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headings "Step 4: *Agent Coordination Strategy Specification*" and "Step 2: *Agent Definition*" respectively, in the section entitled "4. **USING THE CABS PLATFORM TO DESIGN AN AGENT SYSTEM**".

Coordination is extremely important in CABS because its agents are
5 collaborative. Collaborative software agents refer to the complex class of agents which are both autonomous and which are capable of cooperation with other agents in order to perform tasks for the entities they represent. They may have to negotiate in order to reach mutually acceptable agreements with other agents. For instance, an agent may receive a request for a resource from another agent. It will
10 respond according to the relationship between them and according to its own particular circumstances ("state"), such as whether it has that resource available. The response forms part of an interaction process between the two agents which is determined by a "co-ordination protocol". The co-ordination engine and reasoning system 210 allows the agent to interact with other agents using one or
15 more different co-ordination protocols, selected by the developer to be appropriate to the agent's domain.

Typically, in the past, coordination protocols have been "hardwired" into the way individual software agents work, such that changing them requires a total re-write of the entire distributed application. In a CABS system however, the
20 agent is provided with one or more co-ordination graphs 255 and an engine 210 for executing them. Each graph comprises a set of labels for nodes together with a set of labels for arcs which identify transition conditions for going from node to node. The agent is also provided with access to a repository of the executable form of the nodes and arcs identified by the labels. This repository may be held
25 internally in the agent or externally from it. The co-ordination engine 210 uses graph descriptions to dynamically build and run co-ordination processes by putting together the process steps identified by the node and arc labels of the graphs.

At agent build time, the user selects from a co-ordination graphs database 310 the specific coordination graphs for the agent, which are loaded into the
30 agent's local coordination graph database 255. (The CABS unique visualiser agent 140 is provided with a control tool which allows users to modify agents' co-ordination graphs at runtime. This is further described below, under the heading "5. **DEBUGGING AND VISUALISATION**".)