

Advanced Computing Research Ecosystem in LAC

From HPC SCALAC Observatory



SCALAC

Sistema de Computación Avanzada
para América Latina y el Caribe

23-25 April 2026 INPEX 2Workshop 2026

Carlos J. Barrios H.
SCALAC-INRIA



- **33 Independent Countries**
- **19 Overseas Territories**
 - 3 Autonomous Non Sovereign Countries (NL)
 - 3 Special Municipalities (NL)
 - 3 DOM (FR)
 - 2 Collectivities (FR)
 - 6 Overseas Lands (UK)
 - 1 Unincorporated Territory (Puerto Rico)
- **2 Autonomus Region**

530 Top Level Universities in the Region (QS 2026)

- 14 Top Universities in Computer Science (QS □ THE)
- 6 in Shanghai Ranking <100 (Brazil, Chile and Mexico)
- Strong collaboration with Europe: Spain, Portugal, France and Germany.
- 1,869 officially recognized higher-quality education institutions by European Union.
- **33 SNCTI Systems** + 300 High Impact Research Centers
- + 250000 High Level Researchers
- + 2000 Active Researchers (In HPC/HTC/AI/QC/Computing Continuum Subjects)
- + 30 in Advanced Computing (or related) Public and Private
- **HPC/Advanced Computing Community joins SCALAC.**

<https://scalac.redclara.net>

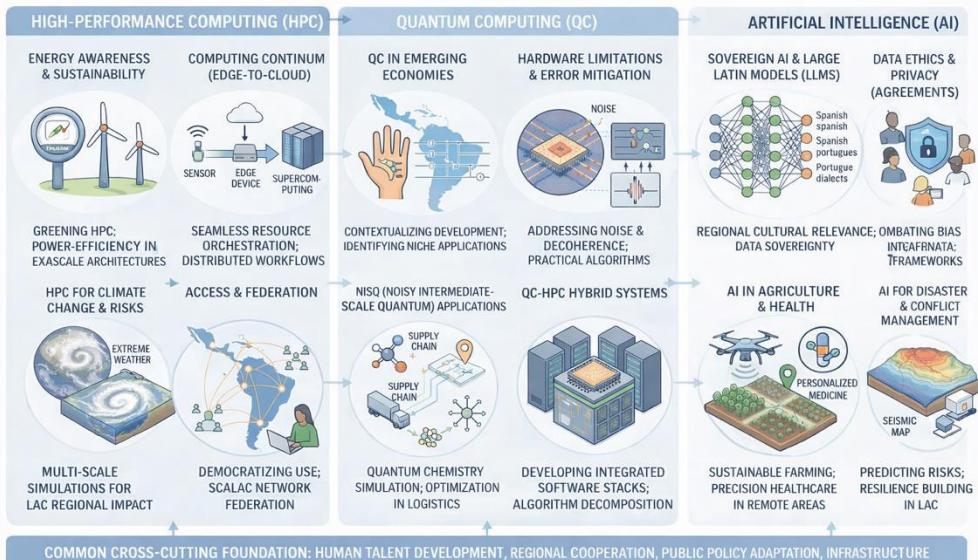
SCALAC: a Multi-Scale HPC Ecosystem



- As a Multi-scale HPC systems, SCALAC handles diverse workloads using advanced computing infrastructure for large data processing.
- This HPC ecosystem includes components that interact to create workflows and form a computing continuum.
 - People
 - Infrastructure
 - Applications
 - Knowledge
- Computing continuum activities manage massive workloads in data processing, transfer, and storage.
 - Traditional Science Workloads
 - AI Workloads

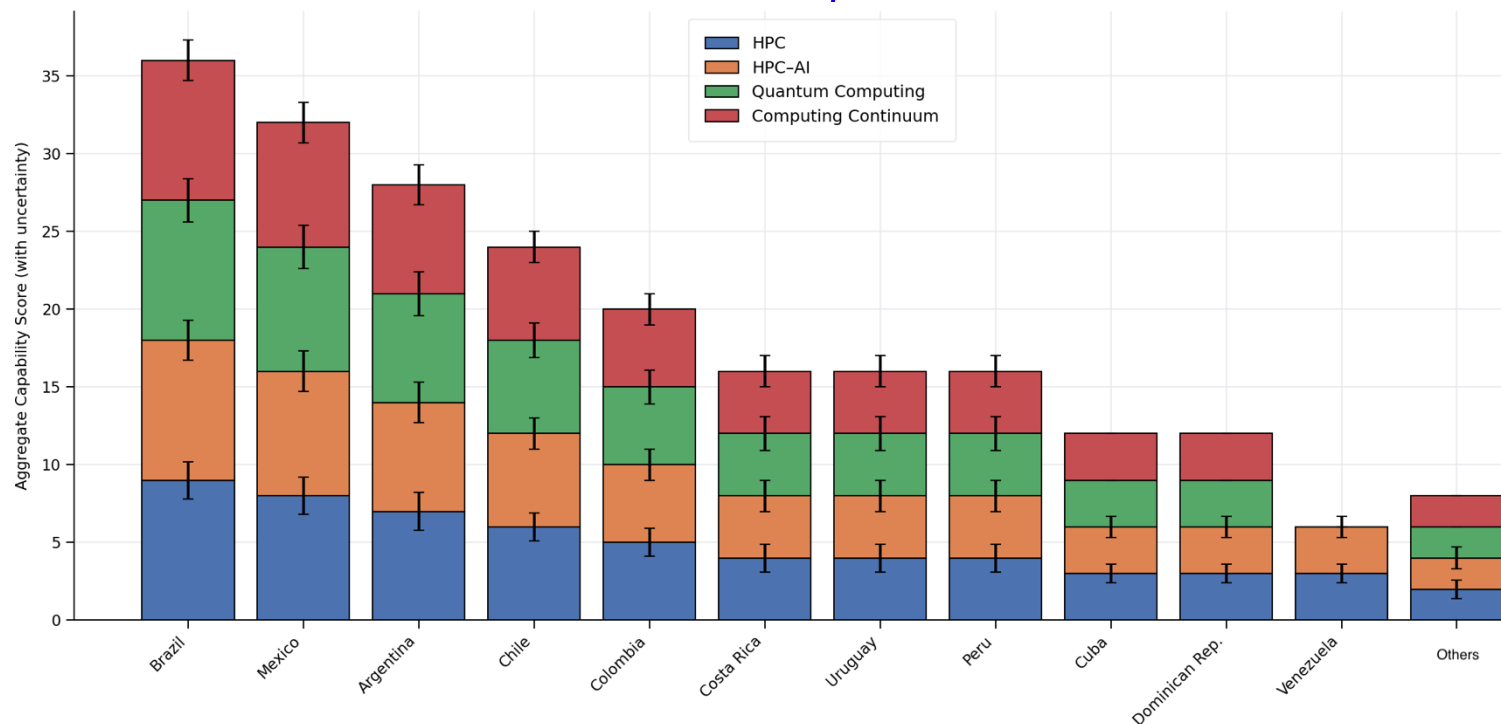
LAC Core Research and Hubs

CORE RESEARCH CONCERNS IN HPC, QC, AND AI FOR LATIN AMERICA AND THE CARIBBEAN LAC



- **Brazil** is the leading hub with major HPC centers and collaborations (via SCALAC). It hosts advanced HPC/AI projects and quantum computing initiatives.
- **Mexico**: Significant investment in HPC and AI, with strong academic and industrial participation.
- **Argentina and Chile**: Both nations are emerging leaders, with Chile hosting new AI HPC centers and Argentina contributing to HPC and computing research.
- **Colombia**: Active in HPC-AI and computing continuum research, with collaborations in advanced computing trends.
- **Other countries (Costa Rica, Peru, Uruguay, Venezuela, Dominican Republic, Jamaica, Panamá...)**: « Smaller » but growing contributions, mainly through regional collaborations and applied HPC/AI Computing Continuum projects.

LAC Publications (CARLA Conference Series)



Some SCALAC Support for Uses Cases



- **Astronomy and Astrophysics**
- **LaConga/EIBongo Project**

- **Extreme Weather Events**
- Climate Exchange
- Volcanic Activity
- Amazonian Protection
- Oceanic Observation

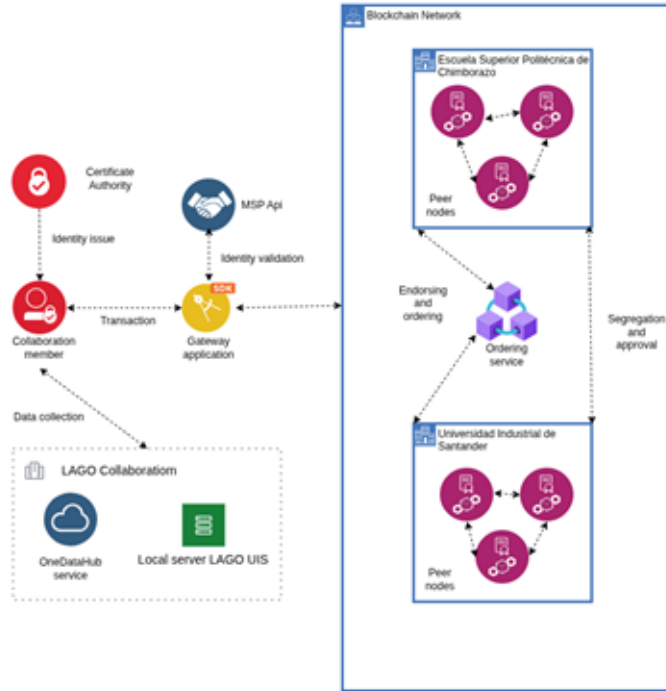
- **BioScience, Healthcare, and Scalable Analysis**
- HPC/ AI
- Data Analysis and Digital Twins
- Biomaterials

- **Smart Cities and Sustainability**
- Smart Territories
- Sustainable Information
- **Sustainable HPC Testbed Data Centers**
- Intercontinental Data Processing (BELLA-2 Project)

- **Mobile AI Vehicles**
- Agriculture uses
- Civil Infrastructure Monitoring and Attention
- Protection of Historical and Cultural Sovereignty

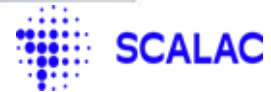
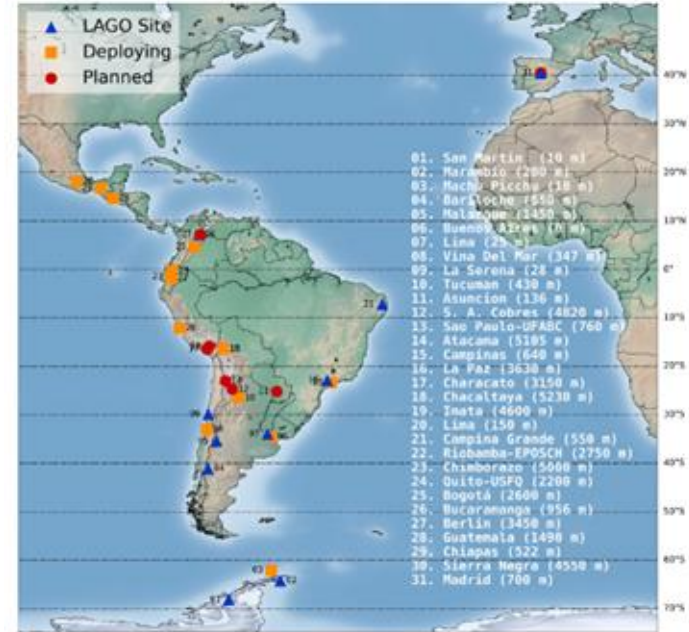
LaConga/ ElBongo Project :

<https://elbongo.redclara.net>

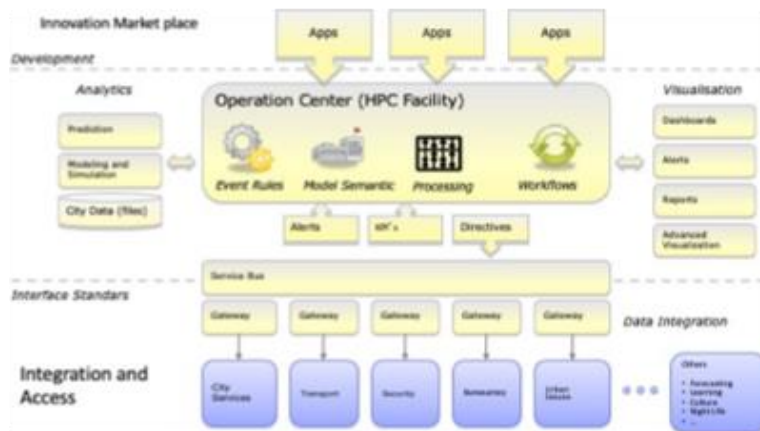


Full-scale
prototype

Monitoring

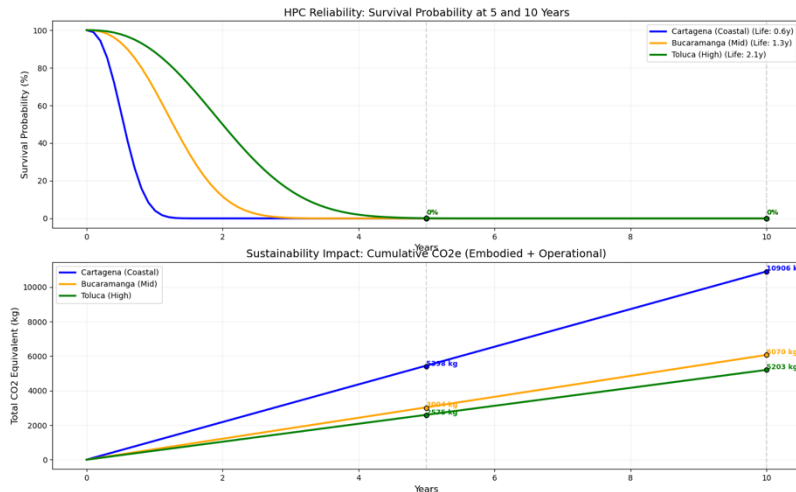
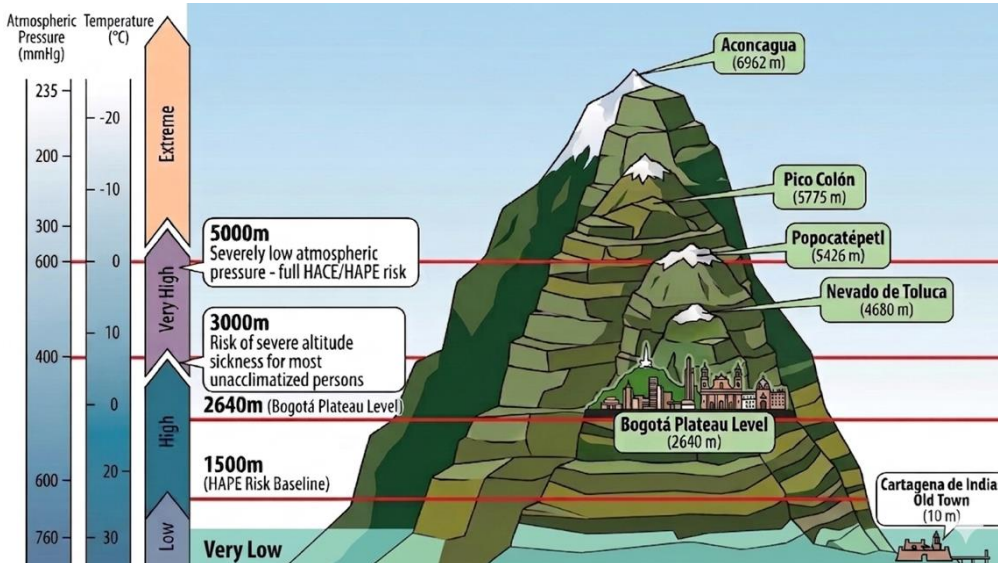


SmartTerritories



- Energy consumption and computing performance prediction
- Data hierarchy
- Cloud visibility model
 - In-Situ Cloud/HPC Support
- Data visualisation
- Link between nano-clouds

HPC Testbed Sustainable Data Centers



Simulation assesses altitude, usage, power stability, and corrosion to determine hardware lifespan, aiding sustainable upgrade and data HPC/AI center decisions.


SCALAC

 Advanced Computing System for
 Latin America and the Caribbean

RedCLARA

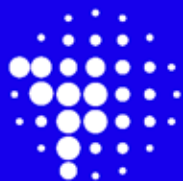




CARLA CORDOBA
ARGENTINA 2026
September 21-25

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scalac.redclara.net

carlos.barrios@scalac.redclara.net

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