PEAS Description

Performance Measures – Win rate, acceleration of win rate

Environment – Risk Board Game (World Domination standard rules. See instructions)

Actuators – Any valid move for a normal player (see instructions)

Sensors – Can observe the environment internally the same as any human player. The only unobservable characteristics are that you do not know the status of cards you don’t possess.

ODESDA-K Description

O – Partially Observable. (you see the entire state minus the state of individual cards that haven’t been turned in)

D – Stochastic. Risk is heavily influenced by the outcome of die roles, with no way to determine whether or not you will succeed in a particular endeavor. You can however tilt the odds in your favor.

E – Episodic. The Risk board game is an episode that will repeat in full after each game. The outcome of the game has no effect on the outcome of the next game.

S – Static. The environment will not change while the agent is deliberating. You take turns in Risk.

D – Discrete. Everything in Risk can be represented in finite integers.

A – Multi-agent. There are more than one fully capable agents.

K – Known. The rules of the environment are not just known but enforced by the rules.

Structure:

Actually playing the game and settings config: world\_domination.py

Game Environment: risk\_enironment.py

Players: base class agent.py and subclasses human.py

Hasbro. *Risk Instructions*. Web <https://www.hasbro.com/common/instruct/risk.pdf>