Validation of a Multi-Agent Architecture for Planning and Execution
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Concepts
• Autonomous control software uses models to reason about the system that it controls and the environment it is in
• It accomplishes a set of goals extended during a period of time, and it is able to reason about failures with little or no human intervention
• Any action not executed as expected: recover

The Problem
• Advanced autonomous agents are multi-layer where each layer uses different technology and semantics
• Software integration is difficult and validation costs is high

The Goal
1. Simplify an autonomous architecture by using the same execution machinery (semantics and implementation) based in Agents
2. Verify the architecture & detect inconsistencies in the model

System
1.IDEA(Intelligent Distributed Execution Architecture)

How?
1. Using another IDEA agent (mirror model)
2. Model checking techniques
**Executable TL**

- Tk1
- Take Image
- Tk3
- Take Image

**Goal TL**

- Goto point A
- Goto point B

**Agent**

**Internal TL**

**Agent Model**
- Idea Agent
- IDEA Simulator Agent
- Agent declaration
- Physical Model
- Non-Physical Model
- Simulator Model
- Delay Model
- Counter Model
- Simulator Agent declaration