CENTRE DE RECHERCHE EN AUTOMATIQUE DE NANCY
UMR 7039

Nancy-Université
Université Henri Poincaré

POST-DOC Position available in Nancy (France)
Period: January 2010 – December 2010

Research Director: Prof. Hervé Panetto (Herve.Panetto@cran.uhp-nancy.fr)

Title: Models and Semantics for product-centric systems interoperability

The objective of this work is to test the scientific interest of making the product, beyond the whole process, interactive (this means that the product information may participate to the decision process), to organize then a more collaborative interoperability of different heterogeneous systems (APS, ERP, MES, SCM). Companies are interested as much in the design of systems (production, information, decision-making ...), and their interoperations even their integration in a given context. This problem only makes sense in the context of evolution of organizations and their environment, or when a company provides engineering methods and tools that facilitate the decision making of complex processes. Given this context, an approach for the engineering of these interoperable systems with a particular view of their product information, possibly embedded into the product itself, is to rely on different types and levels of abstraction or model of information systems, centred on the information related to the products or the services to be produced.

Job description: These models must express not only the "structural" components of the products but also their behaviour, which may be constrained by the specific requirements to the systems itself (business rules). The candidate will study this problem, both at a technological and a semantic level, through their information systems. The particular objective is to propose mechanisms and modelling invariants restricting or at least identifying the semantic loss that may arise when interoperation between these systems, including the product information, takes place.

This research proposal, involving both theoretical and applied research, is strongly related with the research focused on interoperability of heterogeneous distributed systems that fall within the themes, at the international level, of the Virtual International Laboratory in Enterprise Interoperability (INTEROP-VLab[1]) whose members "cover" a large part of Europe and China.

Candidate profile : A Ph.D. thesis in Computer Science or Production Engineering with solid background in Mathematics is required. The candidate to this Post-Doctoral position must have knowledge in information systems modelling (using languages such as UML) and some knowledge in product information modelling and production planning by means of an ERP system. The theoretical part of the formalisation will apply 1st order logics and set theory. Experience in modelling concepts with Description Logic would be a great advantage.

Deposit of candidature: Please send your CV and a cover letter by e-mail to: Herve.Panetto@cran.uhp-nancy.fr before November 1st. The final selection will be decided on November 6th. For more information regarding the CRAN: www.cran.uhp-nancy.fr. Employer: Université Henri Poincaré – Nancy I, duration: 12 months fixed-term. From now the annual salary is: 22 000 Euro Net. Working language is English.

This 12-month position is open only to candidates with no French Ph.D.

[1] http://www.interop-vlab.eu

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