Known Detect-O-Bot1000 Details

* Must detect various metals
* Is battery powered
* Use existing HCS12 board to control motors
* Must select a Linux platform to control the HCS12 board autonomously.
* Linux platform gets instructions from a joystick.
* Must be untethered.
* Uses tank treads instead of wheels.
* Must non-permanently mark locations where metal is found.
* Only has to operate in standard indoor environment.
* Proof of concept
* While testing, must keep in mind that we are not supposed to be able to see the robot.
* Base with motors and treads is provided, but there is no guarantee that they are 100% functional.
* It will be driving over a large, low-shag carpet.
* Some metal detected could be erroneous, (i.e. rebar in ground).
* The metal detection method is up to our discretion.
* Speed and accuracy are considerations in the performance of the robot.
* 1 motor per tank tread, each motor has an encoder system.
* The robot must be controlled from at least 10-15 ft away.
* Wifi modules are allowed and available on some of the Linux boards.
* TS7250 can handle unregulated battery supply. Raspberry Pi and BeagleBone do not have such regulation.
* Both on-board batteries are estimated to drive the system for one to two hours.
* Chassis cannot be modified, except for the top board that separates from the rest of the chassis.
* We will be evaluated on how well we follow the schedule.
* Accuracy of marking system is within half the width or length of the chassis.