ARNES Data Center: Connecting Open Science and Supercomputing

A celebratory event was held on May 6, 2025, to mark the start of construction of the ARNES data center. The data center will integrate the capabilities of the new Slovenian supercomputer, the Slovenian Artificial Intelligence Factory (SLAIF), permanent storage of research data, and infrastructure to support open science. This strategic investment will establish a central Slovenian hub for open science and supercomputing.

Designed to the highest international standards, the data center will be located near the Mariborski otok hydroelectric power plant and will be directly connected to the European research backbone GÉANT, ensuring reliable international connectivity and integration with other European infrastructures. By incorporating sustainable design, state-of-the-art infrastructure, and long-term data storage, the center will accelerate the development of artificial intelligence and supercomputing and stimulate international scientific cooperation. Access to cutting-edge research infrastructure is crucial for the advancement of science and the realization of the European Open Science Cloud (EOSC), in which ARNES' data center in Maribor will play a leading role.

ARNES, as the offical leader of the Slovenian Supercomputing Network SLING, coordinator of the National Competence Center for Supercomputing (NCC Slovenia), an appointed member of EOSC and an important player in the Slovenian open science community, is creating an infrastructure that will enable Slovenian researchers to participate equally in international projects, implement the principles of open science and responsible data management. The center will also serve as a colocation facility for other institutions.

The center will host Slovenia's most powerful supercomputer as part of the Slovenian Artificial Intelligence Factory (SLAIF) project, which is co-financed by the European High-Performance Computing Joint Undertaking (EuroHPC JU) and the Republic of Slovenia (Ministry of Digital Transformation, Ministry of Higher Education, Science, and Innovation). This will provide Slovenia with a strategic space for the development of artificial intelligence and establish its position in the European data analytics and high-performance computing network, which connects science, the public sector, and the economy.

The construction of the data center is expected to be completed in 2026, and the new national supercomputer is expected to be operational by the end of 2026 or early 2027. The center, which will cover 1,800 m^2 on two floors, is designed to be sustainable. The area around the Drava power plants and the direct connection to the Mariborski otok hydroelectric power plant enable the use of a renewable energy source – the Drava River. To reduce the impact on the environment, key partners signed a letter of intent at the groundbreaking ceremony to collaborate on the project »Uporaba odvečne toplote iz podatkovnega centra Arnes in superračunalnika v Mariboru«.

The project, which is part of the Recovery and Resilience Plan, is funded by the European Union in cooperation with the RS, Ministry of Higher Education, Science, and Innovation.