SCHEDULER FOR A SOFTWARE SYSTEM

The present invention relates to scheduling in software systems and finds an application for instance in scheduling collaborative tasks in a community of software agents.

Software agent technology has developed over the past few years in several different fields. A software agent is a computer program which acts as an agent for an entity such as a user, a piece of equipment or a business. The software agent usually holds data in relation to the entity it represents, has a set of constraints or conditions to determine its behaviour and, most importantly, is provided with decision making software for making decisions on behalf of the entity within or as a result of the constraints and conditions. Agents are generally acting within a system and the decisions an agent makes can result in activity by the system. In control software systems, those decisions result in control activity, such as initiating connection set-up in a communications network controlled by the system.

An agent acting within a system will also generally hold data about the system so that it can operate in context.

In a distributed environment, many such agents may co-operate to co-ordinate and perform the control activities. Typically, such agents form an agent layer, with each agent interfacing with a number of external systems (the domain layer) which they control, monitor or manage, as shown in Figure 1.

An agent-based system can be very complex since the interactions between the agents, the decision-making processes of individual agents and, the interactions between agents and the external systems they control, need to be taken into account.

Different types of agent-based systems are described in many papers, such as those published in the proceedings of the First and Second International Conferences on the Practical Application of Intelligent Agents and Multi-Agent Technology. These are published by the Practical Application Company Ltd., Blackpool, Lancashire, in 1996 and 1997 respectively. A general comprehensive review of agent-based technology is given by Hyacinth S. Nwana, "Software