Teratec, an unique industrial initiative

Gérard ROUCAIROL, TERATEC Chairman
Hervé MOUREN, TERATEC Managing Director

July 1st, 2014

TERATEC: an industrial eco system

Industrial users

Technology providers

Research centres

focused on HPC domain:
to master and push forwards HPC technologies to promote and enlarge their usages

TERATEC Members

The heart of HPC

A techno city dedicated to Simulation and High Performance Computing

Teratec technocity

TERATEC Campus

CEA Very Large Computing Center
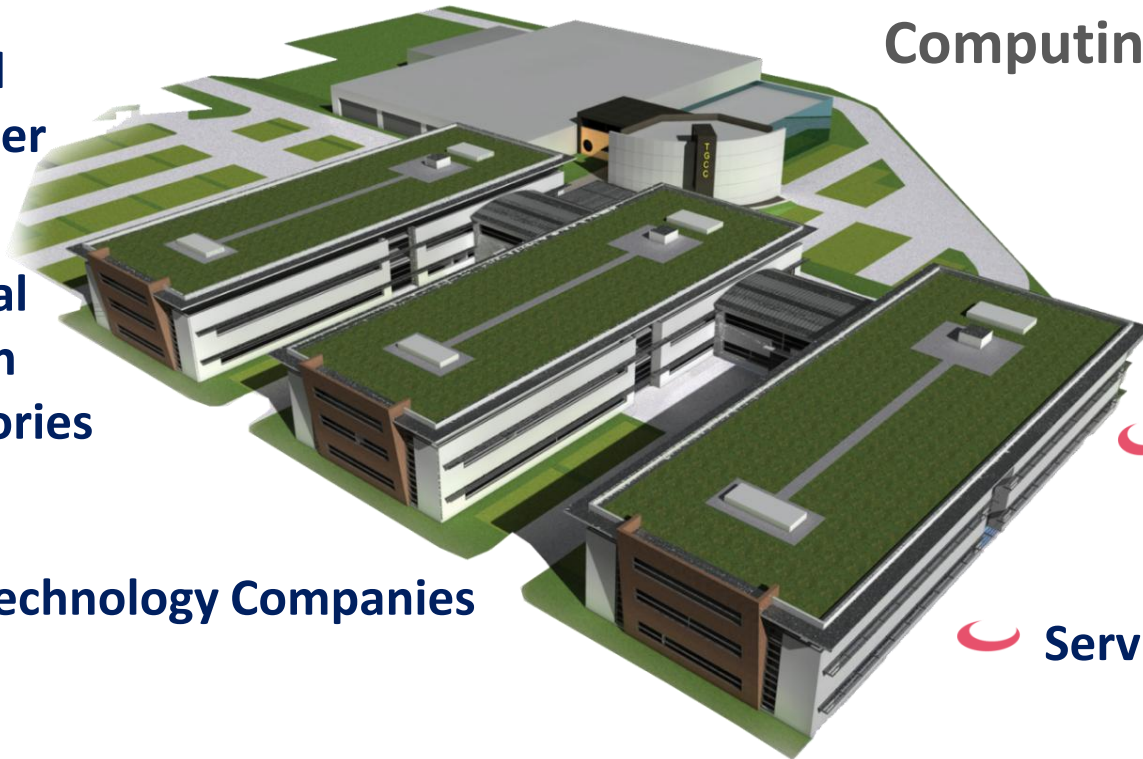
Incubator and Business Center

Industrial Research Laboratories

Training Institute

Technology Companies

Services Platforms

A unique place with active participation of key players of every step of the value chain

Campus Teratec

Operational - 10 000 m²

- **Technology Companies**
  - AVANTIS TECHNOLOGY - BULL – CMI DEFENCE - ESI – SILKAN

- **Incubator and Business Center**
  - The ESSONNE CHAMBER OF COMMERCE AND INDUSTRY accomodates SME's and innovative companies
  - ALLIANCE SERVICE PLUS - ATEM – CYBELETECH - DISTÈNE - EAGOCOM - SCILAB ENTERPRISES - NUMTECH - PARATOOLS
  - Adapted solutions, custom tailored support and high quality service in a technology-rich environment

- **Industrial Labs**
  - Extreme Computing : BULL - CEA
  - Exascale Computing Research : INTEL – CEA – GENCI - UVSQ

Collaborative Projects Industry Research

TERATEC members are key participants in major projects of Advancity, Astech, Cap Digital, Minalogic, Systematic, ANR and ITEA2

- **AGREGATION** - Contrôle commande sûr pour les moyens d'essais

- **AIRCITY** - 3D simulation of air quality in the city with 3m resolution

- **CALLISTO** - Simulation Architecturale Réaliste Immersive

- **DATASCALE** - Big data et Calcul haute performance

- **H4H** - Optimise HPC Applications on Heterogeneous Architectures

- **H4H PERFCLOUD** - Performances pour le cloud

- **ILMAB** - First simulation chain in the construction field.

- **MANYCORELABS** - Software tools for Manycore embedded platforms

- **MECASIF** - Modèles réduits pour la Conception Amont de Systèmes Industriels Fiables

- **MUSICAS** - Méthodologie unifiée pour la simulation de l'intégrité et de la contrôlabilité des assemblages soudés

- **OASIS** - Optimization of Addendum Surfaces In Stamping

- **RICHELIEU -** Accelerate science-oriented programming languages

- **SIMILAN** - SIMulation & Implementation high performance fitted to digitaL signAl processing

- **TERRA X Projets** - Développement d'un ensemble complet d'outils de représentation et de simulations numériques des territoires urbains

A larger scope confirmed

- From Classical Supercomputing to Systems Design, Big Data, Multimedia Creation, Life science applications….

Program extensions

- R&D projects : from French collaborative projects to European and international cooperations
- Education : new initiatives
- Launch of the HPC European Technology Platform, ETP4HPC
- Preparation of the French National Supercomputing Plan

An industrial and WW reference in High Performance Computing

Innovation   **Competitiveness**   **Job creations**

Plenary sessions

09h00 **Opening of the 9th TERATEC Forum**
Gérard ROUCAIROL, Chairman, and Hervé MOUREN, Managing Director , TERATEC

09h30 **Allocution de Pascal FAURE, Directeur Général de la Compétitivité, de l'Industrie et des Services, Ministère de l'Économie, du Redressement productif et du Numérique**

10h00 **Plan Supercalculateurs de la nouvelle France industrielle**
Gérard ROUCAIROL, Hervé MOUREN and Christian SAGUEZ, TERATEC

10h30 **Presentations of the Forum Sponsors**
Platinum Sponsors : BULL – HP – INTEL - Gold Sponsors : CEA – PANASAS

11h00 Coffee Break & Visit of the exhibition & Networking

11h45 **NASA Advanced Computing Environment for Science and Engineering**
Rupak BISWAS, Deputy Director, Exploration Technology Directorate Manager, High End Computing Capability Project

12h15 **NVIDIA's Vision for Exascale**
Cyril ZELLER, Director of Engineering, Developer Technology, NVIDIA

12h45 **Presentations of the Forum Sponsors**
Silver Sponsors : AMD - CARRI SYSTEMS - DATADIRECT NETWORKS - DELL - FUJITSU

13h00 Lunch & Visit of the exhibition & Networking

Plenary sessions

14h30 **The Square Kilometre Array: Transformational Science Instrument and Big Data Challenge**

Paul ALEXANDER, UK Science Director SKA Organisation , Professor in Astrophysics, UNIVERSITY OF CAMBRIDGE

15h00 **Engineering Simulation : Assessment and Challenges of Pre- & Post-processing**

Laurent ANNE, Sales Director and co-founder, DISTENE

15h30 **Le HPC en Europe : les défis, les orientations R&D et la construction d'un écosystème**

Jean-François LAVIGNON, président de l'ETP4HPC

15h45 **Presentations of the Forum Sponsors**

Silver Sponsors : GENCI - MATHWORKS - NVIDIA - SGI - SYSFERA

16h00 Coffee Break & Visit of the exhibition & Networking

17h00 **The UberCloud - Simulations and High Performance Technical Computing in the Cloud**

Wolfgang GENTZSCH, co-founder and President of The UberCloud

17h30 **2004-2014: une décénnie de généralisation et d'industrialisation du calcul haute performance chez Airbus**

Thierry CHEVALIER, R&T Capabilities and V&V architect, M&T Architecture and Integration, AIRBUS

18h00 **Cocktail & Visit of the exhibition & Networking**

A1 - 09h00-12h30 - HPC & BIG DATA APPLICATIONS AND SOLUTION ARCHITECTURES

Chaired by Pascale BERNIER-BRUNA (BULL, Marie-Christine SAWLEY (INTEL), Jean-Philippe NOMINE (CEA) with the participation of Gabriele PACIUCCI (INTEL), Zhiqi TAO (INTEL), Torben KLING-PETERSEN (XYRATEX), Pierre PLEVEN (INSTITUT MINES TELECOM), Ascension VIZINHO-COUTRY (MATHWORKS), Emmanuel LECERF (IBM) and Benoit VAUGON (ARMADILLO)

A5 - 14h00-17h30 - HPC & BIG DATA SOFTWARE COMPONENTS AND TOOLS

Chaired by Pascale BERNIER-BRUNA (BULL, Marie-Christine SAWLEY (INTEL), Jean-Philippe NOMINE (CEA) with the participation of Luigi BROCHARD (IBM), Andrés S. CHARIF-RUBIAL (EXASCALE COMPUTING RESEARCH LAB), William JALBY (UVSQ / EXASCALE COMPUTING RESEARCH LAB), Patrick WOHLSCHLEGEL (ALLINEA) and Eric BOYER (CINES)

A2 - 09h00-12h30 - OPTIMAL DESIGN OF COMPLEX SYSTEMS

Chaired by Jacques DUYSENS (SILKAN), Gérard POIRIER (DASSAULT AVIATION / SYSTEMATIC) with the participation of Samir BEN CHAABANE (SILKAN), Michael HOFFMANN (ALTAIR ENGINEERING), Michel ROCHETTE (ANSYS), S. BOUABDALLAH (ESILV), C. ADAM and H. MAITOURNAM (Ecole POLYTECHNIQUE), M. ZARROUG (PSA PEUGEOT CITROËN) and Gilbert ROGE (DASSAULT AVIATION)

A3 - 09h00-12h30 - SCIENTIFIC COMPUTING & OPEN SOURCE

Chaired by Jean-Marie DAVESNES (SCILAB ENTERPRISES) and Julien JOMIER (KITWARE) with the participation of Christophe PRUD'HOMME (AMIES), Quang DINH (DASSAULT AVIATION), Sébastien DINOT (CS SI) and Ronan KERYELL (AMD)

A4 - 09h00 /12h30 - MATERIALS SIMULATION

Chaired by Gilles ZERAH (CEA) with the participation of Frederic FEYEL (SAFRAN), Christophe DOMAIN (EDF R&D), Matthieu SALANNE (UNIVERSITE PIERRE ET MARIE CURIE), Grégory GENESTE (CEA-DAM) and Aurélien DE LA LANDE (UNIVERSITE PARIS SUD)

A6 - 14h00/17h30 - DIGITAL TECHNOLOGIES FOR PLANT

Chaired by Christian SAGUEZ (CYBELETECH) with the participation of Véronique LETORT (ECOLE CENTRALE PARIS), Olivier BALARD (TELESPAZIO), Valérie MAZZA (Groupe LIMAGRAIN), Emeline DEFOSSEZ, (VEGEPOLYS) and Philippe LEHRMANN (Groupe AXEREAL)

A7 - 14h00/17h30 - HPC AND HEALTHCARE

Chaired by Etienne DE POMMERY and Claude CAMOZZI with the participation of Manuel DAUCHEZ (UNIVERSITE DE REIMS CHAMPAGNE-ARDENNE), Michel ROCHETTE (ANSYS), Silvia POLES (NOESIS Solutions), Frédéric TURQUIER (COVIDIEN Surgical Solutions), Philippe RAVIX (SOGETI HIGH TECH), Benoit DA MOTA (ALLIANCE SERVICES PLUS) and Edouard DUCHESNAY (NEUROSPIN)

A8 - 14h00/17h30 - MODELING AND SIMULATING URBAN SYSTEMS

Chaired by Gérard HEGRON (IFSTTAR / ADVANCITY), Michel MORVAN (THE COSMO COMPAGNY), Trino BELTRAN (BOUYGUES CONSTRUCTION INTERNATIONAL), Luc FRAUCIEL (1SPATIAL), Laurent LE BRETON (DASSAULT SYSTEMES) and Bernard MATYJASIK (EGIS)

Exhibition

- ACTIVEEON
- ADVANCITY (Espace à Projets)
- ALINEOS
- ALLINEA SOFTWARE
- ALTAIR ENGINEERING
- AMD
- ANSYS
- AS+ GROUPE EOLEN
- BARCO
- BULL
- BUREAU 14
- CAP DIGITAL (Espace à Projets)
- CARRI SYSTEMS
- CCI DE L'ESSONNE
- CEA
- CLUSTERVISION
- COMMUNAUTE DES COMMUNES DE L'ARPAJONNAIS
- COMSOL FRANCE
- CRAY
- CS SI
- CYBELETECH (Pépinière Teratec)
- DATADIRECT NETWORKS

- DELL
- DISTENE (Pépinière Teratec)
- EAGOCOM (Pépinière Teratec)
- EMG2 / BITTWARE
- ENGINSOFT
- ESI GROUP
- ETP4HPC
- EUROTECH
- EXASCALE COMPUTING RESEARCH LAB
- EXTREME NETWORKS
- FUJITSU
- GENCI
- HP
- IBM
- IFP ENERGIES NOUVELLES
- INRIA
- INTEL
- KALRAY
- MATHWORKS
- MEDICEN (Espace à Projets)
- NAFEMS
- NICE SOFTWARE

- NOESIS SOLUTIONS
- NUMSCALE
- NUMTECH (Pépinière Teratec)
- NVIDIA
- OPENSIDES
- OPENTEXT
- OXALYA OVH
- PANASAS
- PEPINIERE TERATEC
- QUANTUM
- ROGUE WAVE SOFTWARE
- SCILAB ENTERPRISES
- SGI
- SILKAN
- SOGETI HIGH TECH
- SYSFERA
- SYSTEMATIC (Espace à Projets)
- TERATEC
- TOTALINUX
- TRANSTEC
- UNIVERSITAT POLITECNICA DE VALENCIA
- XYRATEX

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