second goal is rejected.   Other selection policies could be implemented, e.g. highest priority goal or highest cost goal, etc. It is also possible to control the degree of double-booking by giving the planner a percentage of its total number of slots that can be double-booked.

5   • bounding the maximum number of parallel branches on the basis of available processors;

• the preconditions of a task may be ordered, e.g. a task with three preconditions *A*, *B* and *C* might impose the constraint that *A* must be achieved before *B*, then *C*. While this is a feature of some conventional planners, in CABS such goal

10   ordering leads to the interleaving of planning with coordination. In conventional agent-based systems the coordination engine controls the planner but in CABS agents the planner 220 and the coordination engine 210 share control when handling goal ordering. For example, in the *A*, *B*, *C* case above, *A* might be planned for by the agent and *B* sub-contracted out. However, the choice of

15   agent to achieve *B* and the manner in which it will be achieved (variable bindings), and the way in which *A* will be achieved will all affect *C*. Thus, the ultimate decision about which agent gets the contract depends on the planner and is not simply based on a single factor such as cheapest cost. Such problems typically occur when sub-goals are <u>not</u> independent; and interleaving

20   planning with coordination provides a flexible mechanism for handling such dependence.

Reference is made above to "variable bindings". These are a known concept for enforcing an equality constraint between a variable and a fact or

25   another variable. A binding is used when a variable is set equal to a fact. For example, if variable "v1" equals fact "f1", say, "v1" is said to be bound to "f1".

CABS agents can also allow an optimising scheduler to be attached to the commitment table. In a simple implementation, a constraint satisfaction algorithm can be used to reschedule already planned activities such that none of the

30   constraints that were imposed during planning is violated. This is useful in handling exception or in achieving policy goals. Optimisation can be added to the constraint-based rescheduler.

In the case of exceptions, an exception (unexpected failure condition) might occur when an executing task overruns its scheduled time. If there are free