The Collider Partner's SAFARY TECHS

MEETING THE SCIENTIFIC ECOSYISTEM

Leading research centers, laboratories, universities & singular institutions

Barcelona Supercomputing Center
Centro Nacional de Supercomputación

ONLINE
11'00-12'00

Improving #TechAbsorption & competitiveness of The Collider Partners

CaixaBank · Bayer · Damm · enel · Vall Companys Grupo · Novartis · Repsol

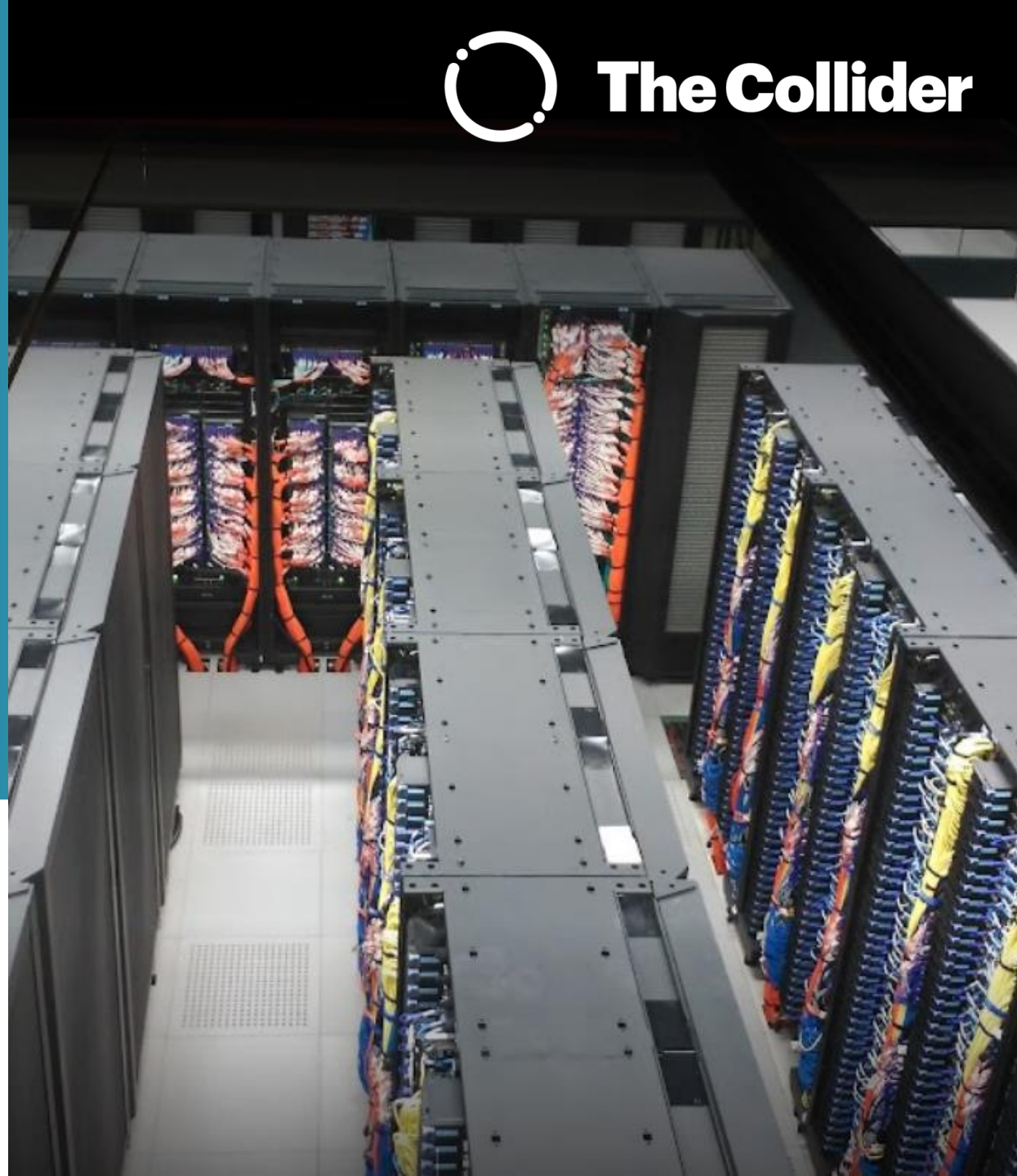
BSC Barcelona Supercomputing Center

Online SAFARY TECH

Online Tour

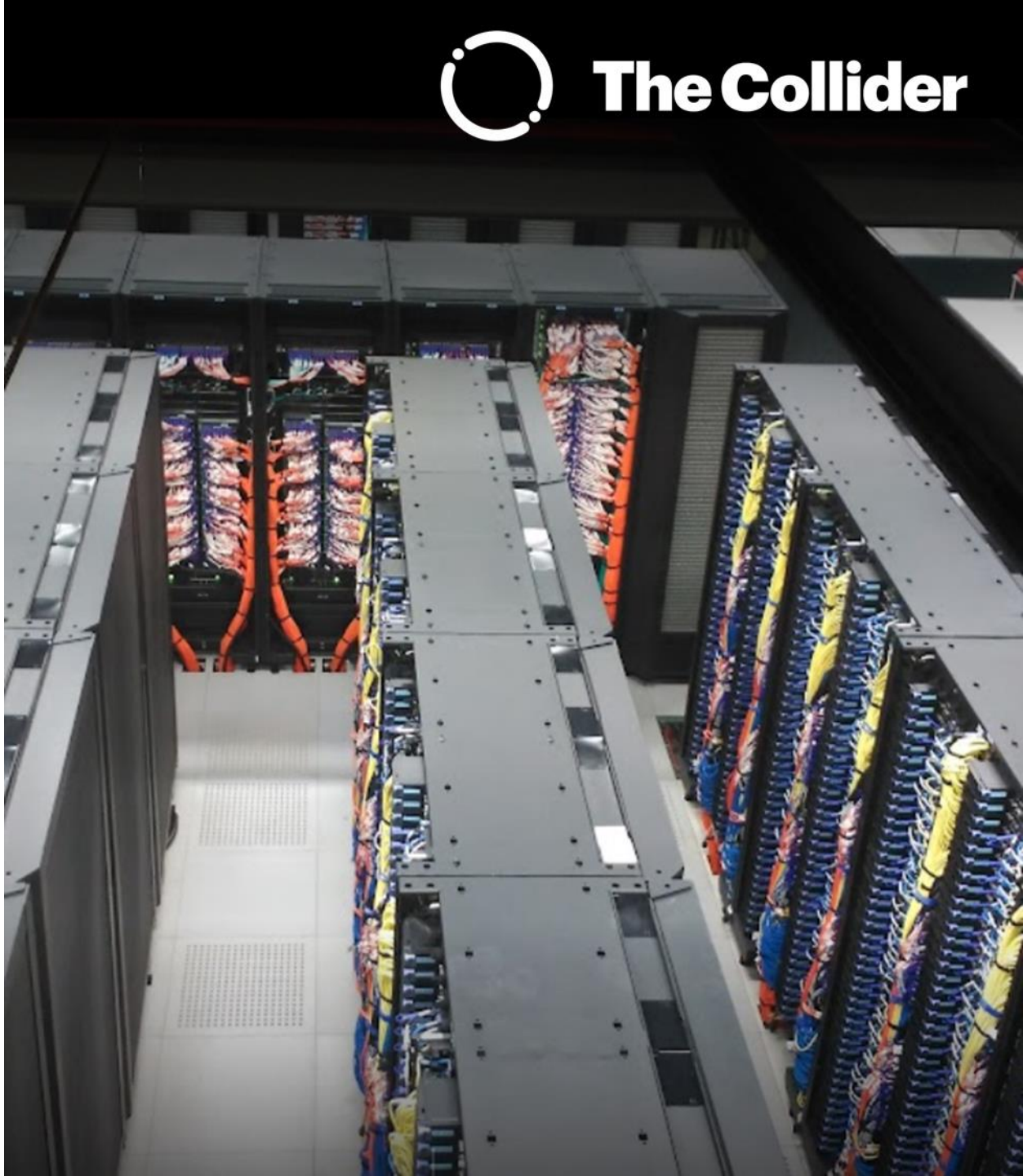
Friday, **December 3 - 2021** from 11 to 12 h

Improving #TechAbsorption & competitiveness of The Collider Partners



Online Visit Programme

11’00 - 11’05	Welcome to BSC
11’05 – 11’35	Virtual Visit to Marenostrum
11’35 – 11’45	Touch points between BSC and Industry. Collaboration models
11’50 – 12’00	Questions time



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Introduction to BSC

Barcelona Supercomputing Center-Centro Nacional de Supercomputación (BSC-CNS) is **the national supercomputing centre in Spain**.

They specialise in **high performance computing** (HPC) and manage **MareNostrum**, one of the most powerful supercomputers in Europe, located in the Torre Girona chapel.

BSC is at the service of the international scientific community and of **industry that requires HPC resources**.

Their **research** focuses on **4 fields**:
- Computer Sciences
- Life Sciences
- Earth Sciences
- Computer Applications in Science and Engineering.

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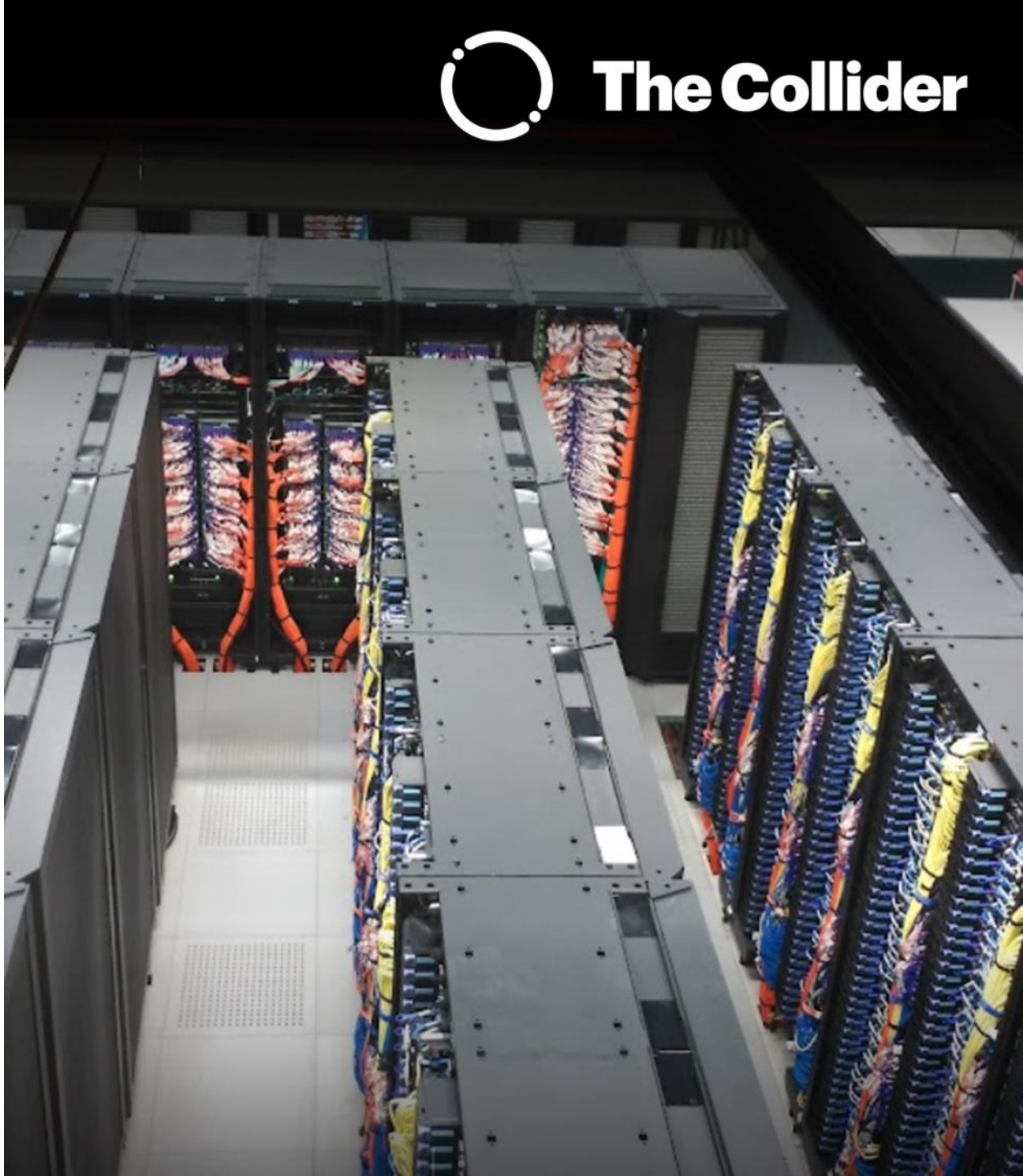


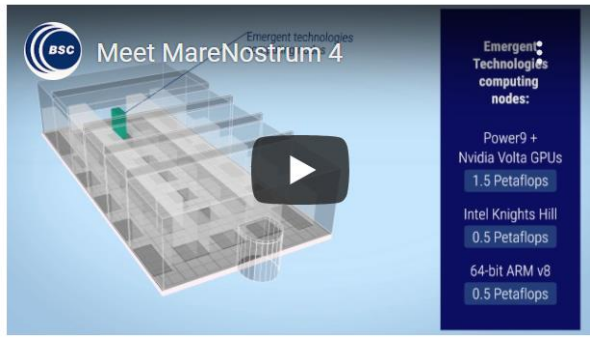
Mare Nostrum

MareNostrum is the generic name that BSC uses to refer to the different updates made to its most **emblematic supercomputer** and the most **powerful supercomputer in Spain**.

MareNostrum is entirely aimed at **generating scientific knowledge**. It is used in almost all scientific disciplines -from astrophysics and materials physics to biomedicine- and in engineering and industry.

So far, four versions have been installed. At the end of June 2017 begun operating **MareNostrum 4**, which when fully installed will have a peak performance of 13.9 Petaflops. MareNostrum 4 is used for research projects on cli**mate change, gravitational waves, a vaccination against AIDS, new radiation treatments to fight cancer and simulations relating to the production of fusion energy**, among others.

https://youtu.be/BV7gG95ejYs



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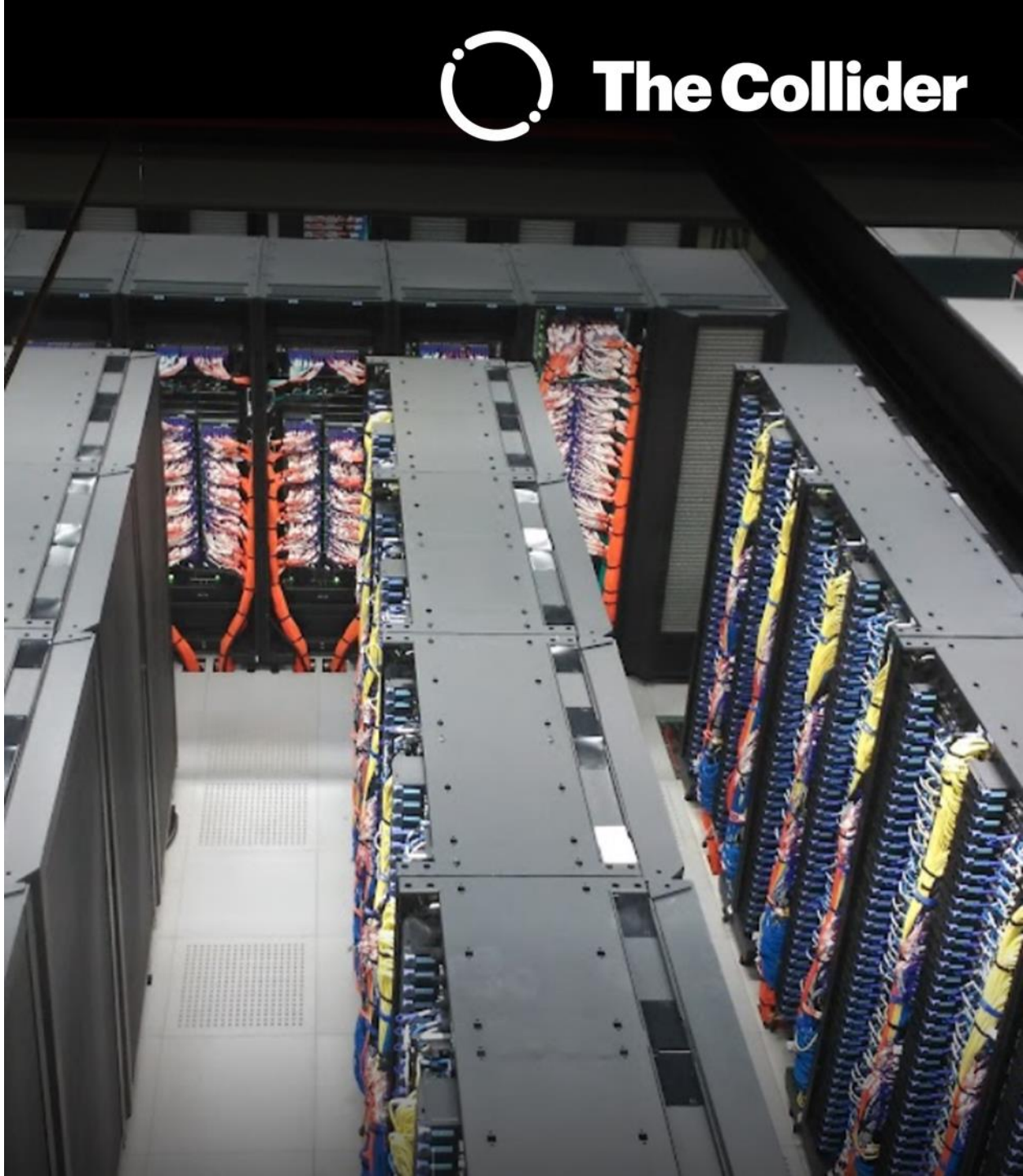

Research Departments (1)

- Accelerators and Communications for HPC (AccelCom)
- Atmospheric Composition
- Best Practices for Performance and Programmability
- Climate prediction
- Comparative Genomics
- Computational Biology
- Computational Earth Sciences
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- Computational Biology
- Computational Earth Sciences
- Computational Genomics
- Computational Social Sciences and Digital Humanities
- Computer Architecture - Operating Systems (CAOS)
- Computer Architecture For Parallel Paradigms
- Data Analytics and Visualization
- Data-Centric Computing
- Earth System Services

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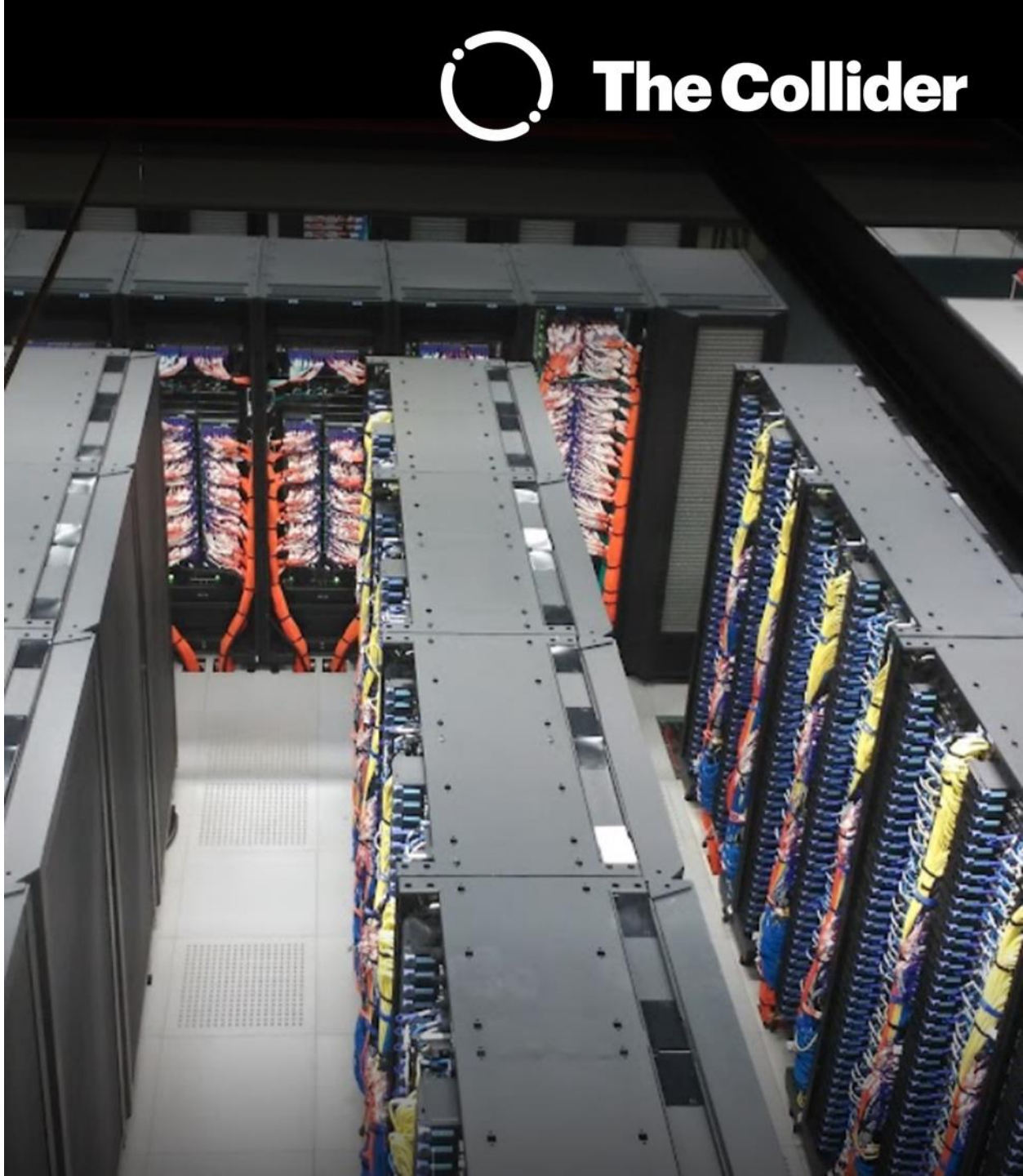

Research Departments (2)

- Electronic and Atomic Protein Modeling (EAPM)
- Emerging Technologies for Artificial Intelligence
- Environmental Simulations
- Fusion
- General CASE
- General Computer Sciences
- General Earth Sciences
- Genome Informatics
- Geophysical Applications
- HPC Software Engineering
- HPC Software Engineering
- HPC modelling and simulation for Societal Challenges
- Heterogeneous architectures
- High Performance Artificial Intelligence
- High Performance Computational Mechanics
- Integrative Computational Network Biology (ICONBI)
- Large-scale Computational Fluid Dynamics
- Material Science
- Performance Tools

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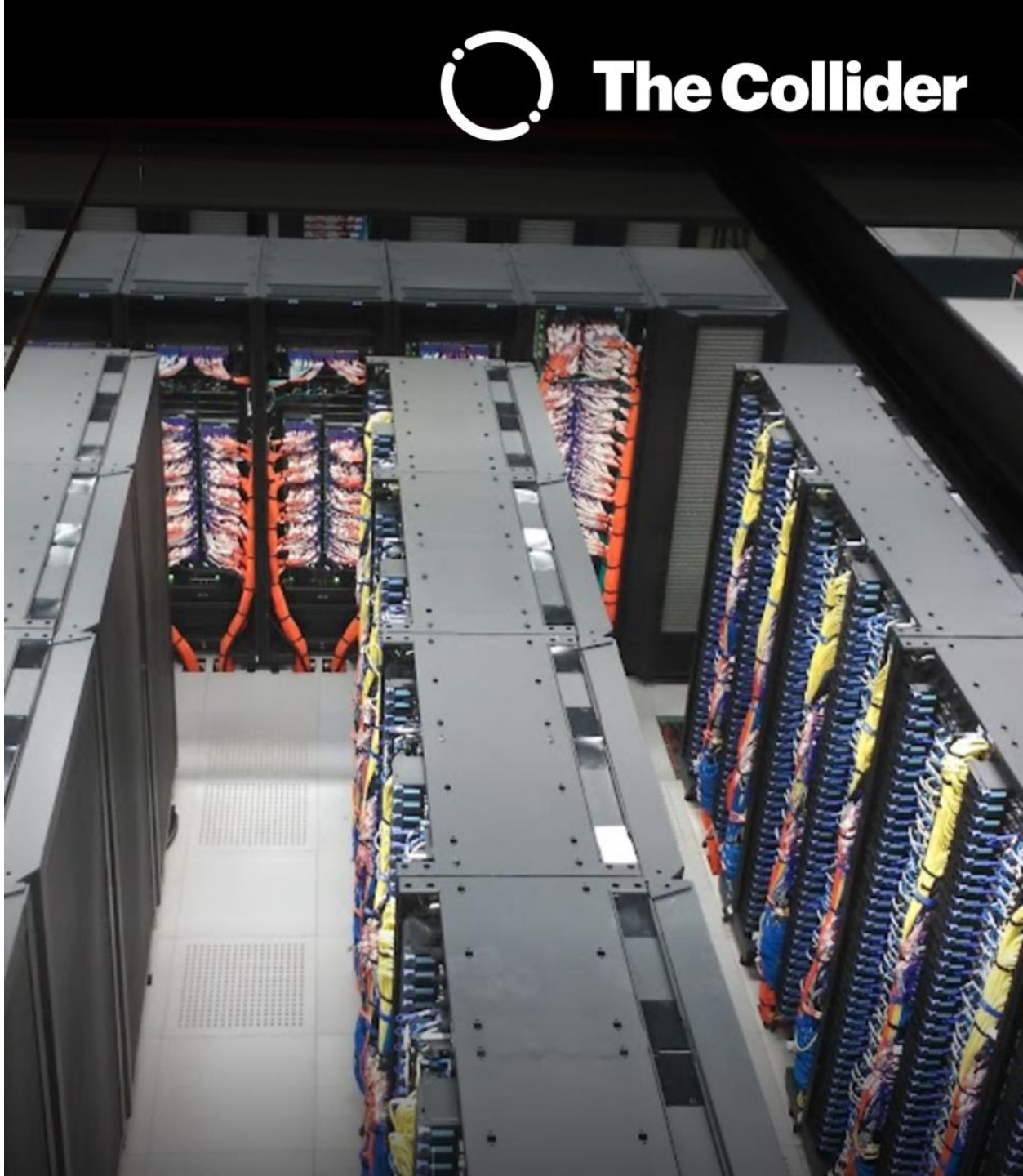


Research Departments (3)

Physical and Numerical Modelling

Predictable Parallel Computing

Programming Models

Propulsion Technologies

QUANTIC

Smart Cities

Social and Media Impact Evaluation

Spanish National Bioinformatics Institute (INB)/ELIXIR-ES, Computational team

Spanish National Bioinformatics Institute

Spanish National Bioinformatics Institute (INB)/ELIXIR-ES, Coordination team

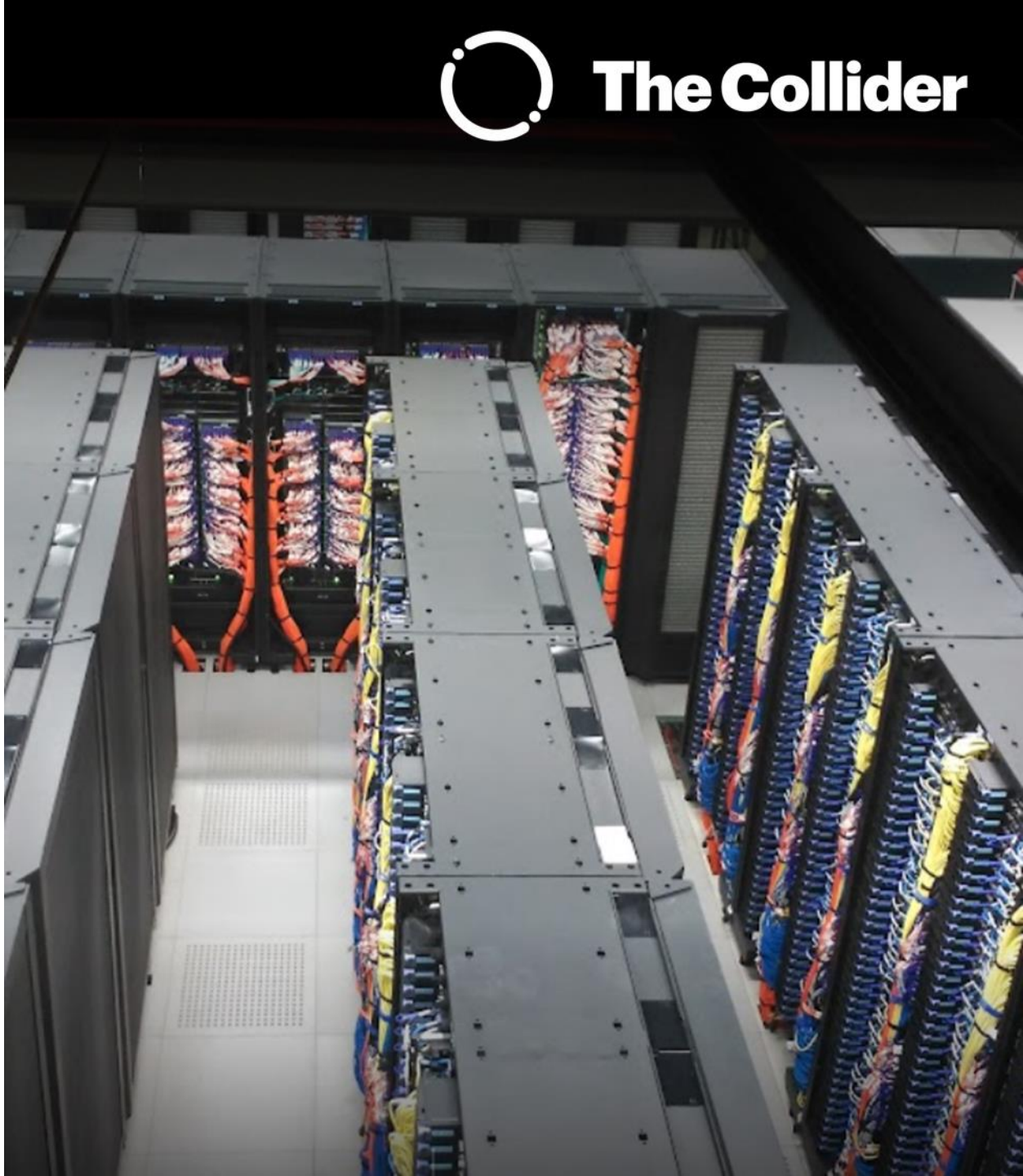
Storage systems for Extreme Computing

System software for energy management in HPC

Text mining

Transcriptomics and Functional Genomics Lab (TFGL)

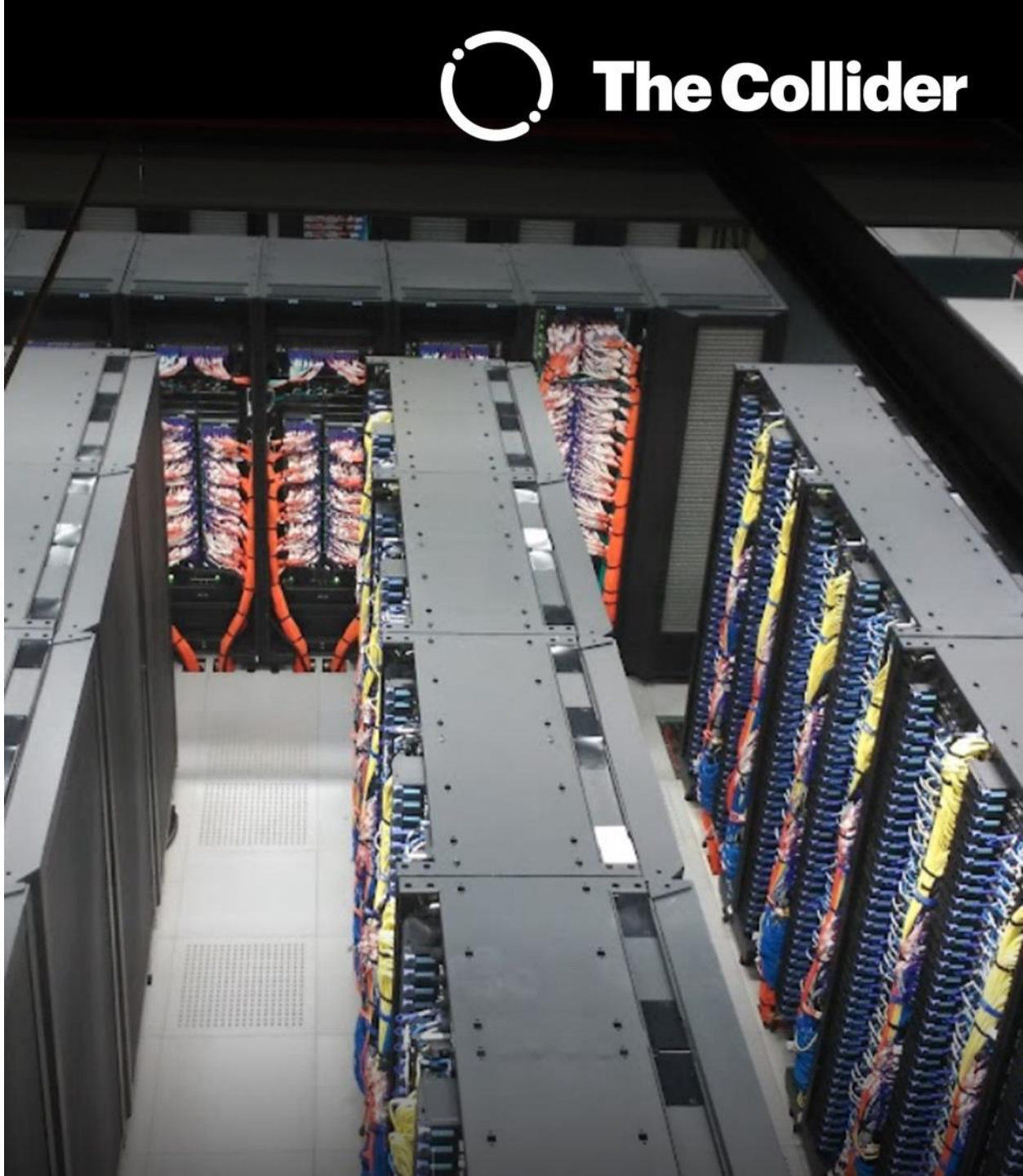
Workflows and Distributed Computing



Visit Preparation

What do you know about supercomputers?

TEST: https://quiz.bsc.es/en/



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The Collider

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