

Prometheus Agent Software Engineering Methodology

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Prometheus Development

- Developed over a period of 7+ years, more intensively last 3.5 years.
- Based on experience with students developing agent systems.
- Also guided by AOS experience with customers.

Prometheus Aims

- To provide detailed guidance
- To support all phases of development (including coding, testing, maintenance)
- To facilitate tool support and automation
- To provide design artifacts for understanding of system – from overview to details.
- To support design of goal/plan style agents
- To use existing approaches/standards where appropriate.

Current Status

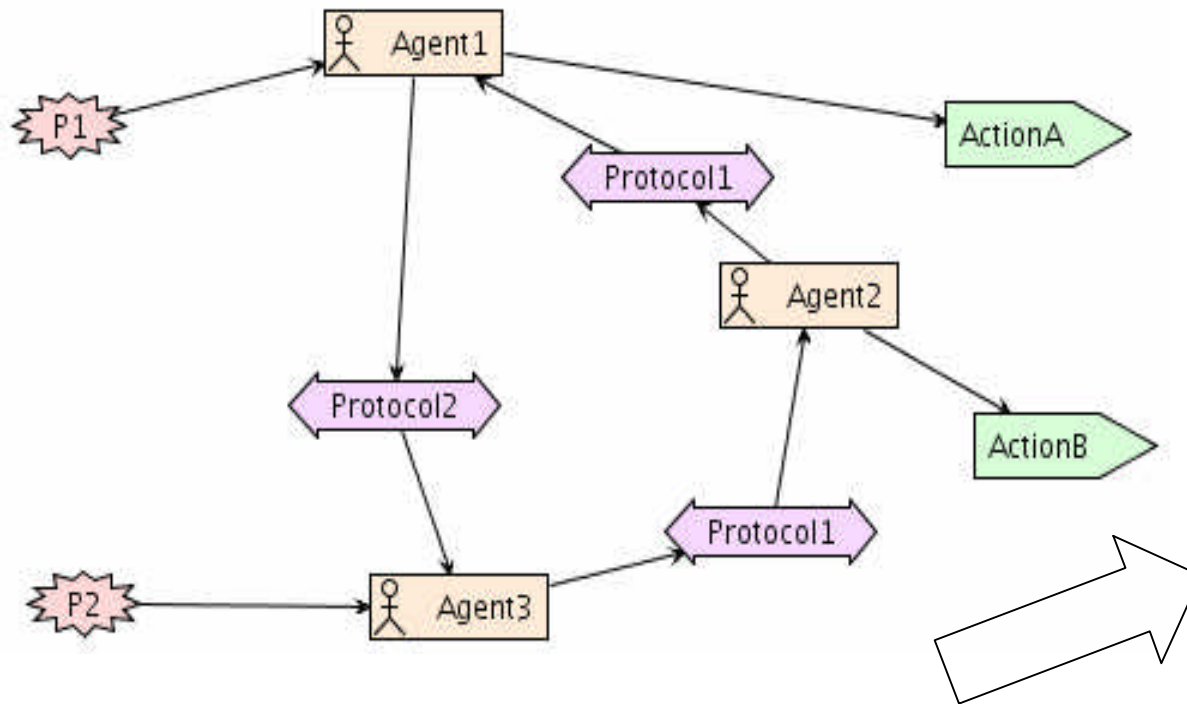
- Book describing specification and design in depth.
- Prototype tool supporting design process – some aspects more than others.
- Detailed design concepts close to code – tools exist for obtaining automatic skeleton code for JACK and JADEX
- Research work on incorporating debugging – will be included in tool.
- Ongoing work refining methodology and support.

Main Design Artifacts

- Goals and sub-goals
- Interface specification (actions and percepts)
- Use case scenarios
- Overview diagrams of structure
- Protocol specifications
- Process diagrams
- Detailed descriptors

Dynamic Views	Structural Overviews	Detailed Descriptors
Scenarios	Goal graph	Scenarios, Functionalities
Protocols	System overview	Agents, Protocols, Messages
Process diagrams	Agent overviews	Percepts, Actions, Capabilities
Plan body pseudo code	Plan event data diagrams	Events, Plans, Data

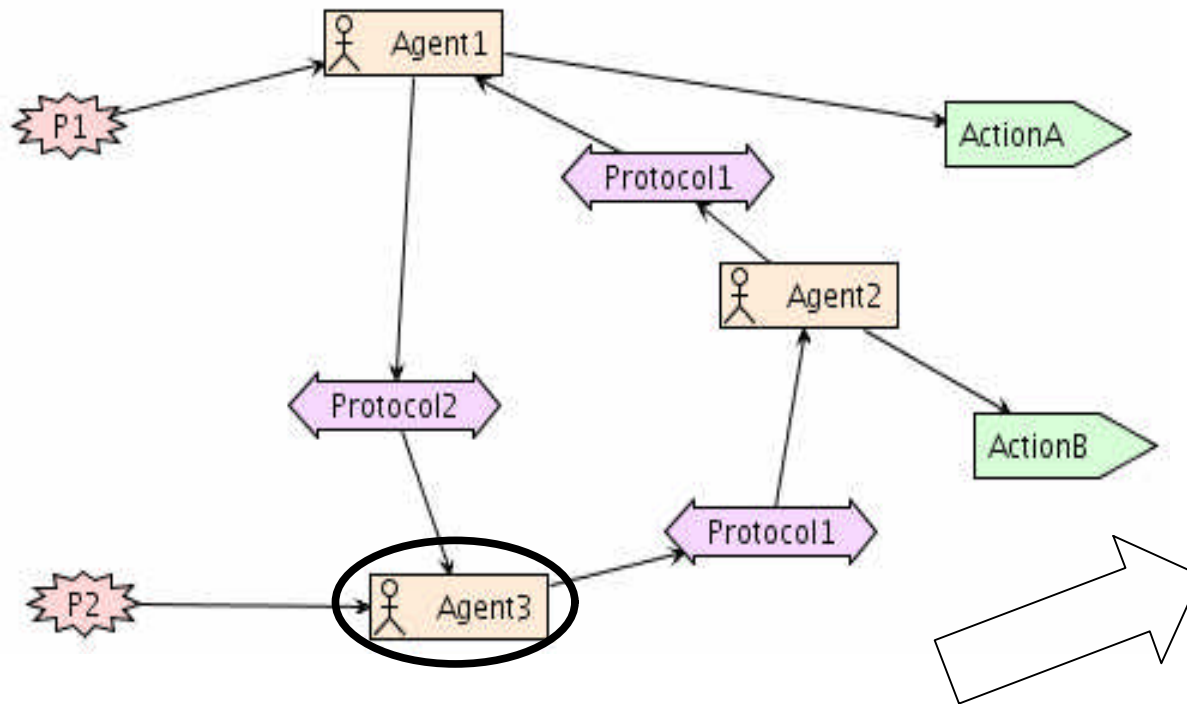
Supports abstraction and refinement



Agent overview

System overview

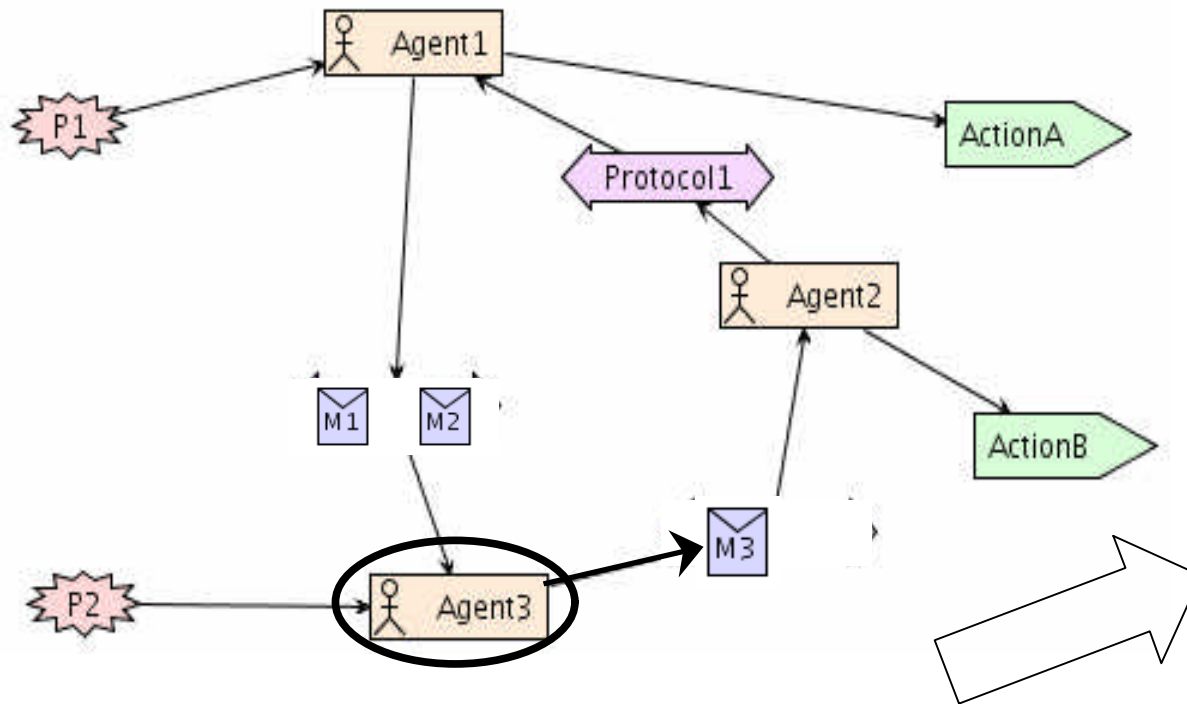
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System overview

Agent overview

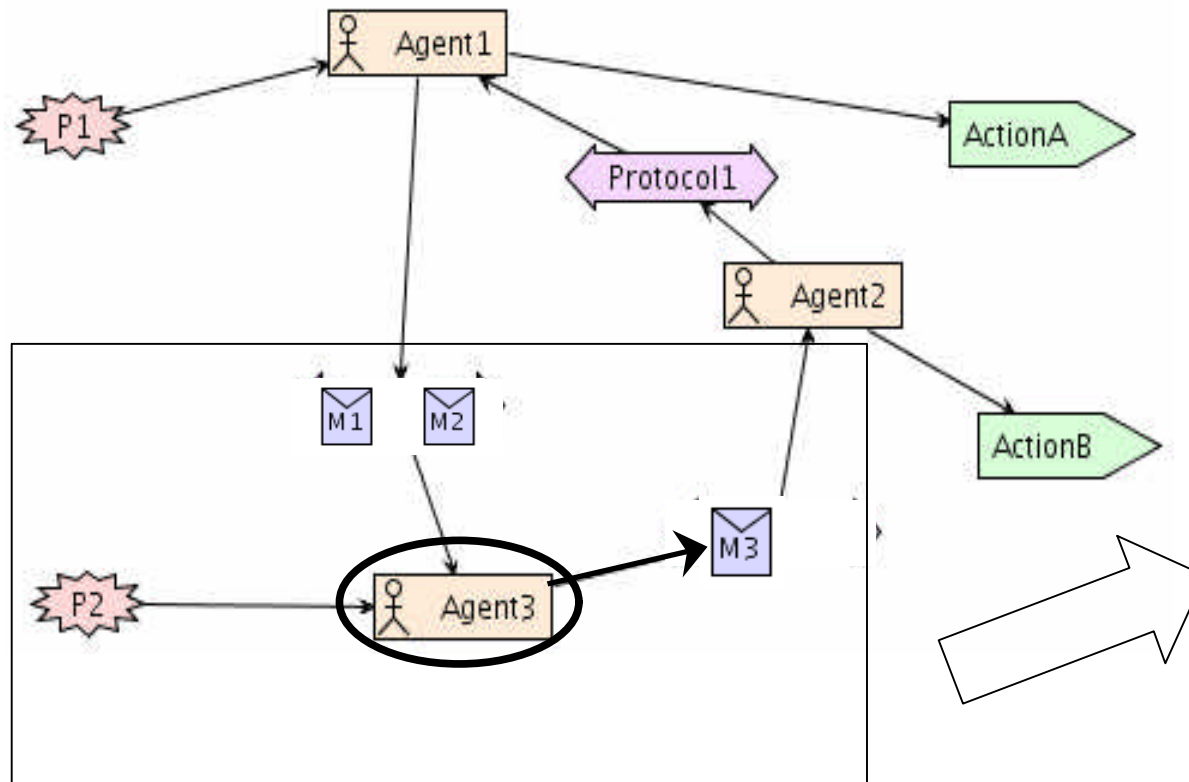
Supports abstraction and refinement



System overview

Agent overview

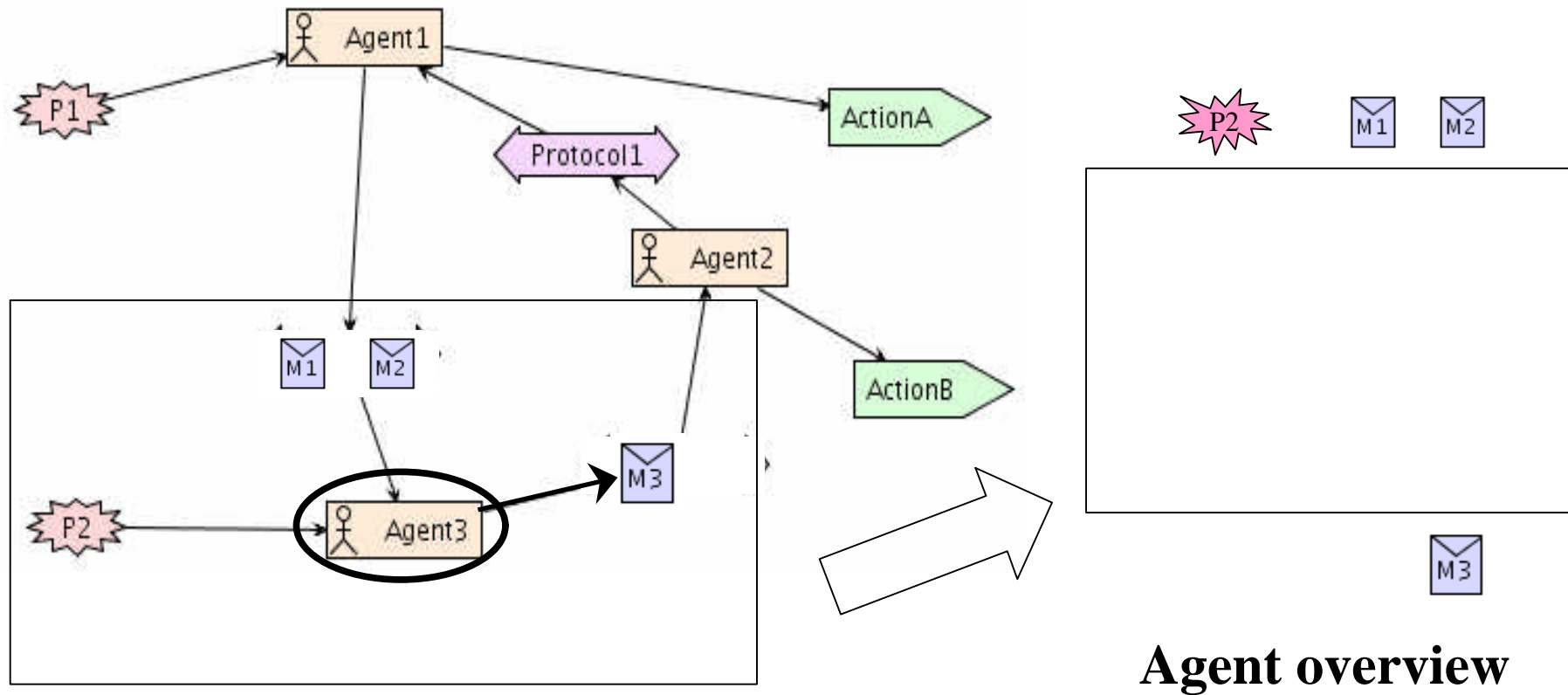
Supports abstraction and refinement



System overview

Agent overview

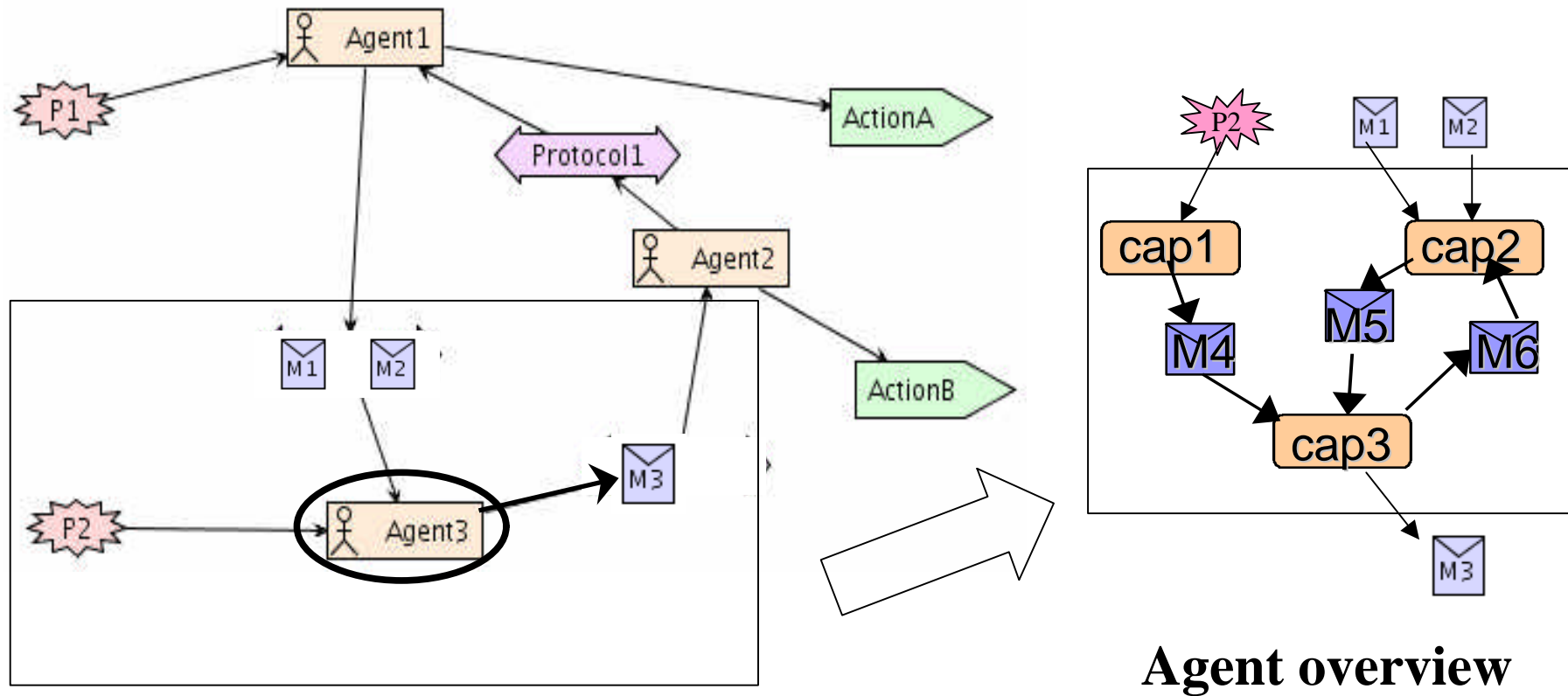
Supports abstraction and refinement



System overview

Agent overview

Supports abstraction and refinement



System overview

Agent overview

Supports consistency checking

Dynamic Views	Structural Overviews	Detailed Descriptors
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Supports consistency checking

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