Hi Martijn Coeveld,

I hope you are doing well. I am writing to you because I am invited to do a test project as part of TBA employment process.

First of I try to describe the project in my own words for you to see whether I understand it well.

Here is below the project definition:

1. The system has a user interface (Web or console) that enables the user to instantiate vehicles and tell them to move.

* The vehicle movement is commanded by user.
* The user send message to vehicle containing direction of movement, distance and speed.
* Direction of movement is an angle to current movement direction.
* User can send several movement message to the vehicle and the vehicle run them sequentially.
* The vehicle sends its current location to server.

2. The user can change vehicle movement direction at any time by sending message containing new direction. Also the user can ask the vehicle to stop moving.

Optional:

3. The system has a web UI to enable the user to monitor vehicle current location.

In this project vehicle is simulated by a system process and there will an asynchronous messaging system for communication between different parts of system.

Now by assuming the above system definition I have the following questions:

Q1- How vehicles know about their location?

"I think that there is 3 solutions that makes vehicles aware of their location which are

* Arithmetic calculation of current location using initial coordinate and movement direction and distance.
* Using RFID and sensors
* Using GPS

what solution I should use for this project?

Q2- Should vehicle avoid collision in their movement or any other intelligence they should have?