

Inputs to the planner/scheduler 220 are goals of the form: Produce resource R , by time e , at maximum cost c . Note, the goal specification may include other parameters such as quality. This will depend on the planner being used. Its outputs are:

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(a) *output-tasks*

– a set of tasks it will need to perform to achieve the goal; and

(b) *output-subgoals*

– a set of sub-goals which the agent must contract out to other agents if the top-level goal is to be achieved.

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The behaviour of the planner is as follows:

if ($e < \text{current-time}$ or $e > \text{current-time} + \text{plan-ahead}$) return fail.

15 /* Check to ensure we are within the time-range covered by the agents planner */

Let *applicable-tasks* = the set of tasks in the agent's task database which have the desired resource R as one of their effects (produced items).

20 /* Note depending on the planner the *applicable-tasks* can be ordered by cost, quality, time, etc. That is, the cost of performing the task, the quality of resources the task produces, or the time it takes to perform the task. */

For each *task* in the set of *applicable-tasks* do

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Attempt to place the *task* in the commitment table in a continuous block of free spaces, between the desired end-time e of the task and the current-time.

If not enough free spaces are available for the task, go on to the next task in the set of *applicable-tasks*.

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If *task* has been successfully placed on the table:

Add *task* to the set *output-tasks*

the start-time s of the *task* is given by its start position on the table

Let *consumed-resources* = the set of resources required to perform the *task*.

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For each resource C in *consumed-resources*:

Check the resource database for C