CCRT boosts industrial innovation with a petascale supercomputer from Bull

Paris, 4 February 2016 – Following a tender bid, the French Alternative Energies and Atomic Energy Commission, CEA, and its industrial partners at the Centre for Computing Research and Technology, CCRT, have invested in a new petaflop[1] supercomputer of ~1.4 Pflops, designed by Bull, the Atos brand for technology products and software. Three times more powerful than the current computer at CCRT, it will be installed in the CEA's Very Large Computing Centre[2] in Bruyères-le-Châtel, France, mid-2016 to cover expanding industrial needs.

This new supercomputer, called COBALT, has a peak computing/performance capacity of ~1.4 Pflops, will be three times more powerful than the current computer and three times more energy efficient. A private storage system, external to the computer, with a storage capacity of 2.5 Pbytes [3] with a throughput of 60 GB/s shall enable users to store their data.

It shall have 2304 Intel® Xeon® E5 processors (Broadwell) with a total of 32,256 cores at 2.4 Ghz and 18 hybrid nodes with Nvidia Pascal processors, for remote computing and visualisation. The partition dedicated to the France Génomique[4] project shall in turn, be equipped with 4032 Intel® Xeon® E5 Broadwell cores at 2.4 Ghz and 4 very large memory nodes at 3TB/node. An InfiniBand EDR interconnect solution (100 GB/s vs. 40 GB/s currently) forms the core of this new computer and will allow it to increase capacity based on the needs of its partners for the coming 4 to 5 years.

The mandate of the CCRT is to support digital simulation development, particularly in the industrial world. Established in 2003, based on a unique partnership model in France, it has demonstrated its capacity to respond sustainably to the needs of industry partners. It offers a wide range of high performance computing (HPC) competencies, tailored to the growing needs of its partners, combining security and flexibility in its use of resources.

Teams from Airbus D&S, Areva, EDF, Herakles, Ineris, L'Oréal, Safran Tech, Snecma, Thales, Thales Alenia Space, Techspace Aero, Turbomeca, Valeo and CEA shall have the highest class computing resources at their disposal, necessary for developing their projects in the future. Research into the lifetime of power plants, the design and safety of nuclear reactors, the development of aircraft and helicopter engines, optimisation of car ventilation and air conditioning systems, the design of radar systems, environmental risk analyses, studying proteins and decoding the genome, predicting the performance of cosmetics or even the search for new materials are all areas in which numerical simulation is growing rapidly.

Philippe Vannier, Executive Vice President Big Data & Security at Atos concludes: "The renewed confidence of the CEA and CCRT in Bull technologies is something we are very proud of at Atos. This project is a new milestone accomplished within our exascale programme which aims to develop a new generation of supercomputers by 2020 capable of achieving performance levels in the order of exaflops, a billion billion calculations per second, while at the same time significantly reducing energy consumption."

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[1] 1 petaflop: a quadrillion operations per second.

[2] The Very Large Computing Centre is a facility capable of hosting supercomputers, with all the IT resources and services tailored to high performance computing.

[3] 1 petabyte: a quadrillion bytes of memory.

[4] The CCRT hosts the data processing infrastructure of the France Génomique project. The latter groups together and pools the resources of the main French genome and bioinformatics platforms.

P. Stroppa/CEA

About CEA
The French Alternative Energies and Atomic Energy Commission is a public body established in October 1945 by General de Gaulle. A leader in research, development and innovation, the CEA is active in four main areas: low-carbon energies, defense and security, information technologies and health technologies. The CEA's Military Applications Division ("DAM") takes charge of defense and security missions.

About Bull
Bull is the Atos brand for its technology products and software, which are today distributed in over 50 countries worldwide. With a rich heritage of over 80 years of technological innovation, 2000 patents and a 700 strong R&D team supported by the Atos Scientific Community, it offers products and value-added software to assist clients in their digital transformation, specifically in the areas of Big Data and Cybersecurity. Bull is the European leader in HPC and its products include bullx, the energy-efficient supercomputer; bullion, one of the most powerful x86 servers in the world developed to meet the challenges of Big Data; Evidian, the software security solutions for identity and access management; Trustway, the hardware security module and Hoox, the ultra-secure smartphone. Bull is part of Atos. For more information: www.bull.com

About Atos
Atos SE (Societas Europaea) is a leader in digital services with pro forma annual revenue of circa EUR 12 billion and 100,000 employees in 72 countries. Serving a global client base, the Group provides Consulting & Systems Integration services, Managed Services & BPO, Cloud operations, Big Data & Cyber-security solutions, as well as transactional services through Worldline, the European leader in the payments and transactional services industry. With its deep technology expertise and industry knowledge, the Group works with clients across different business sectors: Defense, Financial Services, Health, Manufacturing, Media, Utilities, Public sector, Retail, Telecommunications, and Transportation. Atos is focused on business technology that powers progress and helps organizations to create their firm of the future. The Group is the Worldwide Information Technology Partner for the Olympic & Paralympic Games and is listed on the Euronext Paris market. Atos operates under the brands Atos, Atos Consulting, Atos Worldgrid, Bull, Canopy, Unify and Worldline.

For more information, please contact:
CEA : Nicolas Tilly – +33 1 64 50 17 16 – nicolas.tilly@cea.fr
Atos : Jose de Vries +31 6 30 27 26 11 - jose.devries@atos.net