Post Doctoral Proposal
2005 Campaign

INRIA

- **Research Project-Team : EXMO**

- **Title : Interoperability in a network of local lightweight ontologies**

- **Description :**

Social networks on the web can be explicit or implicit. Implicit social networks are the kind of networks made by people co-authoring papers. Explicit social networks are made of people declaring their affinity with others. In the context of the semantic web, many kind of social networking activity has started taking advantage of the FOAF (Friends-of-a-friend) language.

FOAF enables people to describes themselves to others and assert their relations with other people. However, FOAF is deliberately limited and does not enable elaborate descriptions such as the description of skills that one would like to see in a job hunting application. In consequence, users are tempted, and not discouraged, to use other ontologies within FOAF. This results in a distributed web of locally altered ontologies.

However, we know that people do not like to strictly comply to some ontology and they would tend to add their own tags within FOAF description. RDF does not prohibits this and this permissiveness, like that of HTML might be the strength of this approach. But, in order for machines to meaningfully manipulate these descriptions (like simply matching profiles to CV) a minimum of consensus/correspondence must be reached.

This consensus can be achieved a priori (by cleaning up the descriptions) or a posteriori (by processing the queries) with the help of ontology alignments. Our goal is to build on our work in ontology alignments in order to help solving this heterogeneity problem.

The goal of the post-doctoral work is to elaborate an architecture taking into account alignments between locally altered ontologies in order to guarantee the best possible interoperability in a social network. This would not necessarily modify the description provided by users but help them to find useful applicable ontology fragment and reconcile the local alteration in a more consensual ontology.

- **Requirements (educational and technical background, knowledge of specific material) :**

- Sense of innovation and autonomy
- Background in knowledge representation
- Java programming
- Interaction with other researchers.
- Writing capabilities.

- **Person to contact :**

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- **Project Web Server : http://www.inrialpes.fr/exmo/**