CS 690-009 Week 2

Tim Cheeseman

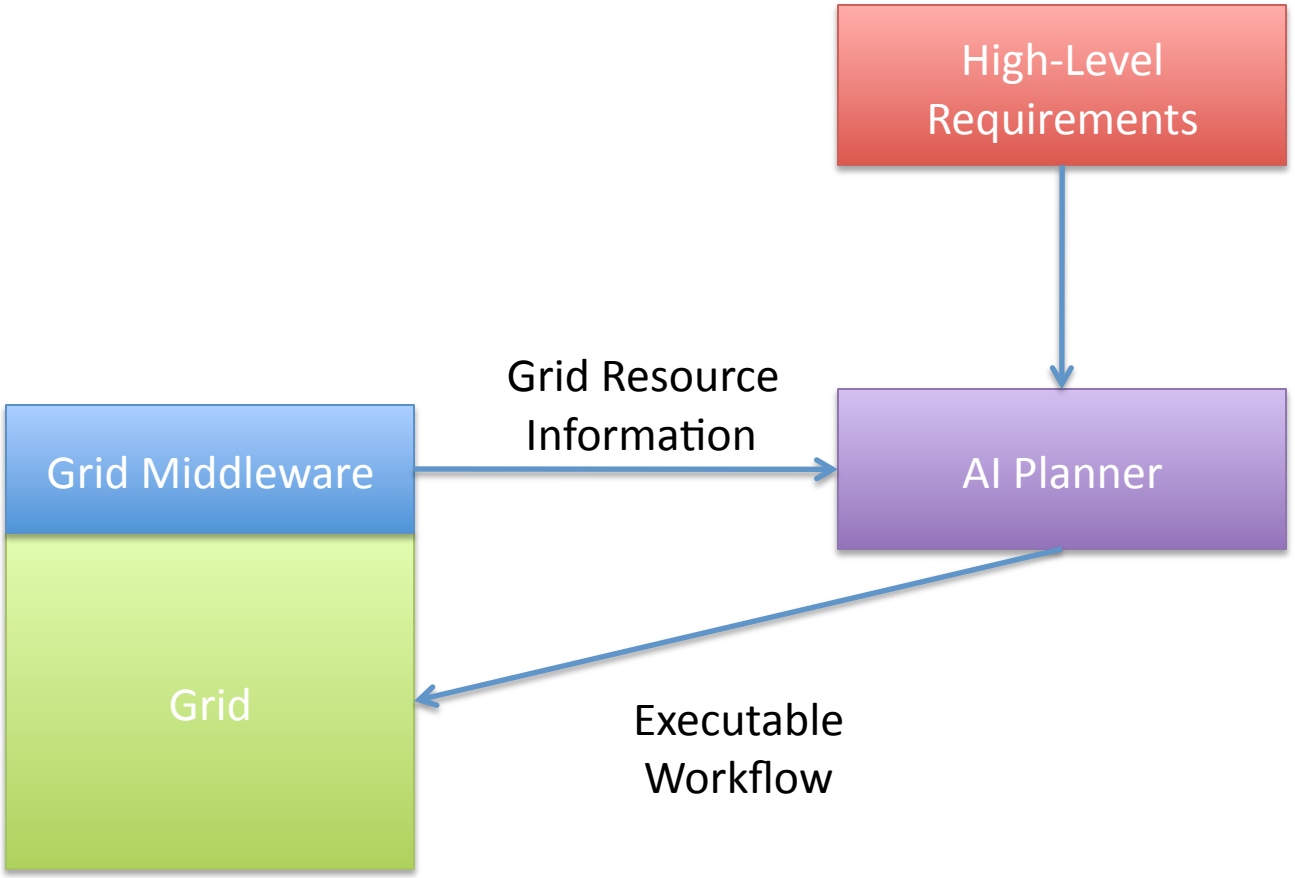
Infrastructure for Science Portals

Old View	New View (2000)
Web as place to access multimedia documents	Web as a tightly coupled framework of computational applications and associated underlying data
Static Web-based science workbenches	Web-based science workbenches as customizable portals
Tedious or proprietary methods of data discovery, mining, analysis, etc.	Analysis tools exploiting Grid resources

Infrastructure for Science Portals

Benefits	Limitations
Grid resources available to desktops, laptops, and even mobile devices in a visual and customizable manner: "real-time tool access to the asynchronous technologies of e-mail and the Web"	Visibility of the computation with Grid resources in private sector: Results are returned, but not necessarily the method or process by which those results were attained. How much can we trust this data?

Automatically Composed Workflows for Grid Environments



Automatically Composed Workflows for Grid Environments

Benefits	Limitations
Express goals in terms of metadata or information about required data instead of file names Explicit, declarative representation for workflow constraints Planner creates multiple plans; can choose best depending on quality criteria or a set of alternative plans	Different metrics of plans in different application domains (e.g. length of run-time, use of data sources, user restrictions.) What happens if a failure occurs in the middle of the execution of a plan? Do we start over or can the planner adjust itself accordingly?