

Note that “?anything” denotes a local variable.

The resource database 225 also contains the ontology database 260. This stores the logical definition of each fact type - its legal attributes, the range of legal values for each attribute, any constraints between attribute values, and any relationships between the attributes of the fact and other facts. Agents have to use the same ontological information if they are to understand each other.

2.7 Task Database 230

The task database stores task definitions that will be used for instance by the planner and scheduler 220.

The task definition provides a skeletal programming framework which comprises:

- a sequence of activities
- selection (if, then.....)
- iteration (exit condition)

The CABS task definition (or description) also introduces the idea of “mandatory parallel” tasks and “optional parallel” tasks. Where a task description shows mandatory parallel activities, more than one activity has to be carried out simultaneously. This will prevent an agent with only a single resource available from contending for the task.

A task may be a primitive task, comprising only one activity, or may involve a set of sub-tasks. An example of the latter is where the task is to carry out a simple arithmetic calculation such as “ $ax^2 + dx + c$.” If this task is shown with the mandatory parallel indication, then the three values ax^2 , dx and c will be calculated simultaneously, followed by the sequential step of adding the calculated values together. For a task of this nature, a decomposition will be generated by the task definition editor 335 (see below under the heading “**4.5 Step 5: Tasks Definition**”) and an important aspect of the task description will be the interfaces between outputs of one task activity to inputs of subsequent task activities.

A task description further comprises pre-conditions for the task, such as resources it will require and the effects it will have (inputs/outputs), how long the