

## Projet de recherche

**Nom Projet :** cHiPSet High-Performance Modelling and Simulation for Big Data Applications

**Type du projet :** ICT COST Action IC1406

**Début :** 2015

**Durée :** 48 mois

**Coordinateur du projet :** Joanna Kolodziej (Technical University

**Coordinateur d'AlliansTIC :** Katarzyna Wegrzyn-Wolska

**Responsabilité et tâches d'AlliansTIC :** [Membre du Comité de Management](#),

**Partenaires :** Universités de 29 pays européennes + Bielarussian State University, Chinese Academy of Sciences, George Mason University, University of Notre Dame, University of Sydney)

**Participants d'AlliansTIC :** Katarzyna Wegrzyn-Wolska, Imen Rached, Lamine Bougueroua, Catherine Marechal

**Mots clefs :** High Performance Computing, Modelling and Simulation, Big Data, Data Mining, Dynamic Systems, Data Intensive Computing

**Descriptif court :** The Big Data era poses a critically difficult challenge and striking development opportunities in High-Performance Computing (HPC): how to efficiently turn massively large data into valuable information and meaningful knowledge. Computationally effective HPC is required in a rapidly-increasing number of data-intensive domains, such as Life and Physical Sciences, and Socioeconomic Systems.

Modelling and Simulation (MS) offer suitable abstractions to manage the complexity of analysing Big Data in various scientific and engineering domains. Unfortunately, Big Data problems are not always easily amenable to efficient MS over HPC. Also, MS communities may lack the detailed expertise required to

exploit the full potential of HPC solutions, and HPC architects may not be fully aware of specific MS requirements.

Therefore, there is an urgent need for European co-ordination to facilitate interactions among data-intensive MS and HPC experts, ensuring that the field, which is strategic and of long-standing interest in Europe, develops efficiently – from academic research to industrial practice. This Action will provide the integration to foster a novel, coordinated Big Data endeavour supported by HPC. It will strongly support information exchange, synergy and coordination of activities among leading European research groups and top global partner institutions, and will promote European software industry competitiveness.

**Livrables : Reports (Action Objectives and Grand Periods Goals, Action Short Annual Reports, Research Work Results, Technical Report, WG Annual Reports, STSM Annual Reports, Training School Annual Reports, Dissemination Annual Reports)**