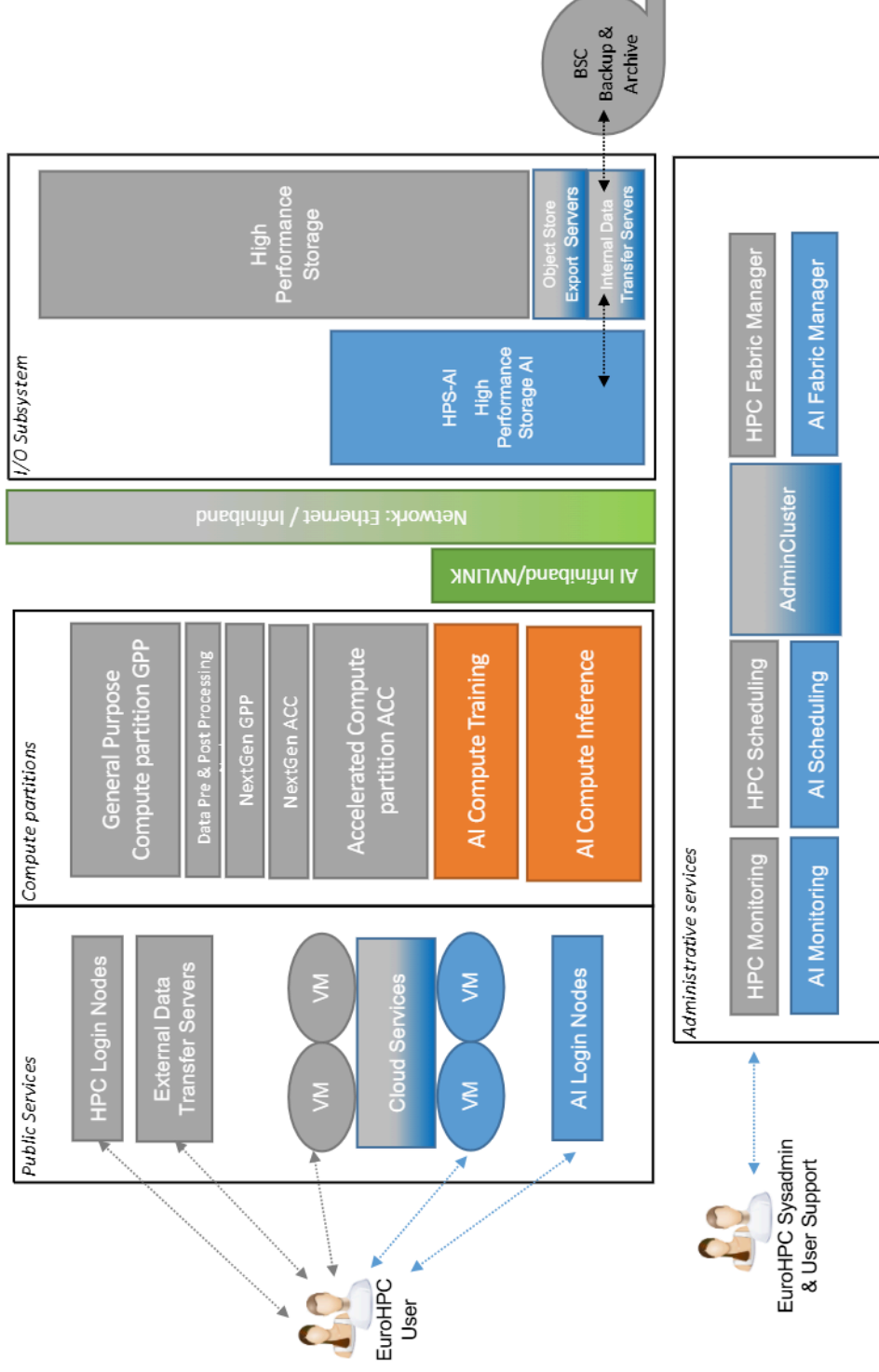
AI Factory SERVICES

42M€

Experimental
Platform
1,28M€



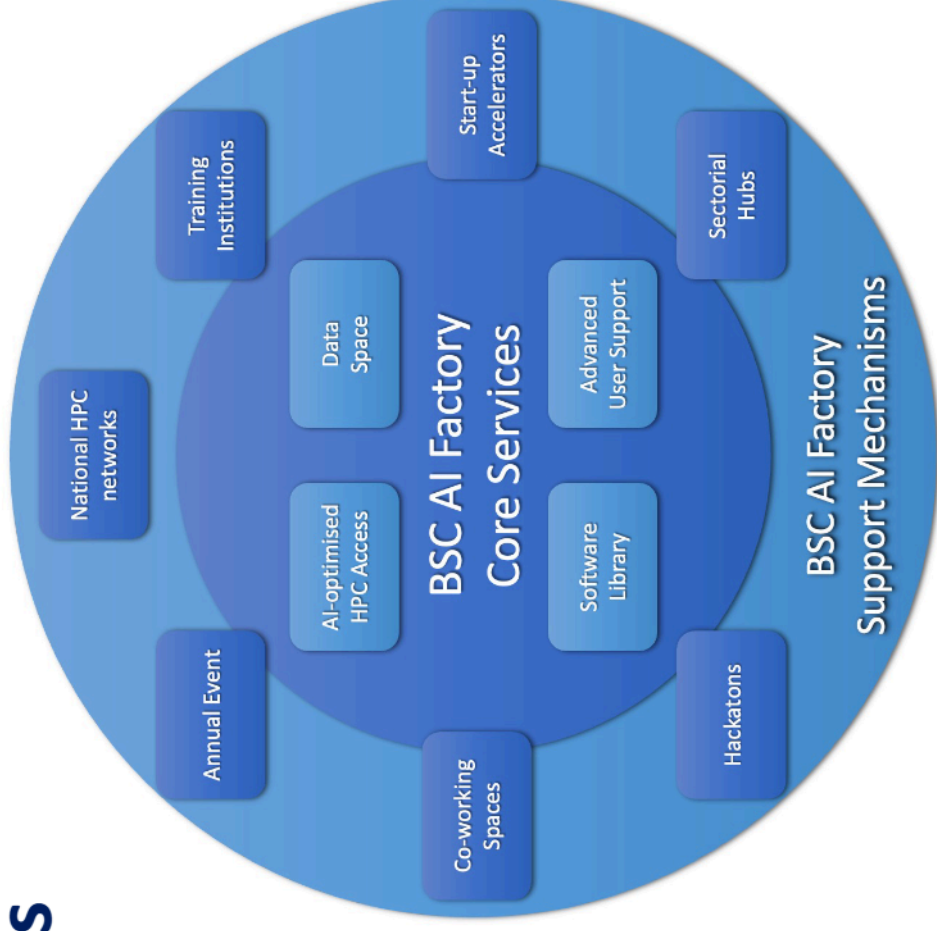
MareNostrum 5, with AI partition



BSC AI Factory services

The BSC AI Factory is designed around 4 core services and 8 support mechanisms aimed at:

- Breaking AI innovation entry barriers (HPC capacity & technical expertise)
- Generating an AI-related innovation ecosystem (networking, funding, talent...)
- Training the workforce for AI-driven economies



Industries summary, including datasets and services

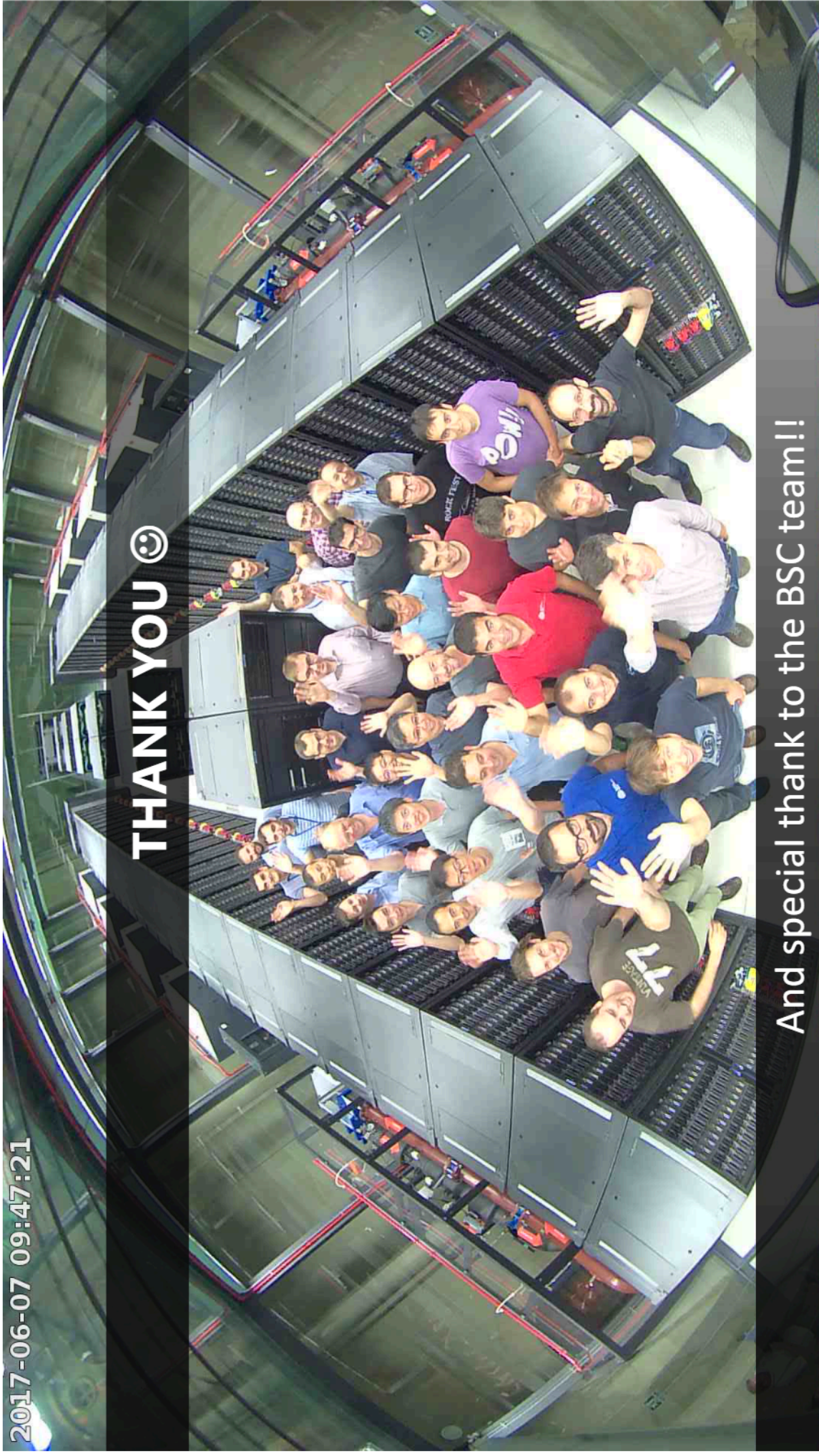
Health sector	Agriculture and climate	Energy sector	Finance and Legal	Policy Making	Communication and Media
Subsectors: biotech, pharma, medical devices, health services Datasets: EGA, UniProt, PMUT, EUCAIM, MDDb, PDB Services: Genomics Platform, Structural bioinformatics platform, Synthetic data Platform, openbench for AI models, Sandbox for future research environments in health	Subsectors: Agriculture, Forest, Food, climate related industries Datasets: GHOST, Dust reanalysis, Barcelona Dust Regional Center, CALIOPE, Air Quality, ICAP, MONARCH, EC-Earth Global Climate Projections, EC-Earth Global Climate Predictions, Agrihub Services: support on selection of geophysical datasets, how to best use these datasets, usage of HPC for specific applications, selection and use of climate data and projections	Subsectors: energy production renewable and non renewable, distribution energy systems, commercialization of energy... Datasets: Energy Data space, Offshore Renewable Energy Systems Services: Support on designing and implementing numerical models for combustion, fusion, solid and fluid dynamics	Subsectors: Law Firms, LegalTech companies, Banks, Financial Entities, Investors Datasets: Barco España, World Bank, Eurostat, boerddag/euifex Services: Assistance on model selection, data curation and processing, and training for banking problems, assistance on data visualisation and dashboarding	Subsectors: education, economy Smart cities, infrastructure, social services ... Datasets: DS4Skills, Eureka3D, A4E, European, Europeana, EOSC, FAIR-IMPACT, Urban Planning and Public Services from Portugal; Services: Assistance on model selection, data curation and processing, and training for banking problems, assistance on data visualisation and dashboarding	Subsectors: communication agencies, media (press, TV, audiovisual, radio), new agencies etc... Datasets: BSC Internet observatory, GDELT, MediaCloud, Factva, TEMS, European Data Portal, FBUI Databases Services: Assistance on model selection, data curation and processing, and training for media and communication problems, assistance on data visualization and dashboarding
Cross Field Support through BSC Language Foundational Models Datasets huggingface.co/datasets/projecte-aina/CATalog huggingface.co/datasets/oscar-corpus/community-oscar huggingface.co/datasets/huggingface/FWTFnewweb-edu Open Models: https://huggingface.co/collections/BSC-LT/salamandra-6561c171485944c179469043a Alina Translation and speech models Services: Continuous pretraining Fine tuning for specific tasks (RAG...) Prompt Engineering Benchmarking and evaluation					



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THANK YOU ☺

And special thank to the BSC team!!





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Supercomputing
Center**
Centro Nacional de Supercomputación

THANK YOU!

sergi.girona@bsc.es