

EUROPA: A Platform for AI Planning, Scheduling, Constraint Programming, and Optimization

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Abstract¹

EUROPA is a class library and tool set for building and analyzing planners within a Constraint-based Temporal Planning paradigm. This paradigm has been successfully applied in a wide range of practical planning problems and has a legacy of success in NASA applications. EUROPA offers capabilities in 3 key areas of problem solving: (1) Representation; (2) Reasoning; and (3) Search. EUROPA is a means to integrate advanced planning, scheduling and constraint reasoning into an end-user application and is designed to be open and extendable to accommodate diverse and highly specialized problem solving techniques within a common design framework and around a common technology core. In this paper, we will outline the core capabilities of this open-source planning & scheduling framework. While EUROPA is the complete planning and scheduling software suite, we will pay special attention to the aspects that are relevant to knowledge engineering: modeling support, embedding a planner into an end-user application, and plan visualization and analysis.

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