

Experiences with and Expectations for Japan-EU cooperation programs in ICT

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Experiences

- Joint Research Program based on bilateral agreement between Japan (JSPS) and Austria (FWF)
- Verification of web software based on theories of symbolic computation
 - SCORE (Symbolic Computation Research Group) at University of Tsukuba, Japan,
 - SSFG (Software Science Foundation Group) at Kyoto University, Japan
 - RISC (Research Institute for Symbolic Computation), Johannes Kepler University of Linz, Austria
- June 2007 – May 2009 (funding period), cooperation since 1988

Form of Cooperation - Funding

- The Japanese groups have counterpart domestic projects on their own and the funding of the joint project was used for international travelling and for organizing meetings
- FWF consider the project as one of stand-alone project
- The Japan side consider the international projects as extra attachment to on-going projects; however the Austrian side do not have such distinction.

Form of Cooperation - Activities

- joint theoretical investigation of the research themes
- emails exchanges and discussions by modern ICT tools (e.g. Skype and Yahoo messenger)
- joint seminars (2 workshops in Austria and 1 workshop in Japan, one is open to international communities)
- Participation in EU FP6 project SCIEnc – Symbolic Computation Infrastructure in Europe
([http://www.symbolic-computation.org/The SCIEnc Project](http://www.symbolic-computation.org/The_SCIEnc_Project))
 - our PhD students participated the summer school in symbolic computation, part of SCIEnc project

Expectations

- Blend of ICT and “Informatics and Mathematics”
- Research to cope with Cloud Computing and Service-Orientation
 - as we are living in the age of computing power as utilities, like electricity

Cloud Computing

- It is natural development from Grid Computing
- The term has more social and economic flavors.
- ICT research in this area can fruitfully focus more on international activities
 - e.g. standardization of interface, protocols and legal issues

Service Orientation

- Service is higher-level of abstraction of functionalities of computing systems
- Computer systems are viewed as providing services not just doing computation
- International competitions are more relevant, resulting in creative and high-quality services
- Key issue in research is **Reliability (Trustworthiness, Security)**

Ensure Reliability

- Many facets of reliability
 - Computer systems should be built on more solid basis.
 - Components and integrating methods should be verified.

Verification Technology

- Limited number of people (students) are interested in activities like proving, so far
- Notion of verifying and proving should be prevailing in order to make the computing technologies more reliable
- There are many methods to prove/verify "correctness" of systems, which can be applied and mobilized to real life problems.

Expectations - more

The new framework will enable:

- strengthen the network of researchers.
- provide more opportunities for young researchers (PhD, postdocs)
- Japanese industries and academia as well as Japanese funding organizations (such as JSPS, JST and NEDO) to get more involved as research partners.
- (Needless to mention exciting research themes formulated by professional and leaders in ICT and requested by our societies)
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