

Enriching a Temporal Planner with Resources and a Hierarchy-based Heuristic

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Context and Motivations

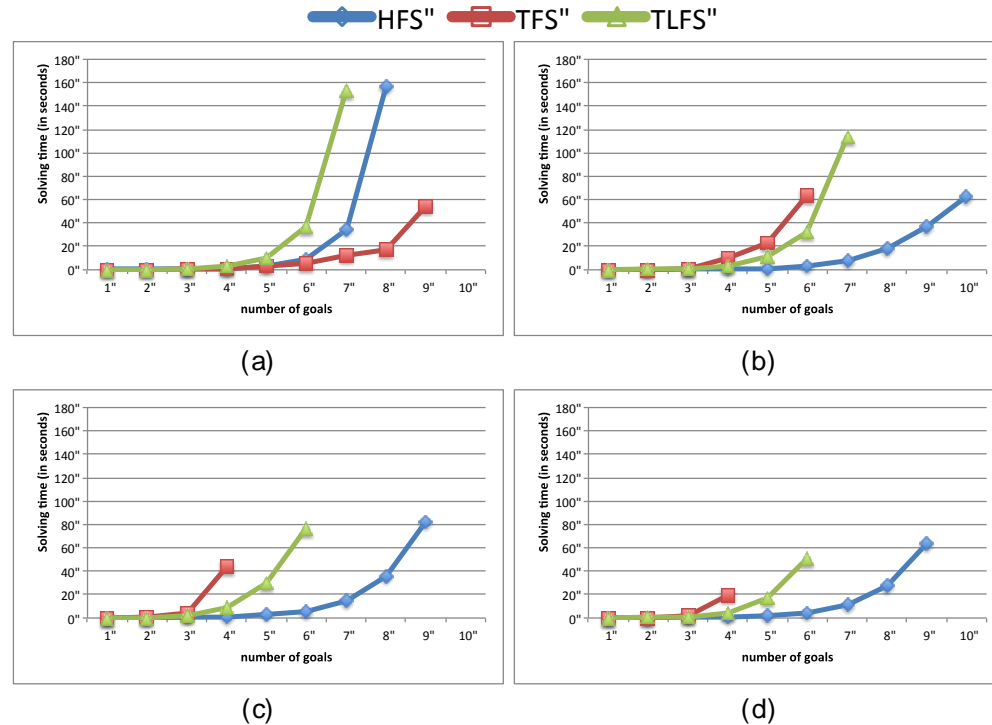
- **Timeline-based approach** to planning has been successfully applied in several real-world scenarios
 - Explicit representation of time
 - Planning & Scheduling integration
- Several software environment have been developed
 - EUROPA, IxTeT and APSI-TRF
 - Domain-dependent applications
- The **Extensible Planning and Scheduling Library (EPSL)**
 - Define a modular and extensible software environment to support the development of timeline-based applications

Contributions of the Work

- Extend EPSL framework by introducing modeling and reasoning capabilities about **Renewable Resources**
 - Allow to model more realistic domains
- Define a **domain-independent heuristic** function supporting the solving process
 - Domains modeled following a **hierarchical approach** often exhibit a hierarchical structure of the domain
 - Exploit the hierarchical structure of the domain to improve the performance of the planner
 - **Hierarchical Flaw Selection Heuristic (HFH)**

Experimental Evaluation

- Evaluate different configurations of EPSL-based planners on domains from a real-world manufacturing case study



- Results have shown that the use of HFS entails a general **improvements** of performance in terms of scalability and solving time

Thanks for your attention!

See you at Social session 1B – Acquario
Room (G-GF)