



BARCELONA ZETTASCALE LAB

Hacia el Zettascale: Avances del Barcelona Zettascale Lab

Evento Final del proyecto BZL Madrid (España)
16 de Junio de 2026



**Barcelona
Supercomputing
Center**
Centro Nacional de Supercomputación



BARCELONA ZETTASCALE LAB

Visión General del BZL

Miquel Moretó – BSC

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Zettascale Lab Project Description



- Project title: Barcelona Zettascale Laboratory (BZL)
- Dates: 12/2022 – 06/2026 (3.5 years)
- Main goal: Build first BSC-only high-performance computing (HPC) multicore design
 - RISC-V out-of-order processor
 - VPU accelerator
 - High performance cache hierarchy
- Collaborate with Intel to fabricate such design
 - Two test chips with Intel Foundry Systems (IFS)
 - BZL Tapeout 1 → Intel3
 - BZL Tapeout 2 → Intel 18A
 - Intel provides technology-dependent IPs
- Important milestones:
 - Nov 2024: first tapeout with a reduced number of cores
 - Jan 2026: second tapeout with larger number of cores
- Budget: 43M€

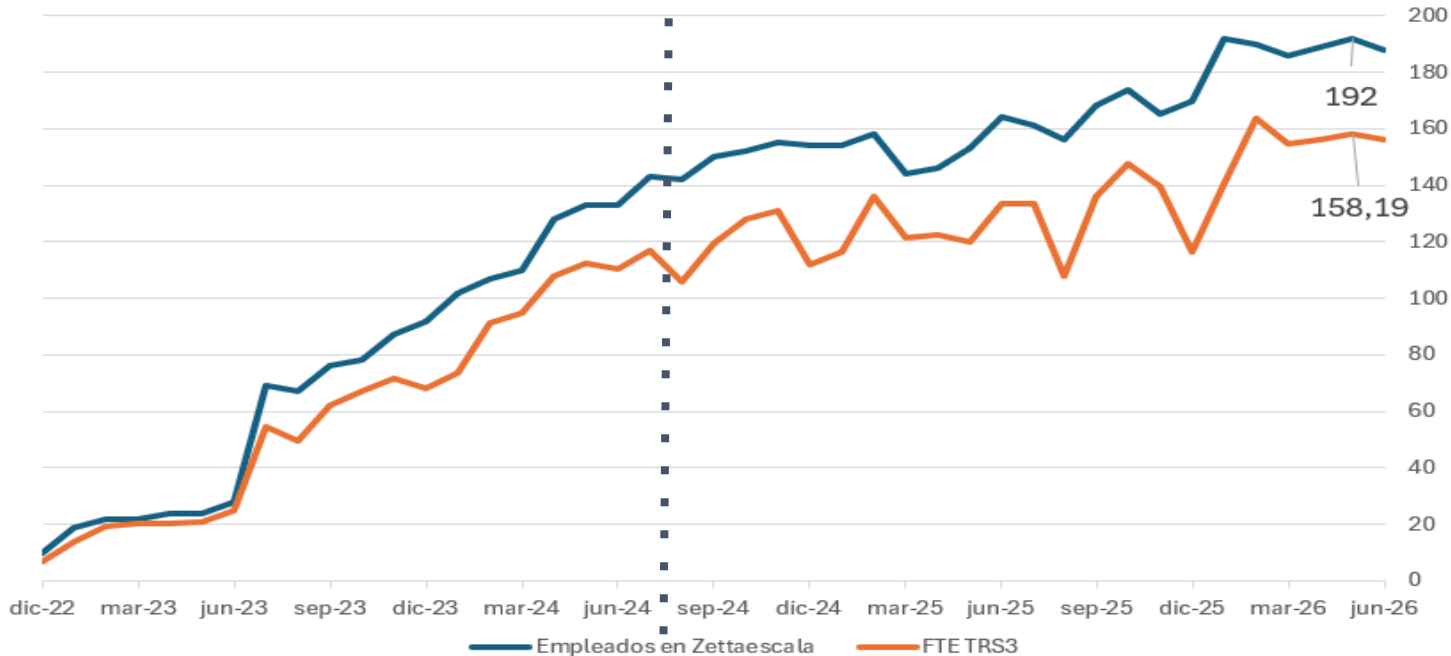
BZL Teams Organization



- Principal Investigator: Mateo Valero
- Chief Architects Office: Adrián Cristal, Osman Unsal, Miquel Moretó, M. Valero
- Support: Sheila Garcia (PMO), David Estepa (HR), Miguel Yebra (Finance), Renata Gimenez (Dissemination), Rafael Gomà (Quality Assessment)
- HW coordinator: Miquel Moretó
- Architecture M&S: Adrià Armejach
- RTL implementation: Luis Plana
 - OoO core: Jonnatan Mendoza
 - VPU: Francesco Minervini
 - Uncore: Lluc Alvarez
 - Integration: Juan M. de Haro
- Design Verification: Oscar Palomar
- FPGA prototyping: Behzad Salami
- Physical design: Francesc Moll
- Chip bring-up: Francesc Moll
- HW DevOps: Teresa Cervero
- SW coordinator: Xavier Teruel
- Operating System: Xavier Martorell
- SDV: Filippo Mantovani
- Compilers: Roger Ferrer
- Tools: German Llort
- Libraries & Frameworks: Rosa Badia
- Resource Managers: Xavier Teruel
- HPC Applications: Xavier Teruel



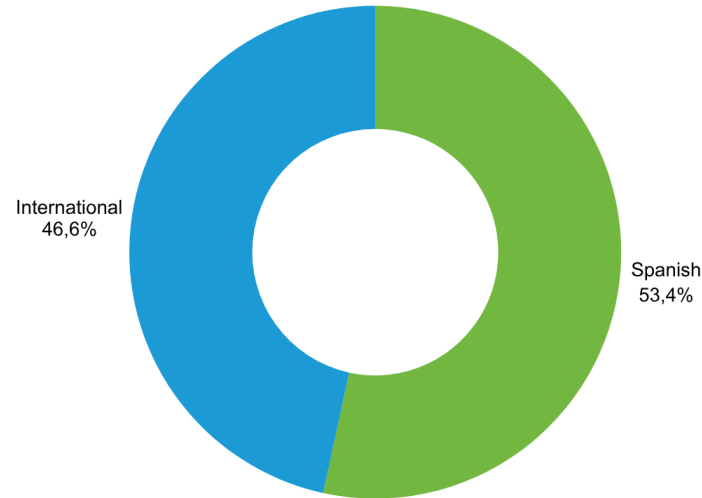
BZL Team Evolution



- Two project phases for the BZL Team:
 - Creation and growth (Dec'22 – June'24)
 - Estabilization and perform (Jul'24 – Jun'26)
- Current team
 - 192 Employees
 - 158 Full Time Employees



Reported Staff by Nationality



- Total of 294 reported staff
- **Talent attraction** of international (46,6%) and national engineers (53,4%)
- **Talent retention** at BSC (75%) and national industry (10% and growing)
- Europe (10%) and USA (5%)