# $\omega$-Regular Shielding

1. A. Anand, SP Nayak, **R. Raha**, A-K Schmuck: Follow the STARs: Dynamic ω-Regular Shielding of Learned Policies

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# How to do it model-free or model-abstract?

# *MARG

## Monitoring and Adaptive Runtime Guide

### Grid Generator

Enter Grid Size:

4

Wall density: 0.3

Generate Grid | Reload Page | Reset Session

### Grid Solver

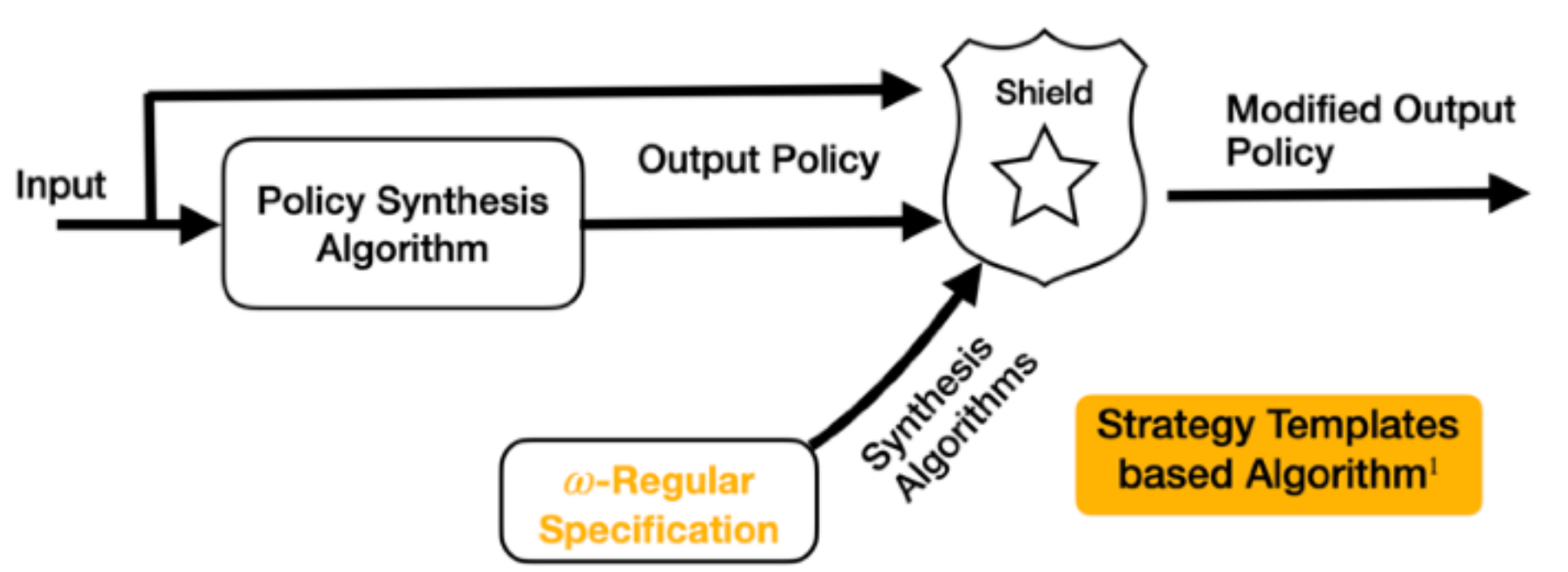
Modify ownership | Modify rewards | Modify initial state

Solve Game | Save Grid

* Powered by STARS (Strategy Templates-based Adaptive Runtime Shield)

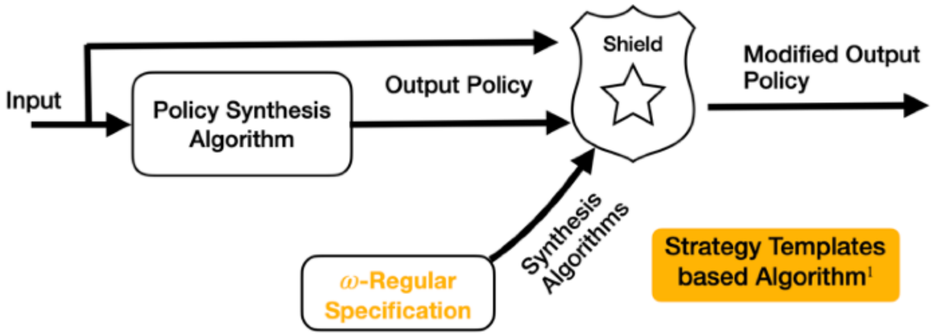
Imprint / Data Protection

Random | Add parity | 1 | Modify | Save | Delete parity


Input
Policy Synthesis Algorithm
Output Policy
Shield
Modified Output Policy
ω-Regular Specification
Synthesis Algorithms
Strategy Templates based Algorithm[1]

https://marg.mpi-sws.org/

# $\omega$-Regular Shielding



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# Trustworthy AI

Towards trustworthy decision making leveraging Formal Methods and RL

Specification Inference

+ RL

Verification

`Ensure controller satisfies the goal’

Adaptive Reactive Synthesis

+ RL