Poster abstract

# The role of ontologies in supporting distributed medical systems

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## Abstract

**Introduction:** The K4, Care European Project proposes a standard model for home-care (HC) assistance of elderly chronic patients (ECP), coordinating all professionals and institutions involved in HC for proper assistance. The model is supported by a distributed multi agent platform (MAP), a metaphor of the HC itself. Every person involved is represented by an intelligent agent interacting with other agents, representing other colleagues. Warnings are sent to the corresponding agent when required by other agents for some action to complete a medical service. Correct transferring of the HC knowledge to the MAP is a key issue.

**Methods:** The actor profile ontology (APO) was build to determine the behaviour of MAP: the services to be provided have been specified by combinations of simpler actions; liabilities, responsibilities and access rights of every kind of professional involved in HC is specified, as well as interaction between different professionals. Agents are created according to APO definitions.

**Results:** A prototype is implemented where physicians, nurses, social workers, carers… coordinate through their personal agents for HC of ECP, according to APO. The platform is currently being tested with real patients in Pollenza (It).

**Conclusion:** Ontologies allow knowledge transmission to a computer application. APO provides high flexibility to mid and log-term evolution of HC, as changing it automatically changes the system behaviour. The basic structure of an ontology to support distributed medical complex systems is identified and this structure is easily exportable to other kind of medical systems, like hospital management or provision of dependency services.

## Keywords

**ontologies, distributed medical systems**

*1st International Conference on Bridging Knowledge in Long Term Care and Support. Crossing Boundaries between Ageing and Disability, Barcelona, Spain, 5–7 March 2009*

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