

CABS embodies a system of methods plus environment to provide a multi-agent systems developer with the means to:

- configure a number of different agents of varying functionality and behaviour,
- organise them in whatever manner she chooses,
- 5 • imbue each agent with communicative and co-ordination abilities selected from a CABS-supplied list,
- supply each agent with the necessary domain-specific problem-solving code, and
- automatically generate the required executables for the agents.

10

In addition, the CABS platform can provide the developer with a suite of support agents 315 of known general type such as name-servers, facilitators (classified directories), and visualisers. Overall, CABS allows the system developer to concentrate on domain-specific analysis without having to expend effort on

15 agent-related issues.

4. USING CABS PLATFORM TO DESIGN AN AGENT SYSTEM

The CABS platform is based on a methodology for designing collaborative

20 software agents which views the agents as having five primary sets of characteristics, or "layers". Referring to Figures 4 and 5, this methodology requires developers to provide inputs in respect of three of these, a definition layer 400, an organisation layer 405 and a coordination layer 410, as follows.

In an "agent definition" step 500, relevant to the definition layer 400, user

25 inputs determine the agent in terms of its reasoning (and learning) abilities, goals, resources etc.

In an "agent organisation" step 505, relevant to the organisation layer 405, user inputs determine the agent in terms of its relationships with other agents, e.g. what agencies it belongs to, what roles it plays in these agencies,

30 what other agents it is aware of, what abilities it knows those other agents possess, etc. (An agency is a group of agents which share a common attribute such as belonging to the same company. Agencies may be virtual or real. A virtual agency is a group of agents which share some sort of co-operation agreement.)