



OO/UC3M/12 - SURVEILLANCE SOFTWARE BASED ON AGENTS SYSTEM

A Spanish research group has developed a surveillance system based on the agents theory and multiagents system in the Distributed Artificial Intelligence. The system allows that each data acquisition source could operate independently, but coordinated by a central host. The technology improves the surveillance process, reducing the human attention and introducing automatic alarms. They are looking for technical cooperation of partners interested in the technology.

Description of the technology

Any surveillance system should allow the acquisition of data from different and diverse sources (image, sound, infrared, control software, etc) and the integration of them in a unique host which performs a fiel image of the watched environment. The Spanish research group has developed a surveillance system based on the agents theory and multiagents system within the Distributed Artificial Intelligence. The agents theory allows to each data acquisition source controlled (cameras in movement, directional microphones,...) to operate independently from a central host, but with the capacity of being coordinated globally.

The objective of the developed technology is the generation of a faithful image of the environment supervised. This faithful image can not be reached by only one database and needs the collaboration of other databases to obtain the complete information.

The characteristics of the system are:

- There is an agent collection, defined each agent by its own abilities: data acquisition, communication, planning and actuation.
- All agents have a surveillance objective. This objective is subdivided in different acquisition tasks. Then, they can be executed parallel on each source . All agents must be able to assign the appropriate tasks depending on the adequacy of each agent to the tasks and the common objective.
- Knowledge of: each agent has a restricted knowledge could be of the environment, the objective of the agents group, the other agents' intentions in the realization of their owns tasks.
- Each agent has the ability for determined tasks, depending on its knowledge, the process capacity and the requirements needed.

Innovative aspects

The surveillance system developed using agents technology and multiagent systems presents characteristics (adaptation, robust, ...) that allow to react quickly when the sensors fail, when unexpected situations in the environment occur and the traditional surveillance system become a cooperative system of surveillance agents (a informer society).

Competitive advantages

The system based on intelligent agents allows to improve the global surveillance process due to the integration of a new acquisition technology. It reduces the necessity of the human attention and allows the introduction of decision systems that generate automatic alarms.

Current state of intellectual property: Secret know how

Keywords

Advanced Systems Architecture; Artificial Intelligence (AI); Smart Appliances



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