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Ter@tec:

2 years old and a brilliant future

The young technopole set up near Arpajon brings together researchers, engineers and industrial partners in one place. All specialise in high performance numerical simulation. It's a unique place in France...

Bruyères-le-Châtel in Essonne. Outside the high security centre of the Department of Military Applications of the Commissariat à l'Energie Atomique (DAM/CEA), two two-storeys buildings accommodate sixty or so people coming from the world of research, computing and industry. They all have one thing in common: they are working in the field of intensive computing in the young technopole Ter@tec. "It's a unique place in France," enthuses Christian Saguez, President of Ter@tec.

The idea of Ter@tec originated over the years 2003 and 2004 on the initiative of the Directors of CEA/DAM. Their objective? To open up more to outside influences and to let the scientific and industrial community benefit from their experience and their resources in computing. "We first created the Centre of Computing, Research and Technology (CCRT). Very soon after, we formed direct relationships with Universities and major industrial groups (EDF, Snecma, Onera, etc.). We put at their disposal a 2 teraflop machine. And little by little, thanks to these collaborations the computing centre has grown," recounts Jean Gonnord, Head of the Numerical Simulation and Computing Project at the CEA/DAM. "Then it

seemed essential for us to move on from the simple provision of large computational resources," adds Christophe Behar, Director of the CEA/DAM Ile-de-France Centre. "So we thought of grouping together around the same objective – high performance computing – with industry, whether they are users or from the computing world itself, and with laboratories. This is how the Ter@tec Project was born."

Since then start-ups (Distène and Numtech) and the constructors (HP and Bull) have joined the technopole. "Today we have twenty partners*," says Christian Saguez, "and the demands are increasing from both researchers and industry."

Because intensive computing is a strategic challenge. It means that research can progress in scientific and technical fields as varied as electronics, aeronautics, the safety of nuclear reactors, climate change, genomics and the properties of material. On the industrial side, intensive computing is synonymous with competitiveness. "Industry has no time to lose. So it's good if they can turn to simulation for the design and development of competitive new products. As in other domains it has

replaced experimentation which has become too costly in terms of time and money," explains Christophe Béhar. So where do the constructors stand? "In the world of computing scientific computation leads the way, it is a niche where the hardware is very sophisticated. And it's this hardware that we will later find in general use in industrial computing," explains Christian Saguez.

For the moment Ter@tec offers a total computational power of 7 teraflops: 4 teraflops from CCRT is added to the 2 teraflop Teranova machine from Bull and 1 teraflop from HP.

A technopole looking to the future. "With the arrival of Tera-10 the DAM decided to increase its computational power up to 50 Teraflops. In addition, with the Arpajon community we are going to buy surrounding land in order to build some 8000 m² of new buildings between now and 2009 destined to house other businesses and to support the increase in CCRT's computing power," adds Christophe Béhar. This expansion is even more pertinent as Ter@tec is now one of the key players in System@tic, one of the six world class competitiveness centres. ■

Fabienne Lemarchand

***Among Ter@tec partners are:**

Communication et Systèmes, Dassault Aviation, Distène, École Centrale de Paris, EDF, ENS Cachan, Institut Français du Pétrole, Institut National des Télécom d'Evry, Snecma Moteurs, Turboméca, Université de Versailles-St-Quentin, and local council organisations of Arpajon, Bruyères-le-Châtel and Ollainville.