
Météo-France

A long-standing collaboration with Atos to tackle meteorological challenges

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Atos

As No.1 in High Performance Computing in Europe, Atos has developed strong expertise in the field of meteorology, especially in weather forecasting and climate change. Atos and Météo-France have been collaborating several times since 2014. Météo-France has renewed its trust in Atos in 2019 to tackle new challenges.

The context

Météo-France is a major actor and expert in the meteorology and weather services sector, placed under the tutorship of the French Minister of the ecological and solidary Transition (Ministère de la Transition écologique et solidaire). Its first mission is to observe and predict the weather on a global scale and to alert on the weather dangers on the French territory.

Météo-France helps the public authorities in their decisions (the State, the public entities, emergency services...), accompanies the citizens on a daily basis, facilitates decision making for a large part of the economic sectors and develops innovating and always more reliable weather services, that benefit to all.

One of Météo-France's strengths is to cover all fields from the operational part to research, at all time and space scales.

Atos, a global leader in digital transformation is a major actor in the digitalization of the energy and utilities sector. Over the past years, Atos has developed a strong expertise in the field of meteorology, especially in weather forecasting and climate change. Atos and Météo-France have been collaborating since 2014. [Météo-France has renewed its trust in Atos in 2019 to tackle two different challenges.](#)

“In a context of energy transition and fight against global warming, this innovative service will support the development of renewable energies within the French and European electricity grid. [...]”

Valérie Mermoud

Director of the Energy Market at Météo-France

The challenges

Increase Météo-France computing power

Provide Météo-France clients enhanced, more precise and reliable forecasting information and refine its studies on the impact of climate change. This could be achieved by providing an increase of Météo-France computing power.

Improve numerical modeling and climate predictions

Identify solution to store and managed the vast volumes of data, which are mainly produced by the organization's weather forecasting models and by its research work on climate change. This will have been made possible thanks to the supply of a new mass storage system to Météo-France.

The solution

Two BullSequana XH2000 to increase Météo-France computing power

Atos and Météo-France have continued the collaboration they had begun in 2014 in High Performance Computing.

Indeed, following a competitive dialogue procedure in which major HPC players took part, Atos has signed a new four-year contract with Météo-France to supply two supercomputers based on its latest BullSequana XH2000 technology. The BullSequana XH2000 boasts optimum energy-efficiency with its 100% highly-efficient water-cooled patented DLC (Direct Liquid Cooling) solution. This minimizes global energy consumption by using warm water up to 40°C. The two BullSequana XH2000 platforms integrate the latest generation of AMD's EPYC x86 processors.

For the first time, Météo-France is renewing a supercomputing supplier. The first BullSequana XH2000 supercomputer is installed at the Centre National de Calcul de Météo-France in Toulouse. The second is installed at Espace Clément Ader (Toulouse Montaudran). These two computers are currently used for operational weather forecasting and research in atmospheric, ocean and climate sciences.

Atos boosts Météo-France's data storage capacity to over 1 exabyte in 2025 to improve numerical modeling and climate predictions

Atos has signed a third contract with Météo-France to supply a new mass storage system to store and manage the vast volumes of data, which are mainly produced by the organization's weather forecasting models and by its research work on climate change.

The new storage system is based on the HPSS (High Performance Storage System) solution for which Atos has developed a complete environment which monitors and administrates storage performance and provides support and maintenance throughout the whole lifecycle. This architecture combines disk and tape storage technologies, guaranteeing efficient access times for the most frequently used data, while keeping less frequently accessed data accessible (nearline) in tape robotics. Atos is one of the few experts able to develop and install this type of solution globally.

The collaboration confirms Atos' excellence and strong capabilities in providing and managing mass storage systems.



The results

Scientific breakthroughs in weather forecasting and climate change predictions

The latest BullSequana XH2000 systems multiply Météo-France's computing power by more than 5, compared to its previous solution, enabling it to achieve several scientific breakthroughs in weather forecasting. Each new supercomputer is capable of processing more than 10 million billion operations per second and are amongst the most powerful meteorological supercomputers in the world.

The increased computing power enables Météo-France to improve on and announce further in advance unexpected small-scale high-impact meteorological phenomena (such as intense rainfall, gales and the risk of hail) and refine its studies on the impact of climate change.

Managing and storing a massive amount of meteorological and climate data

Annual extensions over a five-year period, will enable the storage capacity to reach 1,3 exabytes (1,300 petabytes) by 2025, enabling it to ingest and render up to 2 and 1.3 petabytes of data per day, respectively. This makes Météo-France one of the first organizations worldwide to have such a substantial amount of meteorological and climate data stored on one system.

“We're really excited to be working again with Météo-France to boost its computing capacity with our BullSequana XH2000 supercomputers.”

Pierre Barnabé

Head of Big Data & Security at Atos

“I am very proud that Météo France has renewed its confidence in our unique capacity and expertise in storage solutions to implement this project in order to manage this continuous growth of data down to the exabyte level.”

Agnes Boudot

Senior Vice President, Head of HPC & Quantum at Atos



About Atos

Atos is a global leader in digital transformation with 105,000 employees and annual revenue of over € 11 billion.

European number one in cybersecurity, cloud and high performance computing, the Group provides tailored end-to-end solutions for all industries in 71 countries. A pioneer in decarbonization services and products, Atos is committed to a secure and decarbonized digital for its clients. Atos operates under the brands Atos and AtosSyntel. Atos is a SE (Societas Europaea), listed on the CAC40 Paris stock index.

The purpose of Atos is to help design the future of the information space. Its expertise and services support the development of knowledge, education and research in a multicultural approach and contribute to the development of scientific and technological excellence. Across the world, the Group enables its customers and employees, and members of societies at large to live, work and develop sustainably, in a safe and secure information space.

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Let's start a discussion together



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