



Model-Based Design of Game AI

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- EA Tanks Wars
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- Model-based Approach
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EA TankWars



Develop an AI for a tank that

- lives in a 2D world
- manage the internal resources for the tank
- find the enemy tank
- map out the world
- destroy the enemy tank

The Arena

The screenshot displays the 'Tank Wars' game interface. The main arena is a dark gray trapezoidal field with white boundaries. A yellow tank is positioned on the left, emitting a fan of red sensor rays. A purple tank is visible in the upper center. The interface includes two status panels on the right and a control panel on the far right.

Atom3 Status Panel:

- Life: Yellow bar (full)
- Fuel: Yellow bar (full)
- Underneath: Blue bar (full)
- Visors: Black square (full)
- Computation Time: Empty box

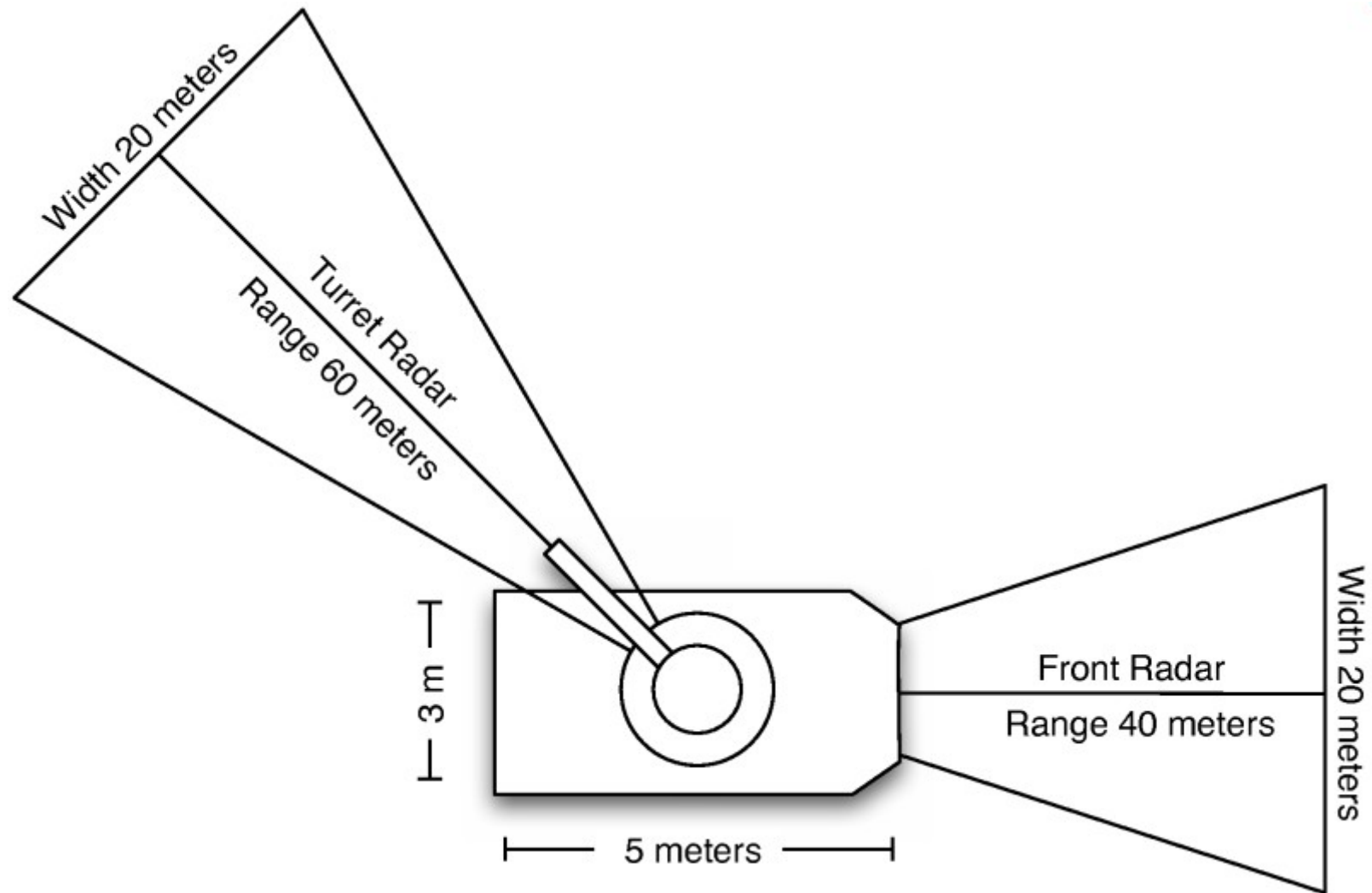
default Status Panel:

- Life: Blue bar (full)
- Fuel: Blue bar (full)
- Underneath: Blue bar (full)
- Visors: Black square (full)
- Computation Time: Empty box

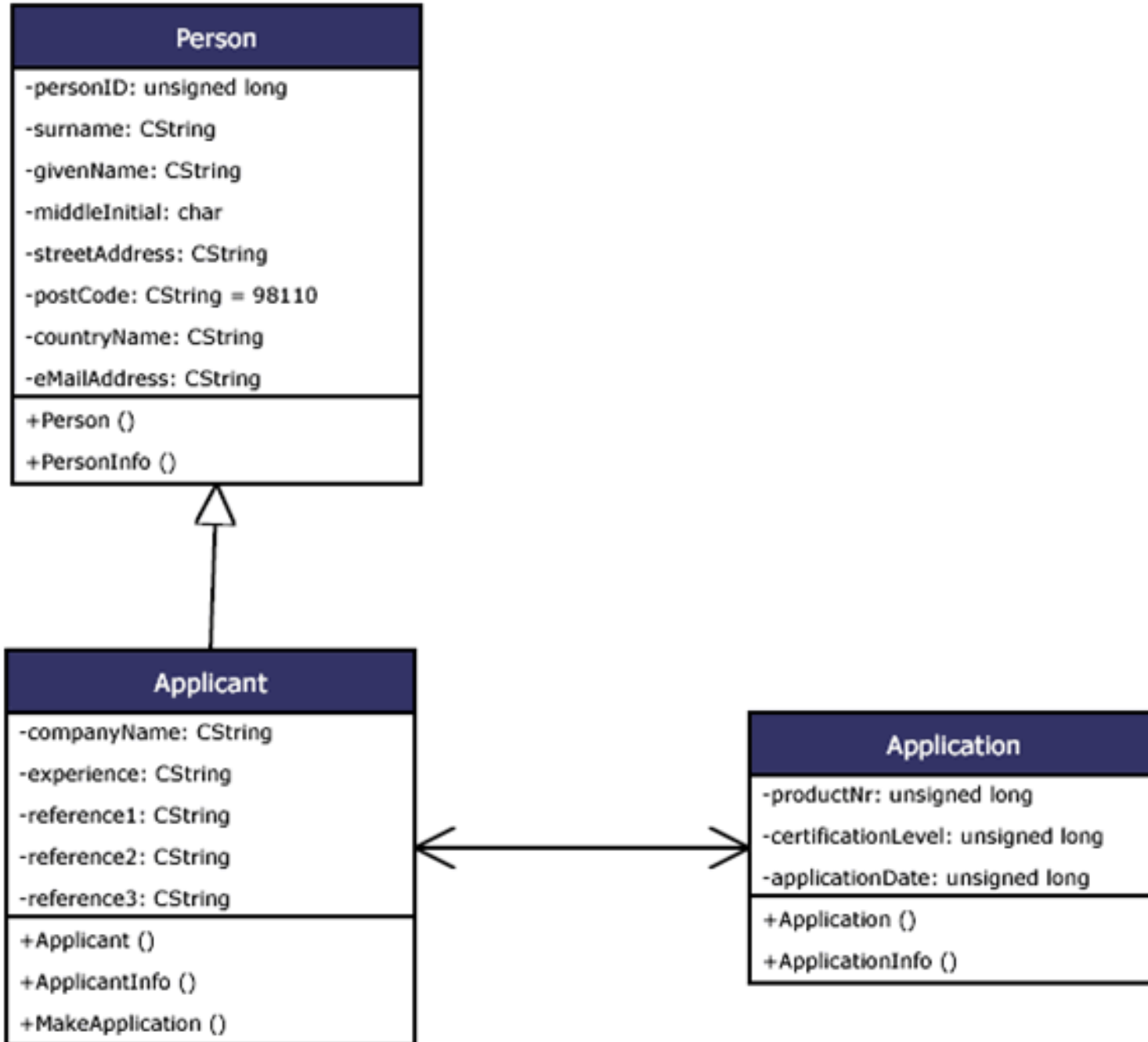
AI wars control Panel:

- Running
- Tank Rays
- Turret Rays
- Everything
- Perspective
- Single Step button
- Play Speed: 1.0
- Replays + button
- Rounds: 0
- Stat File: []
- Battle
- Save stats
- Refuel and repair button
- Reset all button
- Yellow: 0
- Purple: 0
- Tank1: default, Dummy, Atom3
- Tank2: default, Dummy, Atom3
- World File: []
- Load button
- Quit button

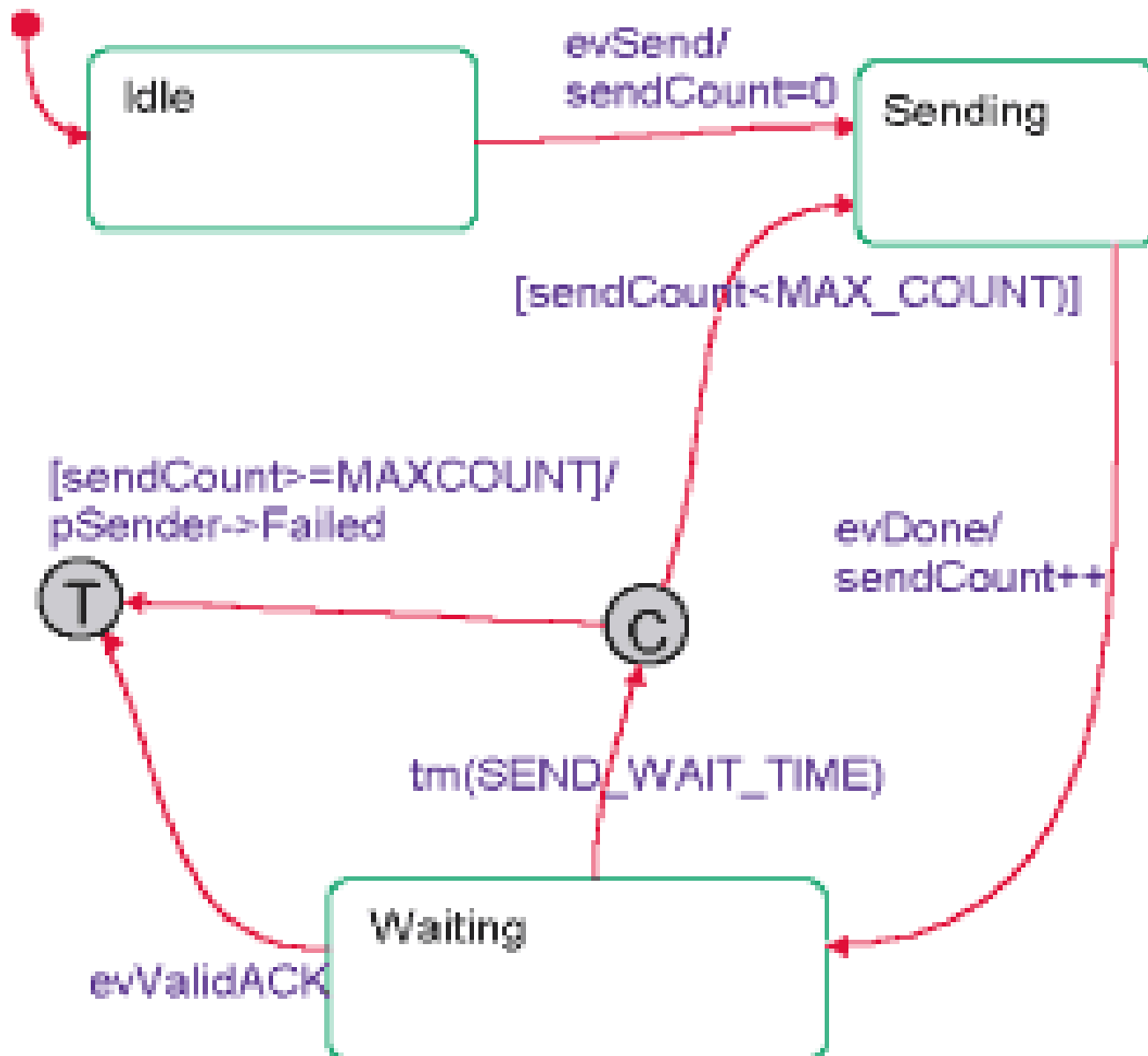
Tank



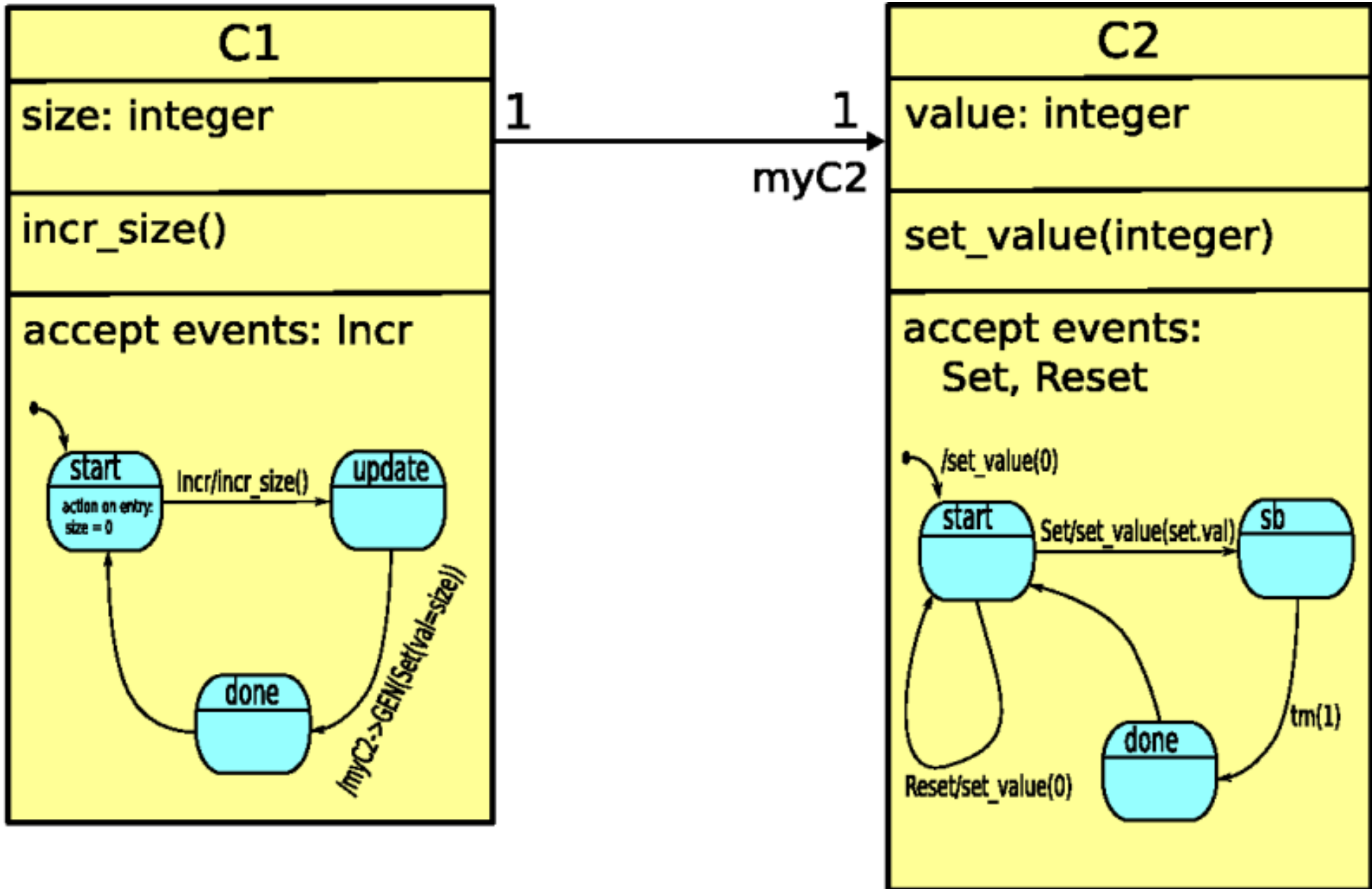
UML Class Diagram



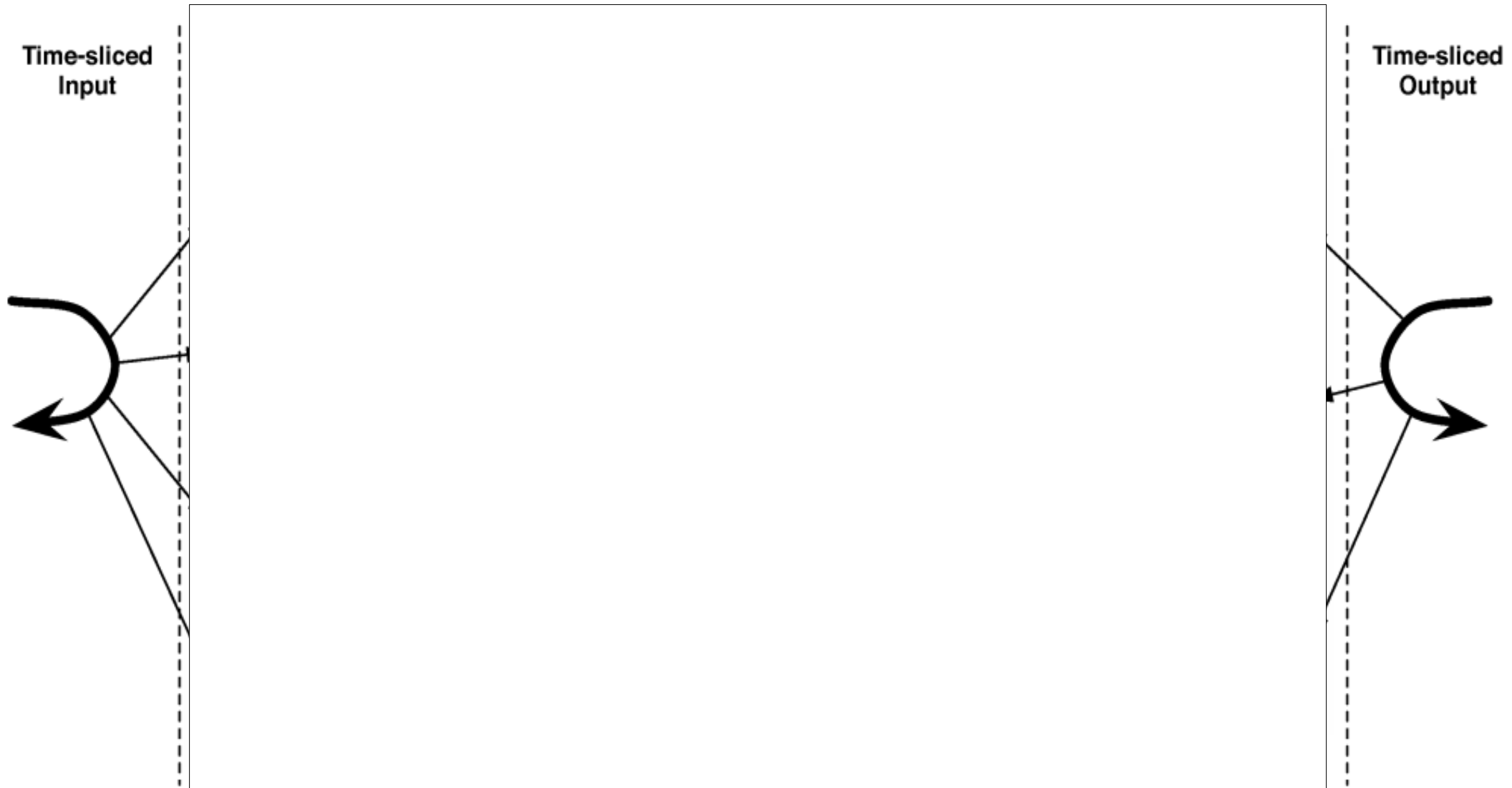
UML Statecharts



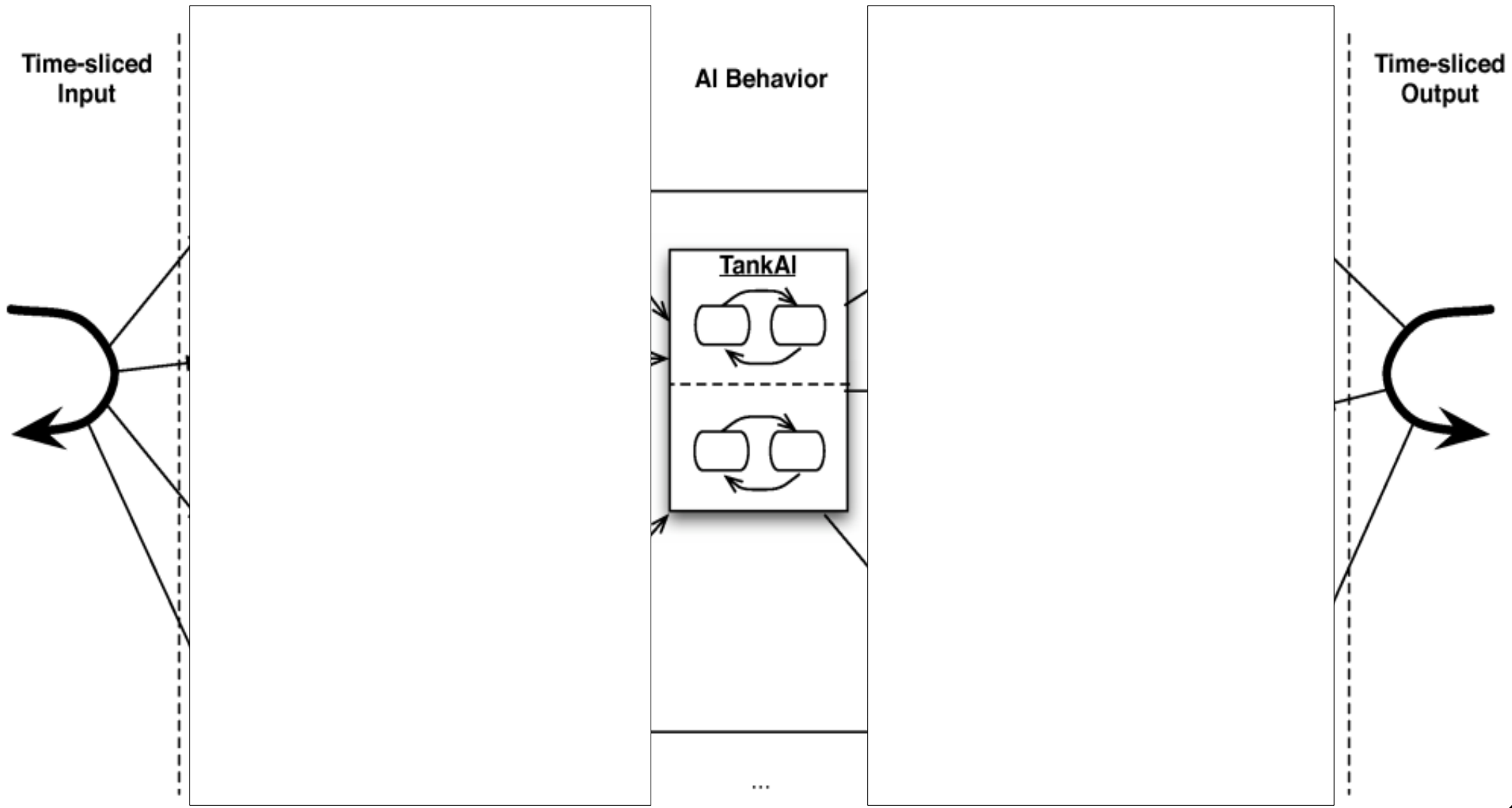
Class Diagrams and Statecharts



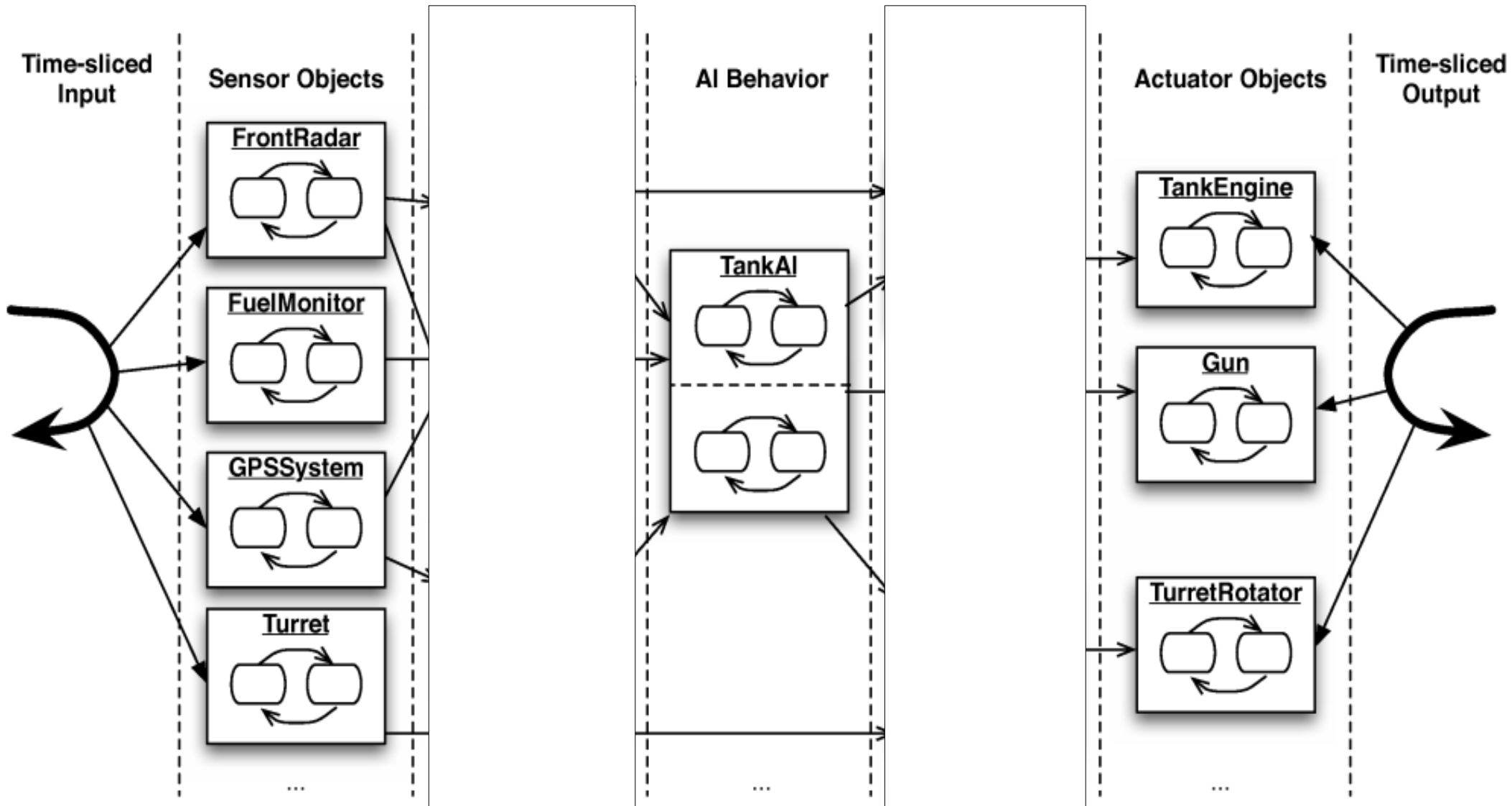
Decision Process Breakdown



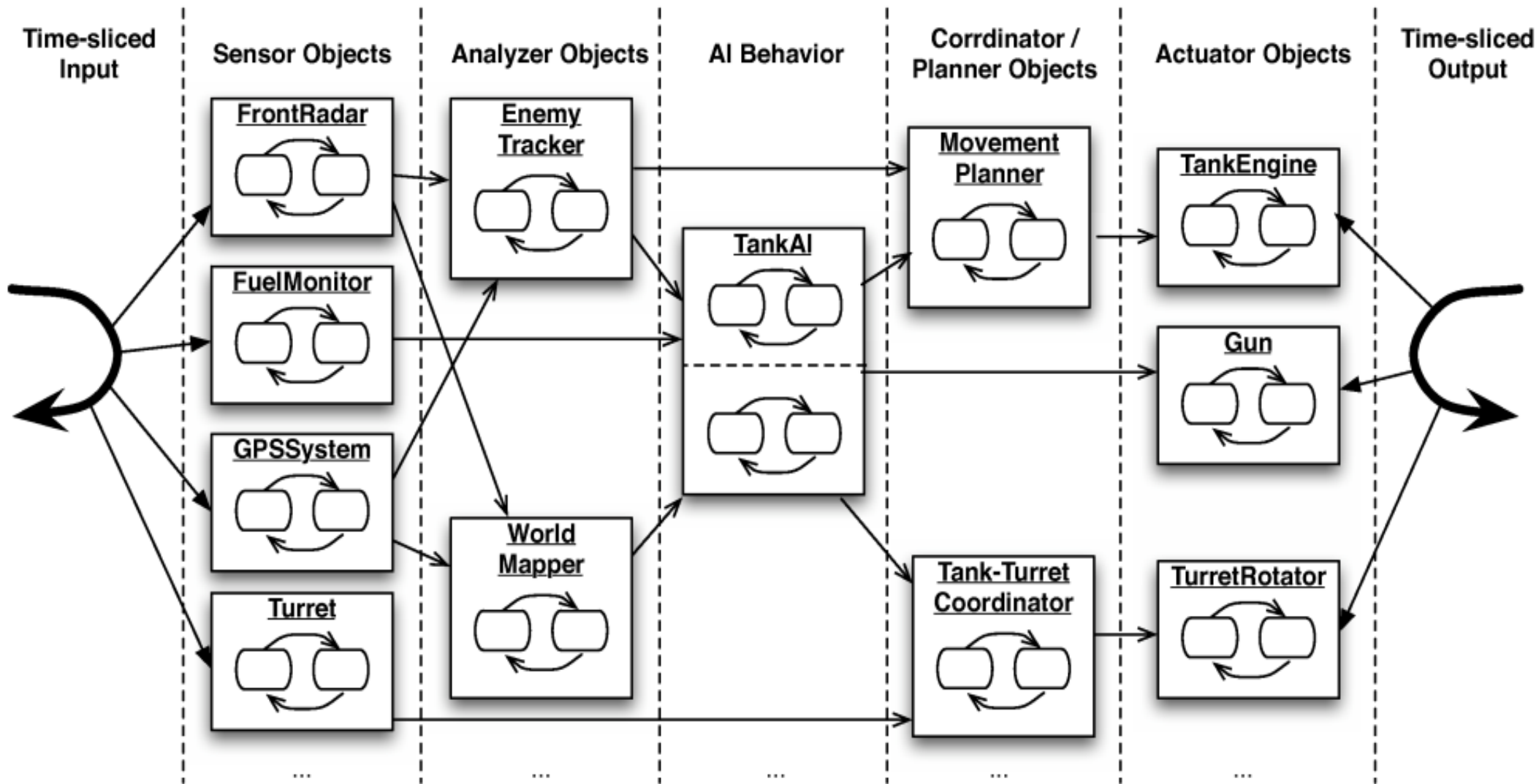
Decision Process Breakdown



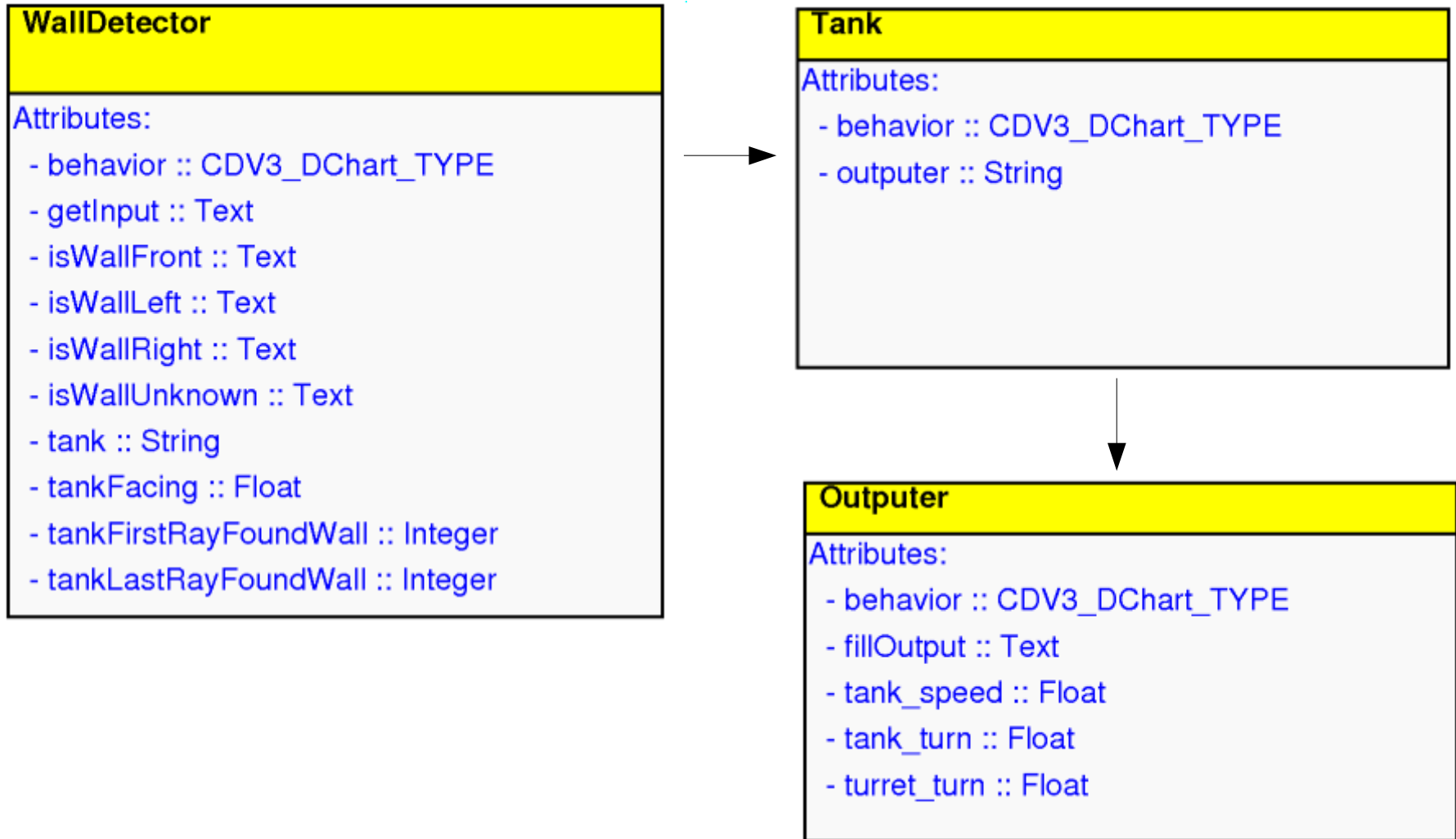
Decision Process Breakdown



Decision Process Breakdown

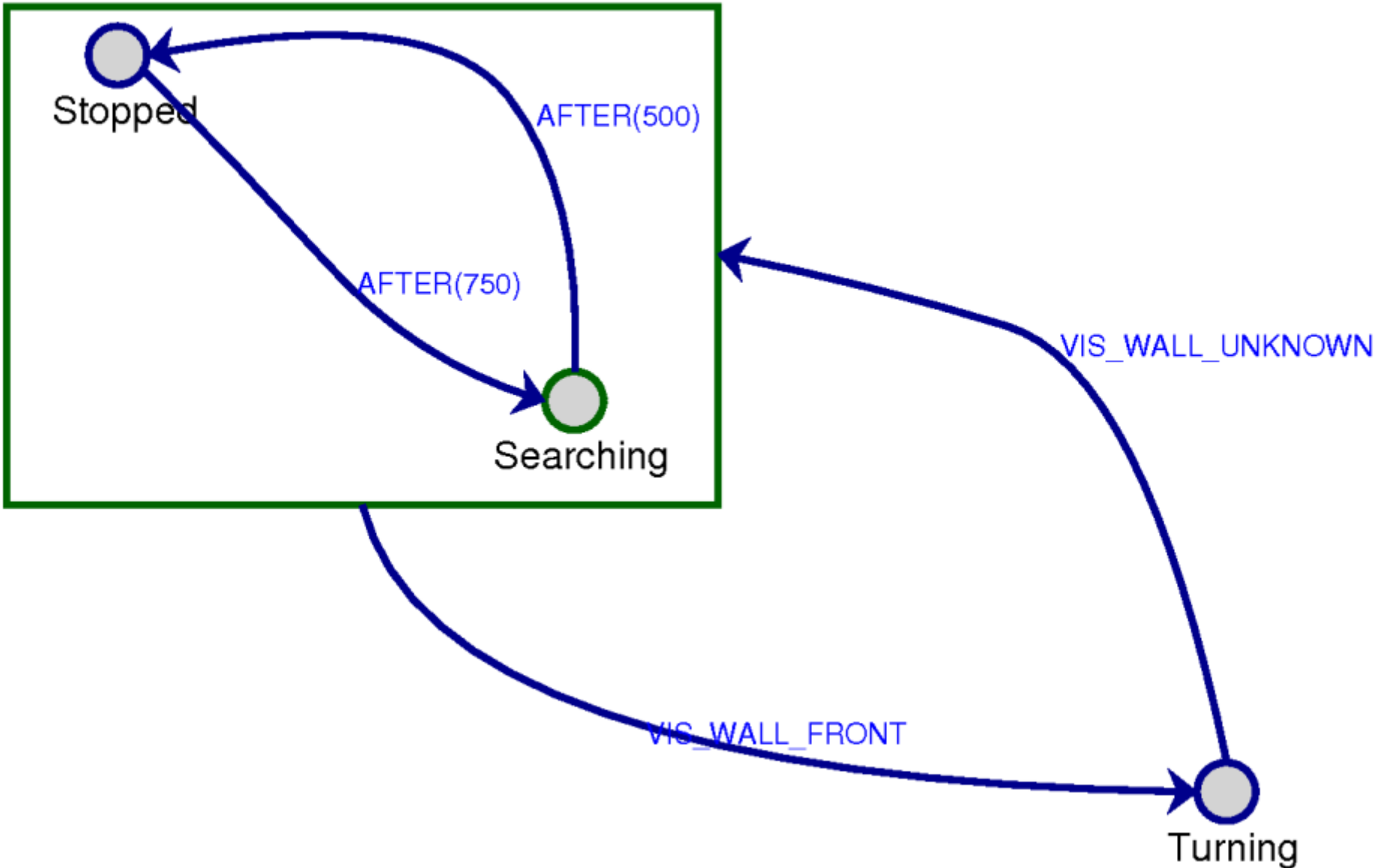


Class Diagram of Demo AI

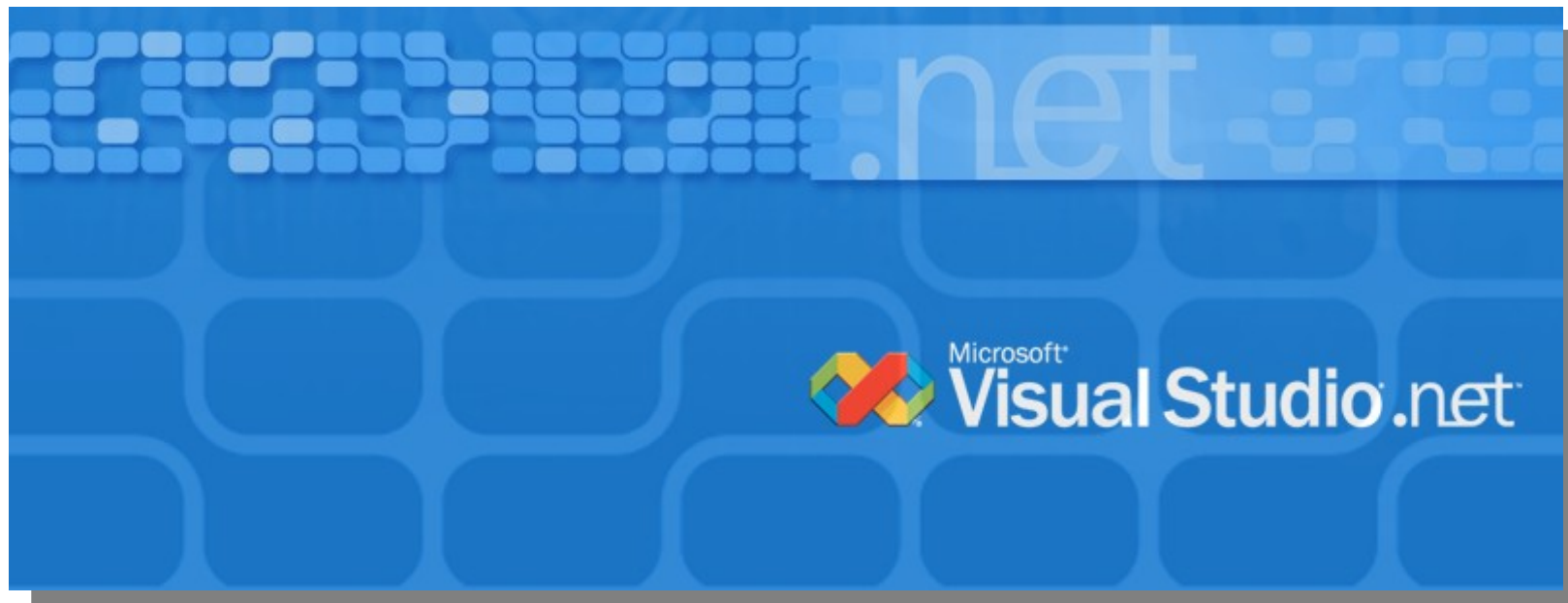
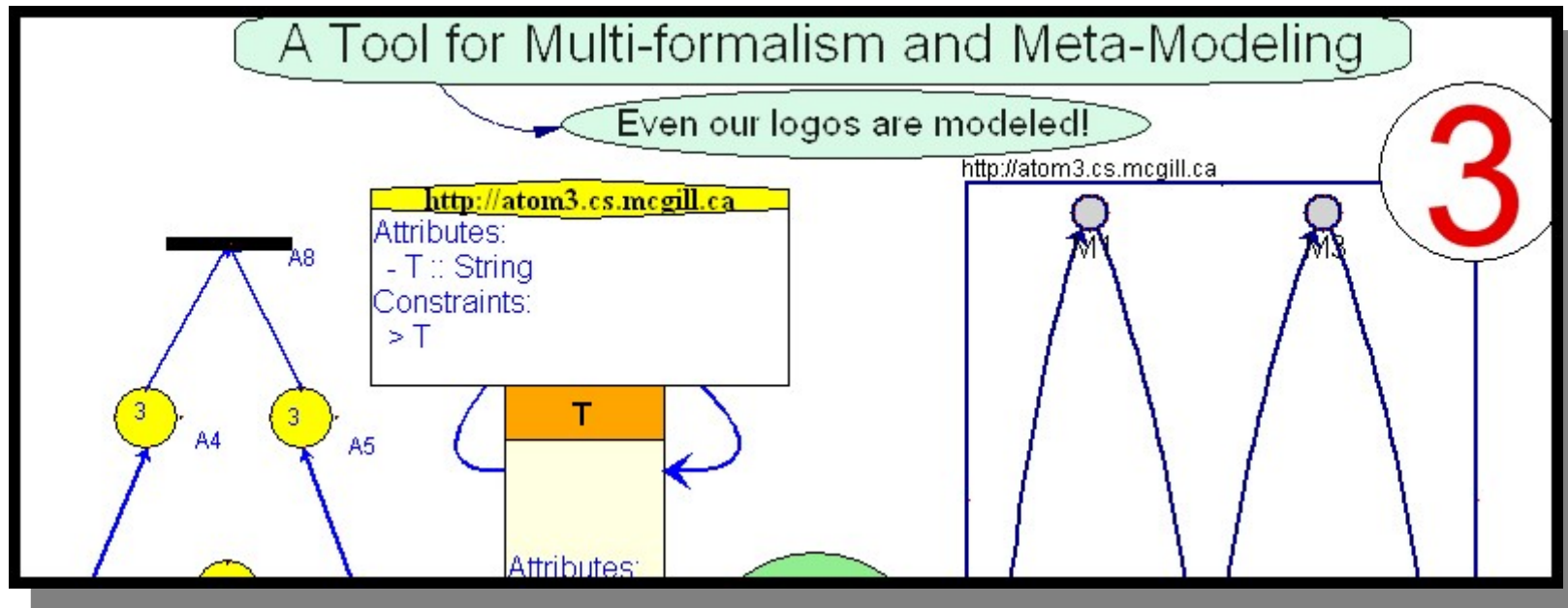


Statechart of Tank

Seeking



Demonstration





Questions?