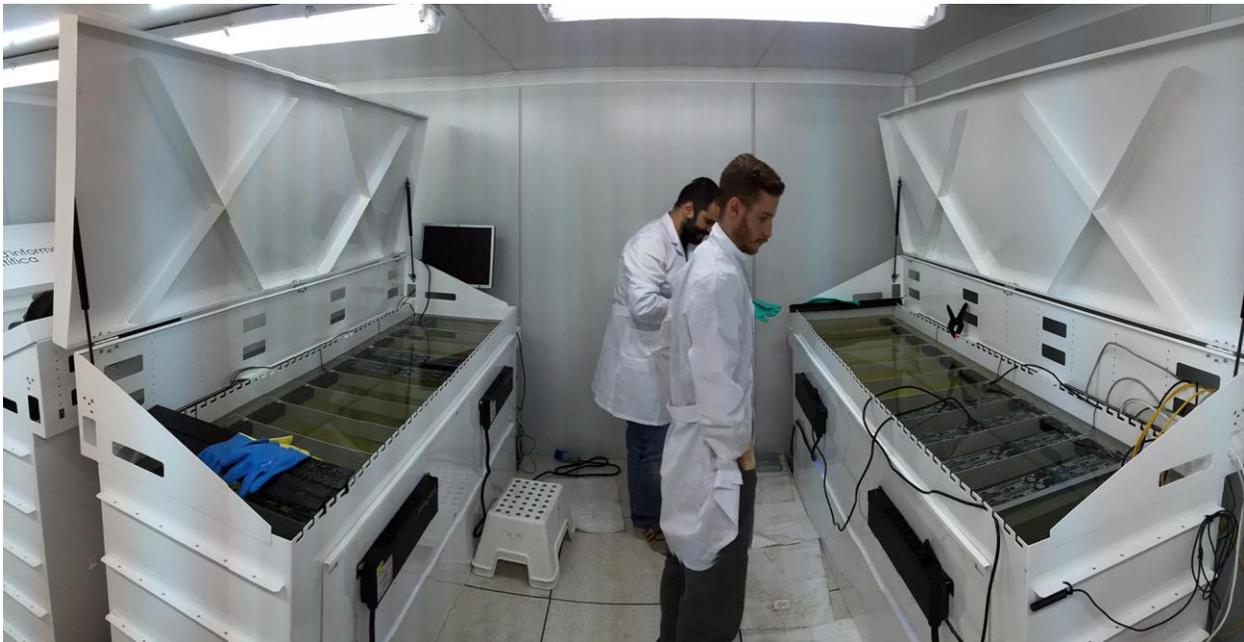




Press Release

GRC's Oil Immersion Cooling System at PIC Supports Data Processing for The Large Hadron Collider at CERN

PIC in Barcelona, Spain shares key performance and reliability results from its immersion cooled data-intensive cluster.



[April 19, 2017 – Austin, TX] Green Revolution Cooling (GRC), a leader in immersion cooling, today announced key performance and reliability results from its installation at Port d'Informació Científica (PIC) in Barcelona, Spain. The ultra-efficient cluster installed in October 2015 has since been used to process dozens of Petabytes of data from CERN's Large Hadron Collider, and leading-edge astrophysics projects.

“The GRC system has beaten all expectations in terms of performance and reliability,” said Vanessa Acin Portella, IT Team Leader at PIC “We’ve had zero server or cooling failures in the 18 months that the system has been running.”

GRC's oil immersion cooling system, as the name suggests, immerses servers in an oil bath. The mineral oil based coolant called ElectroSafe, is an electrical insulator with 1,200x the heat capacity of air, making it ideal for cooling IT equipment. There are several advantages of using immersion cooling over traditional air cooling, this technique eliminates the need for any type of air conditioning or specialized facility design for data centers. This reduces the upfront cost of building a data center facility, while reducing energy use by up to 50%. Apart from the cost savings, the system also helps improve server reliability by protecting them from hot spots, dust, moisture, oxygen, and vibrations.

Another key feature of the PIC facility is that it has zero water consumption. Data center water utilization has been a growing concern lately. Traditional air cooled data centers consume large amounts of water to support chillers and air conditioning systems. GRC's immersion cooling technology, on the other hand, can eliminate water consumption by using dry coolers instead of evaporative cooling towers in most climates. "Water is the next frontier for data center efficiency and sustainability." Said Christiaan Best, Founder and CTO of GRC. "Delivering waterless cooling around the year, is just another way we're helping environmentally conscious customers [like PIC] achieve their data center and sustainability goals." He added.

"The [GRC] system's ability to support close to 50kW of IT load per rack, without any air conditioning, refrigerant, or water use is what made it attractive to us," added Vanessa, "We had limited space, power, and cooling. GRC's technology made it possible to add capacity in a storage area, while reducing power requirements by 30%."

Given the superior reliability and performance of the GRC system, PIC plans to explore the use of custom whitebox hardware to further exploit the cost savings offered by the GRC System.

About PIC

Created in 2003, PIC is a joint undertaking of the Spanish and Catalan governments through CIEMAT and IFAE. PIC has been designated by the Spanish government as its LHC Tier-1 centre, and it is the main (Tier-0) data centre for the MAGIC telescope and the PAU dark energy survey. PIC is also a Scientific Data Center for the EUCLID satellite of the European Space Agency and is ramping up its support for the next-generation Cherenkov Telescope Array (CTA). PIC maintains a transversal innovation activity with many significant results over the years, related to software, hardware, monitoring and energy efficiency.

Visit www.pic.es for more information.

About GRC

[Green Revolution Cooling](#) is a pioneer and leader in the liquid immersion cooling market for data centers. GRC's [CarnotJet System](#), a rack-based immersion cooling system for servers, uses a mineral oil based dielectric coolant that eliminates the need for chillers, air conditioners, and air handlers. Thereby, helping cut [data center construction costs by up to 60%](#), while reducing [data center cooling energy by up to 95%](#). GRC's solutions have helped some of the largest cloud, HPC, and telecom organizations build extremely efficient, cost effective, and resilient data centers across the globe. Visit www.grcooling.com for more information.

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