The New Grand Challenge of the Globalization of Modeling Languages

"Supporting Model Heterogeneity in the Development and Runtime Management of Complex Software-Intensive Systems"

Complex Software-Intensive Systems (e.g., Cyber-Physical Systems, Internet of Things):
- deal with multiple concerns and stakeholders,
- integrate heterogeneous parts and environments,
- manage evolution and emergence of new concerns,
But... require **global** analysis, execution and adaptation.

Model Driven Software and System Engineering

⇒ Separation of concerns by using multiple (domain-specific) modeling languages
⇒ Software Language Engineering (language design, implementation, and globalization!)

"On the use of multiple modeling languages to support the coordinated development and runtime management of heterogeneous aspects of Complex Software-Intensive Systems."

The GEMOC Initiative: http://gemoc.org

"GEMOC is an open and international initiative that aims to develop the necessary breakthrough in software language engineering (SLE) to support a global software engineering through the use of multiple domain-specific modeling languages. GEMOC partners investigates effective tools and methods in SLE for the design and implementation of collaborative, interoperable and composable modeling languages."

The GEMOC initiative provides:
- a framework that facilitates collaborative work between members,
- a dissemination of the research results and other related information on GEMOC activities.

Member Directory: http://gemoc.org/members
Advisory Board: Benoit Combemale, Robert B. France, Jeff Gray, and Jean-Marc Jézéquel

The GEMOC Initiative is funded by complementary and successive projects. IP issues are left to the PCA of each project.

The ANR Project GEMOC: http://gemoc.org/ins

"A Language Workbench for Heterogeneous Modeling and Simulation of Complex Software-Intensive Systems"

Objective: coordination of multiple executable modeling languages to support the coordinated execution of heterogeneous behavioral models

Approach: bridging the chasm between models of computation and executable metamodeling

Expected outcome: scientific and technological foundations on modeling language design, implementation and coordination, integrated into the GEMOC studio, a language workbench to support concurrent execution of heterogeneous models and graphical animation.