**Sneaker Seeker Game**

**Game rules**

the player should split to 2 groups: **Sneakers** & **Seekers**.

The goal is to scan the board in time and detect as many Sneakers as possible.

parameters

* The board size is:
* Seekers can communicate up to .
* Seekers can see up to meters ahead. In a shape of degree FOV.
* Seekers and Sneaker move at the same velocity speed .
  + Seeker's speed can be raised, for limited time , up to 🡪

Assumptions

* Board is 2D.
* Seekers **may** have enough time to spread around the board before the Sneakers will get in.
* Sneakers come from the same general direction.
* Sneaker shouldn't change their direction and speed along the Board.

**Seekers Strategies**

Phase 1 – "Spread Out"

1. **In case of "enough time" before the Sneakers arrives and known direction:**

Spread along the edges of the board with the center being the nominal value of the estimated arrival vector. And the spreading along the edges is a function of the statistical certainty of the arrival vector. Can be modeled as normal distribution of "potential energy".

1. **In case of "not enough time" before the Sneakers arrives and "known direction":**

Line up as and move towards to incoming estimated arrival vector.

1. **In case of "enough time" before the Sneakers arrives and "unknown direction":**

Spread evenly across the inner area of the board.

1. **In case of " not enough time" before the Sneakers arrives and "unknown direction":**

Move as a rectangle structure, into the evenly spread location, inside the Board, while seeking for the Sneakers.

Phase 2 – "Seek"