SUPERCOMPUTER SUPEK

year 2023

MEP SOLUTIONS

The company MEP designed and installed a highly efficient cooling system and power supply for the most powerful supercomputer in the Republic of Croatia - the Supek supercomputer, ensuring optimal operating conditions.

PROJECT BACKGROUND

Through the implementation of the Croatian Scientific and Educational Cloud **(HR-ZOO)** project, led by the University Computing Center of the University of Zagreb **(Srce)**, a new generation of national e-infrastructure has been established. Advanced computing and storage resources, along with the digital services built on them, have been made available to the academic and scientific community, essential for modern and multidisciplinary science, cutting-edge research, and the educational system of the Republic of Croatia.

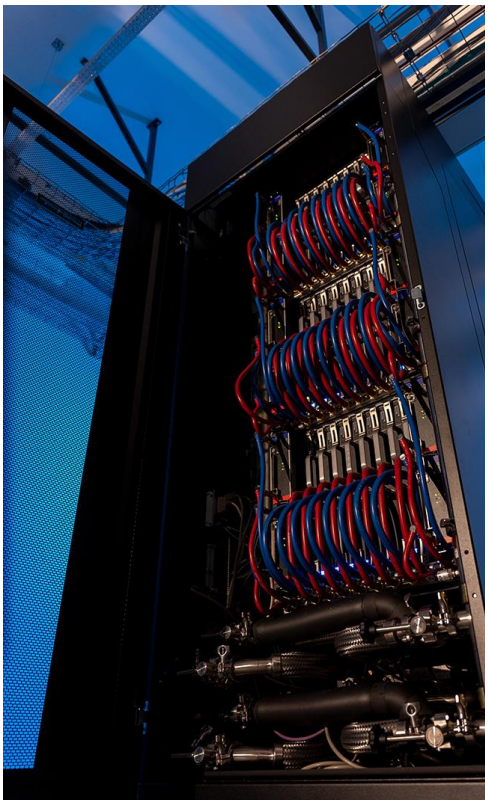
The HR-ZOO project focused on the construction of a network of data centers at universities in Osijek, Rijeka, Split, and Zagreb, in which the company MEP participated as one of the subcontractors. MEP was involved in project activities related to the design and equipping of data centers, as well as the procurement and installation of advanced ICT resources, including the construction of the cooling system for the **supercomputer "Supek."**

The HR-ZOO project was co-financed by **the European Union** from the European Regional Development Fund.

CONSTRUCTION OF THE COOLING SYSTEM

Liquid cooling can improve energy efficiency and promote sustainability in data center operations. Data centers with liquid cooling can achieve lower **Power Usage Effectiveness (PUE)** by operating at higher temperatures, expanding the potential for free cooling even in warmer climates.

By reducing reliance on mechanical cooling, energy consumption is significantly decreased. Additionally, liquid cooling maximizes cooling efficiency due to its high heat transfer capability and higher operating temperatures.



The company MEP designed and implemented a solution that ensures high redundancy and availability of the power and cooling systems for the "Supek" supercomputer, providing a cooling capacity of nearly **100 kW** within a single rack, with very high precision in the inlet temperature of the cooling medium.

The required highly efficient cooling system operates in **free cooling** mode at ambient temperatures up to **27°C**, ensuring minimal electrical energy consumption for cooling.

The company MEP ensured high redundancy and availability of the power and cooling systems with minimal electrical energy consumption

MEP LTD – RELIABLE PARTNER

Founded in 1996, MEP designs and implements critical power and cooling systems for industry, public sector, commerce, maritime, and data and telecommunications infrastructure. With extensive experience and high-quality services, we continuously expand our business portfolio and collaborate with leading global equipment distributors, including APC by Schneider Electric, Eltek Power, KOHLER SDMO, Schneider Electric, Stulz Klimatechnik, CSB Battery, and many others.

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