IS-ENES: Infrastructure for the European Network for Earth System Modelling

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Climate Earth system models are key tools to understanding climate change and its effects on society and are at the basis of the International Panel on Climate Change projections. The European Network for Earth System Modelling, ENES, through the EU FP7 Integrated Infrastructure project IS-ENES (2009-2013) coordinated by CNRS/IPSL, promotes the development of a common distributed modeling research infrastructure in Europe in order to facilitate the development and exploitation of climate models and better fulfill the societal needs with regards to climate change issues.

IS-ENES (http://isenes.enes.org) follows four main objectives:
- Foster the integration of the European climate and Earth system modelling community
- Foster the development of Earth System Models for the understanding of climate change
- Foster high-end simulations enabling to better understand and predict future climate change
- Foster the application of Earth system model simulations to better predict and understand future climate change impacts

Improved integration will be achieved through a series of networking activities which will focus on the development of the future ENES strategy, the exchange of expertise and the creation of training activities.

The IS-ENES e-infrastructure will deliver a service on climate models and support the dissemination of model results, especially model projections for the next IPCC Assessment. The IS-ENES service is directed towards both modelling groups and users of model results, especially the impact community. IS-ENES will improve access to model documentation, access to model results, and prototype climate services for the impact community. IS-ENES will use the standards developed by the FP7 ENES METAFOR project "Common Metadata for Climate Modelling Digital repositories". IS-ENES will provide a prototype for a web service interface to bridge the gap between the climate modelling community, the climate impact community and decision makers for developing adaptation and mitigation policies. A set of Use cases will be documented as well as tools and methodologies gathered.

Central to climate change predictions is the need to access to high-performance computing (HPC) facilities. IS-ENES will elaborate the ENES strategy for HPC and organize the interface between the Earth system modelling community and the European large infrastructure projects, PRACE "Partnership for Advanced Computing in Europe" and DEISA2 "Distributed European Infrastructure for Supercomputing Applications", integrate them in an HPC-ecosystem and help prepare for the future generation of computing architectures and facilities.