

META-COGNITION IN COORDINATORS

(/PROJECTS/PAST-PROJECTS)

Meta-Cognition in Coordinators (/projects/past-projects/meta-cognition-coordinators)

RESIN: A RESource bounded INformation Gathering System for Visual Analytics (/projects/past-projects/resin-resource-bounded-information-gathering-system-visual-analytics)

WLAN Resource (/projects/past-projects/wlan-resource)

Mathematical Analysis of Uncertainty Propagation in Agent Control (/projects/past-projects/mathematical-analysis-uncertainty-propagation-agent-control)

Safety in Multi-Agent Systems (/projects/past-projects/safety-multi-agent-systems)

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Coordinators are intelligent agents that provide coordination support to military field units. Each coordinator agent is composed of multiple modules such as the Task Analysis module (TaskMod), Coordination Module (CoordMod), Organization Module (OrgMod) and so on.

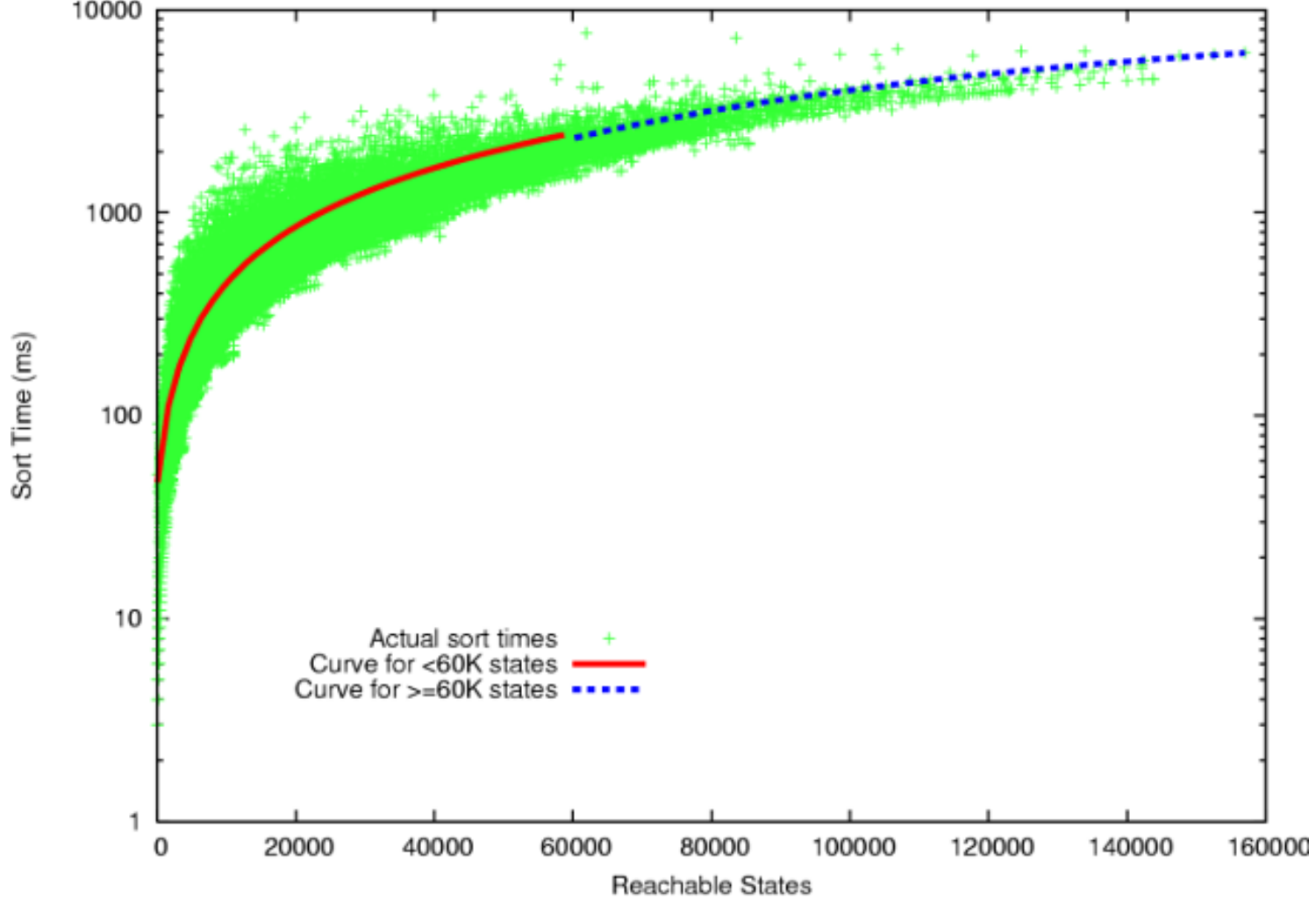
MetaCognition is the ability of agents to reason about their deliberations, i.e. think about thinking. In the context of Coordinators, the MetaCognition module (MetaMod) reasons about resource allocations to the other modules in time-constrained situations. The research questions addressed by the MetaMod are:

1. Determine how much time to allocate to each module, when, and how much time to allocate to learning within the modules (learning may be an activity that should be performed when the COORDINATORS have idle time).
2. Do this by reasoning about the current state (e.g., change that occurred, mission, what the human is doing, state of coordination), and potentially abstracting and generalizing in order to compare the current state to past states / experience.
3. Learn performance profiles of the different modules by past experience.
4. Processing and allocation decisions are made on a continuous basis as the state of the world and problem solving change.

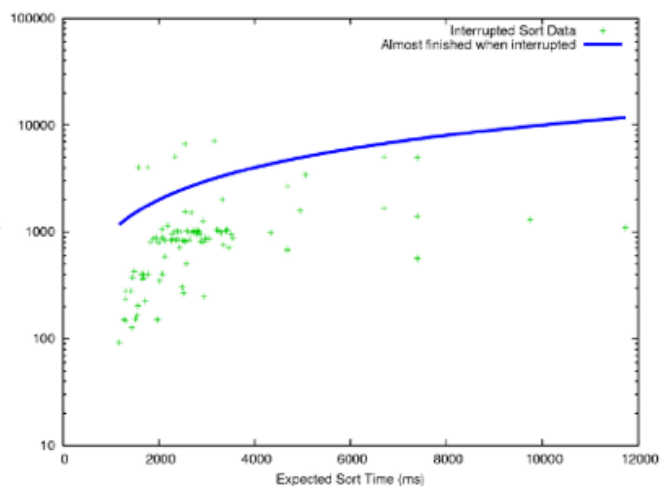
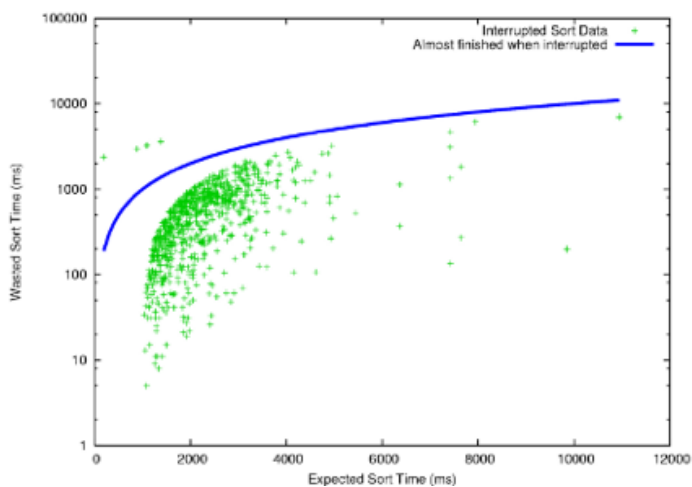
Our approach for Phase 1 is described in this [poster](http://dair.sis.uncc.edu/Coordinators/ASAMAS06_Poster.jpg) (http://dair.sis.uncc.edu/Coordinators/ASAMAS06_Poster.jpg) presented at ASAMAS 2006 held in Boston.

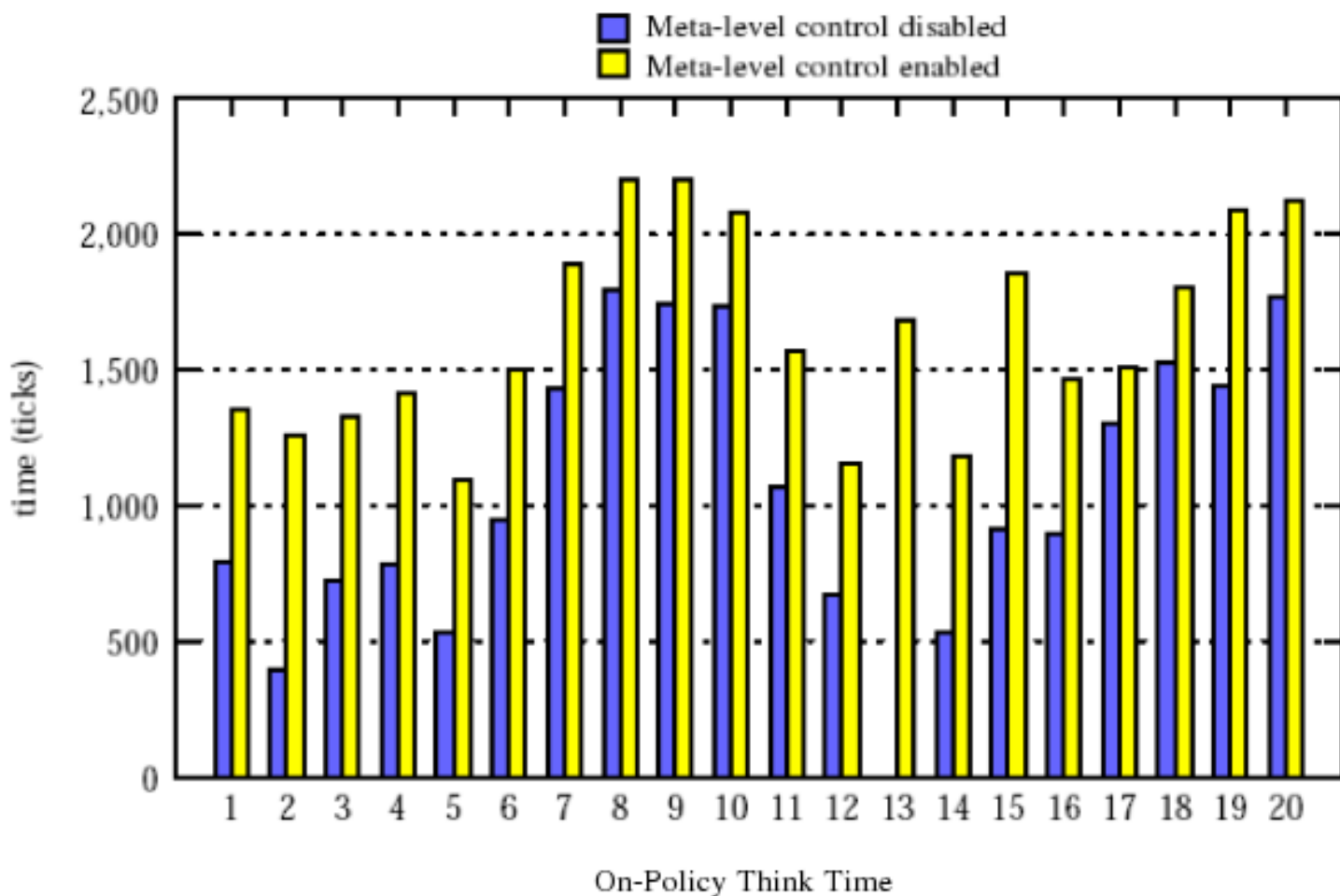
Phase 2

Performance Profiles:



Experimental Results:





This project is supported by DARPA. The program webpage can be found [here \(http://www.darpa.mil/ipto/programs/coor/coor.asp\)](http://www.darpa.mil/ipto/programs/coor/coor.asp).

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