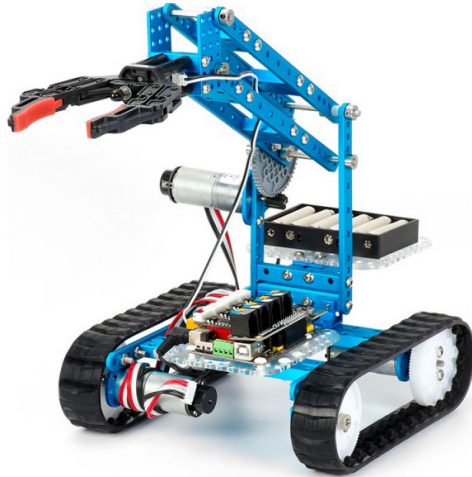# ULTIMATE 2.0 - Secret mission

Mission briefing

Your mission, should you choose to accept it, involves the recovery of a secret item designated "Husky". Because of the harsh environment you will be using Mate, a state of the art Ultimate 2.0 class robot. Mate is equipped with tank tracks and advanced robotic arm which should enable you to grab the secret item and carry it to the safety.

Robot programming

Because of the nature of the mission all robot movements need to be planned and programmed beforehand using software tool Mblock 5. Use the following commands:

- To start the programming sequence.

when Ultimate 2.0 (MegaPi) starts up

- To move the robot forward or backward at selected motor power and for the selected amount of time.

move forward at power 50 % for 1 secs

move backward at power 50 % for 1 secs

- To turn the robot left or right at selected motor power and for selected amount of time.

  turn left at power 50 % for 1 secs

  turn right at power 50 % for 1 secs

- To move robotic arm up or down. Use negative power values to move in opposite direction

  DC motor port4B ▾ turns at power 50 %

- To open or close robotic arm. Use negative speed values to move in opposite direction.

  encoder motor port3 ▾ rotates by 360 degrees at speed of 30 r/min

- To wait for a selected amount of time.

  wait 1 seconds

When finished program needs to be uploaded to a robot.

Objective map: