

**Year of CfP: 2008**

**Project No 0803-007**

<b>Project title:</b> Towards a federative research on modeling and simulation platforms
--

**Units managing the project:** GREEN, Renewable resources and environment management (CIRAD), and LISAH, laboratory for soils, agrisystems, hydrosystems interaction studies (INRA, IRD, Montpellier, Montpellier SupAgro)

**Project leaders:** Jean-Pierre Müller (GREEN, jean-pierre.muller(a)cirad.fr) and Jean-Christophe Fabre (LISAH)

**Research units from the Foundation's scientific network involved:** AMAP, AGAP, GREEN, LISAH, SYSTEM, LAMETA

**Sub-thematic axes:** IPB-1 (Integrative Plant Biology 1: *Genetics and genomics, plant breeding, ecophysiology*), STDI-1 (Socio-Technical Dynamics of Innovation 1: *Agri-environmental innovations, agri-ecosystems, resources management*)

**Objectives:**

In the domain of plant, environment, and landscape simulation, several software platforms have been developed independently by different teams, with different focuses. Sharing of methodologies and/or tools has been limited, thus leading to

- Different programming languages, hence the need for ways of packaging models in using independent language, or at least the definition of interoperable structures.
- Lack of agreement despite each platform providing a middleware for coordinating modules on (1) what the middleware is in charge of (e.g. information flows, spatio-temporal structures, coherent schedules, etc.) and (2) what should be specified in the components (i.e., inputs/outputs, events, meta-information)

The objective of this proposal is to make an inventory of these platforms and to start a first analysis of existing solutions to develop a synergy between these projects. This includes analyzing their complementary features, studying their interoperability, comparing their weak and strong points and finding out how common elements could be shared in order to improve software development.

**Total Agropolis Fondation funding:** € 25,637 (salary for an engineer, travel expenses)

**Funding categorie(s):** Agropolis Fondation grants for scientific platform, Agropolis Fondation small grants (support for the organisation of high-level scientific events e.g. conferences, seminars)

**Project duration:** 1 November 2008 – 31 December 2010

**Keywords:** modelling – simulation – platform – landscape – software