Player defender

Movement: (when opposition has ball)

* Closest player attempts to tackle. (Predicts to intercept the player rather than run directly towards it.)
* If not closest player to ball mark closest enemy player to that defender’s starting position.
* Defender cannot mark enemy players past a certain point on the field.

Movement: (when ball is in possession by goalkeeper)

* Get into space (furthest away from all enemy players while staying in a certain radius from starting position.
* A line of sight to goalkeeper must also try to be achieved to the goalkeeper. (enemy player cannot be blocking path between goalkeeper and defender.

Movement: (when ball is in possession by another defender)

* Get into space (furthest away from all enemy players while staying in a certain radius from starting position.)
* A line of sight from the defender must try to be achieved to the defender with possession.
* Possible use of temporally adding/subtracting to the starting position y value so that defenders can keep formation while operating further along the pitch.

Movement: (when ball is in possession by an attacker)

* Possible use of temporally adding/subtracting to the starting position y value so that defenders can keep formation while operating further along the pitch.
* Max y value so that they do not go past the half way line.

Pass:

* Passing ball into space?

Tackle:

* Probability of success.
* Probability of red/yellow card.

Player attacker

Movement: (when opposition has ball)

* Closest player attempts to tackle. (Predicts to intercept the player rather than run directly towards it.)
* If not closest player to ball mark closest enemy player to that attacker’s starting position’s y value.
* Do not mark enemy player in teams first 1/3 of pitch.

Movement: (when ball is in possession by goalkeeper/defender)

* Get into space in the second half of the pitch (furthest away from all enemy players while staying near its starting y value.)
* Line of sight may not be needed as goalkeeper can kick ball in air (implement ball in air later)

Movement: (when ball is in possession by another attacker)

* Get into space while staying in formation (near starting y value)
* Operate near x value of ball.

Player awareness:

Begin with 360 degree player view.

Function to calculate velocity of other players and ball:

* If player sees object then note coords of the object
* Next frame if object still in vision then note coords of object.
* Calculate velocity.
* If ball then calculate location that the ball will come to rest.