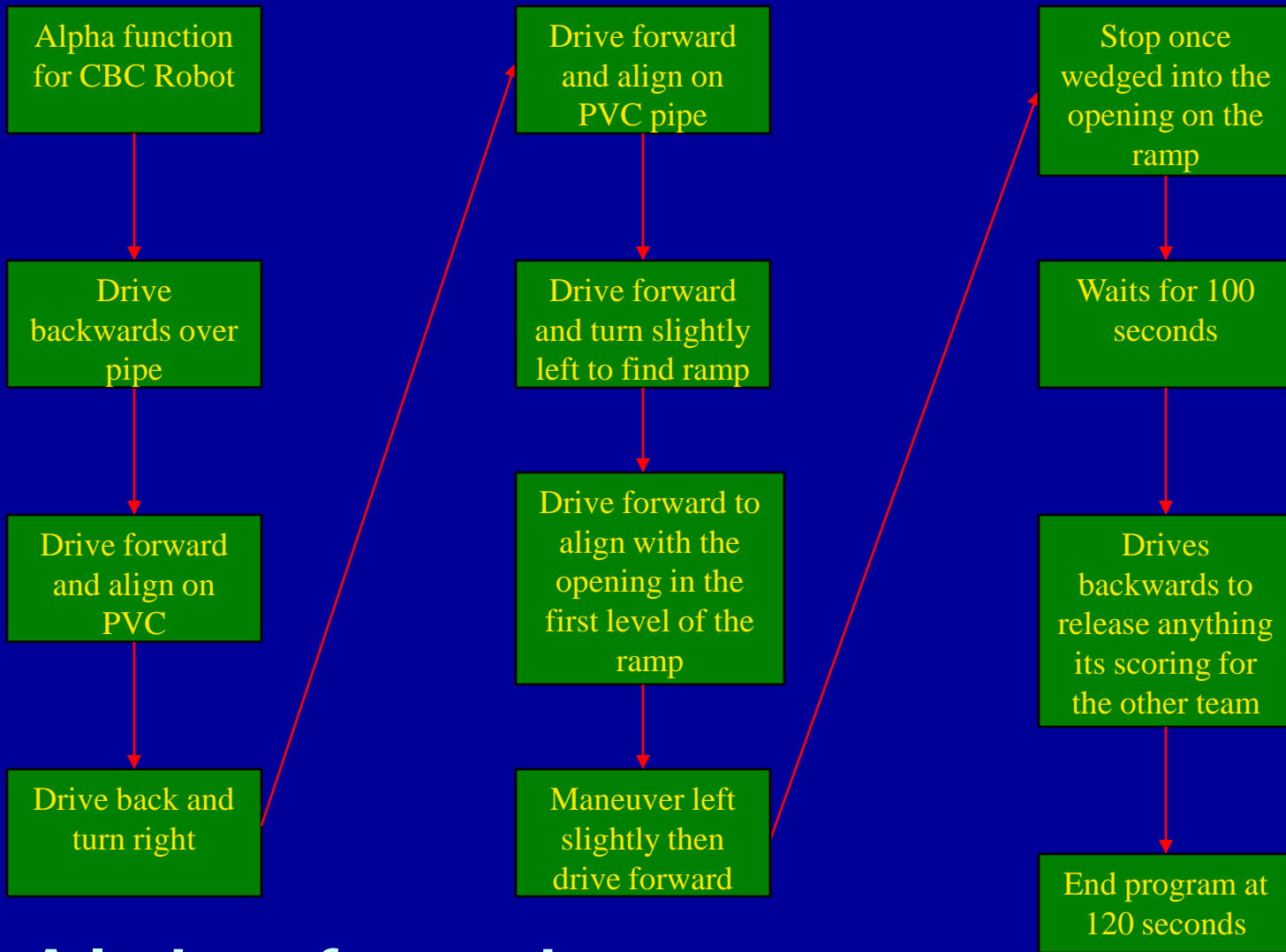


Software Documentation

Table of Contents

Team 191

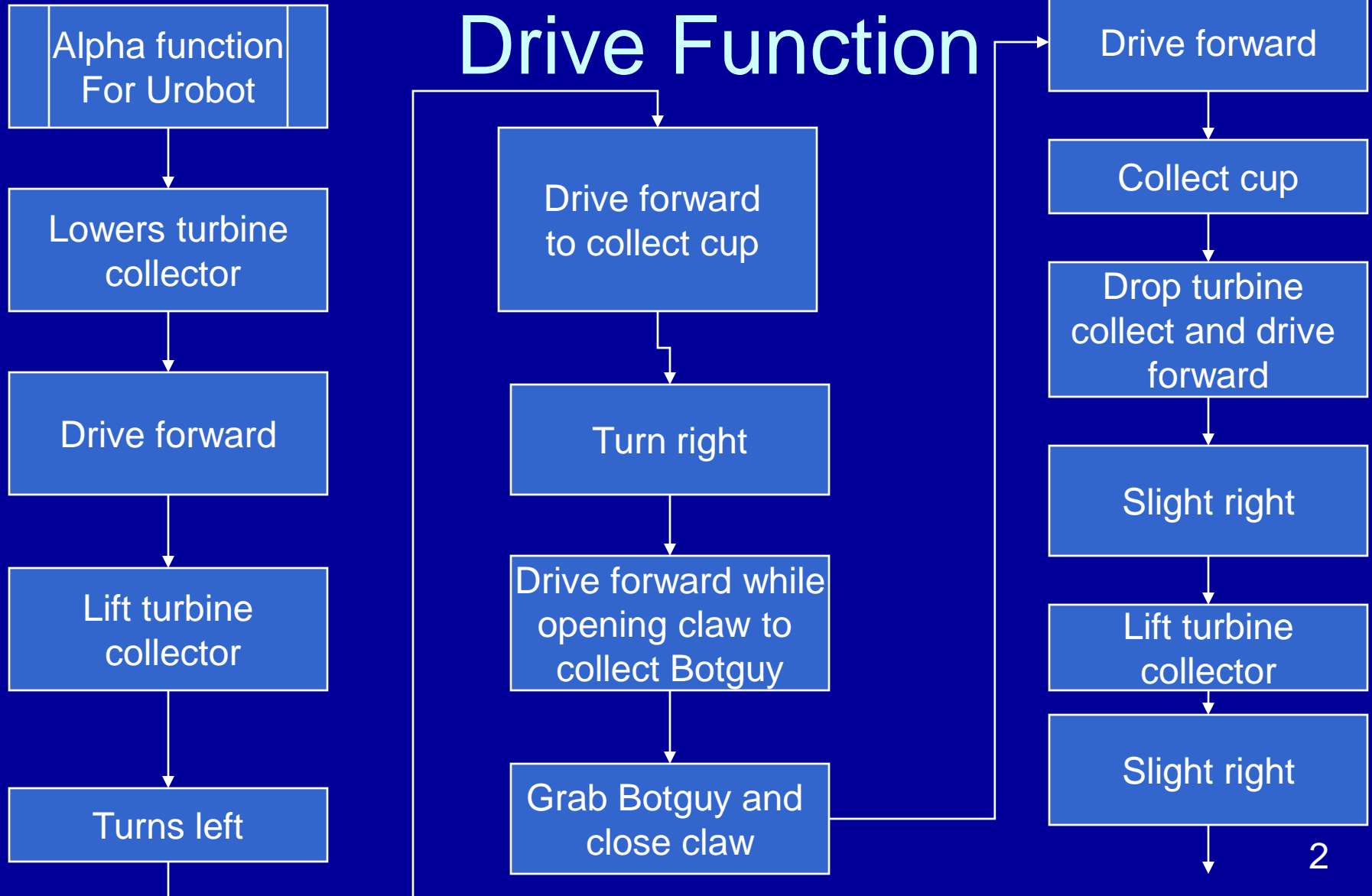
CBC flow chart	1
I-Create flow chart	2
I-Create architecture	4
CBC architecture	5
Future plans	6



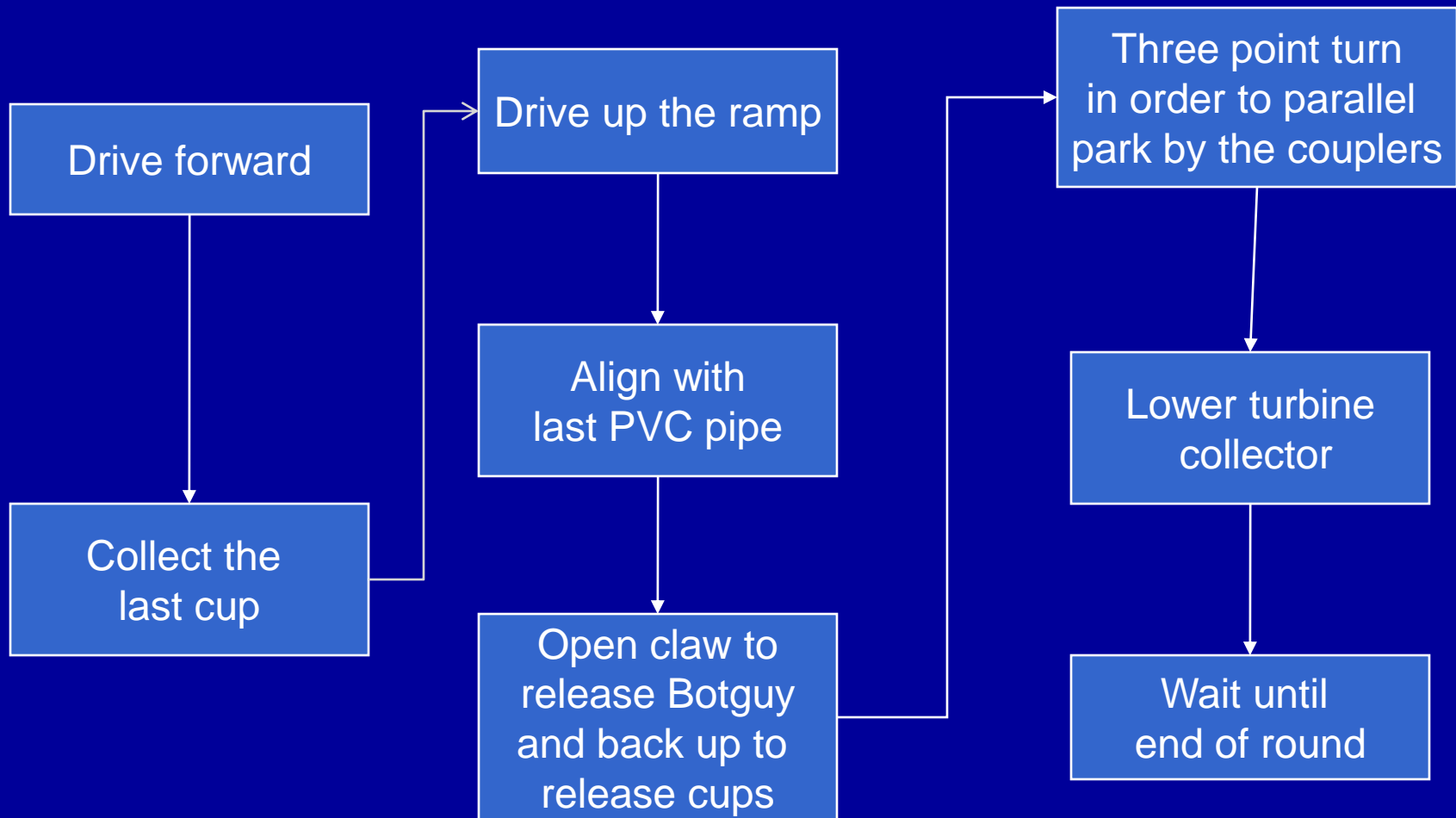
Alpha function: CBC robot

I-Create Alpha Function: Main

Drive Function



I-Create Alpha Function contd.



I-Create Architecture

Currently, the I-create is task oriented. It is currently assigned the role of collecting Botguy, the turbines, and the cups full of fossil fuels. To do this, it is equipped with a plow that is capable of gathering the cups and a claw that can pinch Botguy on one side and the turbines on the other. Once he has accumulated all these objectives he will continue towards the ramp and attempt to stop at the top tier. While on the top section it will deposit Botguy safely for a 3 times multiplier and then attempt to place the turbines into the couplers provided at the top level. It will then wait until time has expired to score maximum points.

CBC Architecture

To balance out the I-Create's offensive plan, the CBC will be used to halt the other team from scoring any points. As of now, the CBC is also task oriented, having planned movements. It first moves out of the starting box off of a ramp to jump the PVC tubing closest to the opponents scoring ramp. On the front of the robot it has a flat plow that is long enough to prop itself in between the two protruding ends of the first level of the ramp. This stops anything from going in or out. It will then wait their until time expires. This is the CBC robot's one and only task. We rely entirely on the I-Create robot to score points, but it helps if we can ensure that they other team will score no points at all.

Future Plans

We intend to add behavior architecture to both robots. Since the robots are currently completely task oriented, they are susceptible to opponent intervention and the variability in the game boards. The robots would combine hard-coded tasks and sensor input to produce a behavior that is capable of dynamically adapting to changes and variability. I-Create, for example, is planned to use sonar to locate the cups filled with fossil fuels on the field more accurately. It would ping for a response, the cups would return that ping and we would be able to determine the distance of the cup more accurately. For CBC robot, the USB camera would aid in the location of the water. The current problem is that the CBC robot is having difficulty locating the water consistently, but with the addition of a camera, it can adapt to interference and variability in the position of them.