RUBS: AI

*Note: This was sourced from notes, which will be provided in a separate file.*

## The AI Object

*Figure 1*

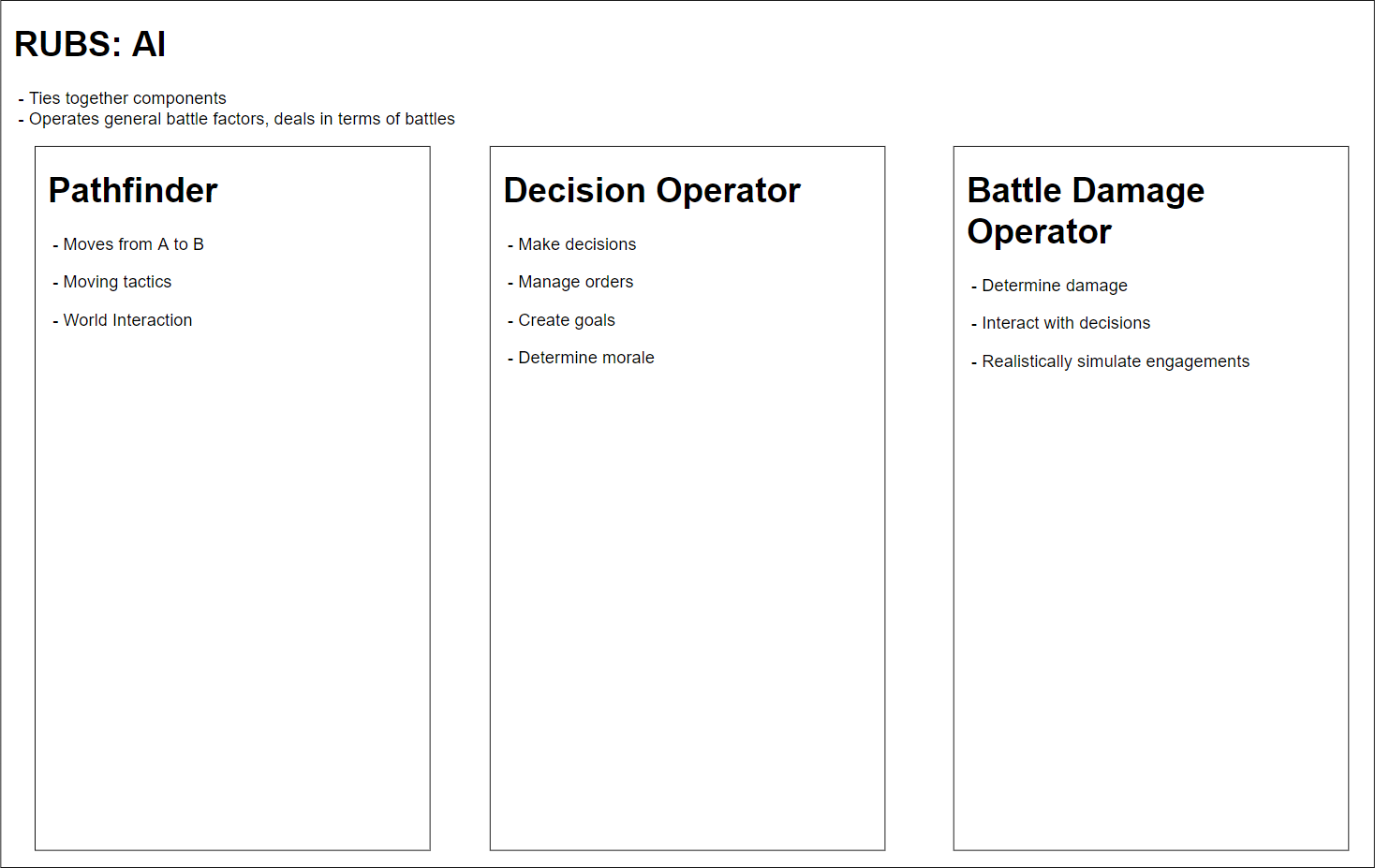


Figure 1 describes how the pathfinder, decision operator, and battle damage operator components work together in a larger RUBS: AI object to create a battle. The AI object deals with entire armies, while the components deal with individual units in armies.

## The Pathfinder Component

This component works by putting together different movement patterns based off of other components’ interactions withs units. To put this into example, the pathfinder will find a path that is away from the nearest unit if the unit’s decision is to retreat(which is made by the decision operator), and if it is to stay in stalemate, it will not move much(if anything). If its decision is to attack, it will attack.

Now let’s get down into the calculations. The algorithm used to move from A to B(to calculate delta) is to find out a speed based off of morale and the unit type, and if the unit is left of the target, it will add *speed* to its *x* exact position. If it is down, it will add *speed* to its y exact position, etc.

Its job is also to avoid obstacles, which is initially set by the target point(A new target point is set every second, and it is determined by the world, decisions, and distance from the target unit). These obstacles may include buildings, rivers, and height.

## Decision Operator Component

The decision operator simply calculates morale, sets the entire army’s orders, create the individual units’ decisions.

## Battle Damage Operator Component

<to be filled in>