Year 6 Pragbot Evaluation Challenge

Mitch Marcus

ARO Challenge for SUBTLE MURI: 7/31/12

"I have to send up one measure ... we will use next summer to judge if the MURI has been a success."

"it would be nice if the measure is ... [quantitative]."

– Joe Myers

Response: Mitch Marcus, Constantine Lignos, Joe Myers.

The Task

Complete the natural language (English, NLP) interactions involved in a soldier-bot team mission to free hostages, defeat bombs, and neutralize fleeing adversaries within a simple simulated environment. Team is comprised of a bot and a human soldier/commander.

Standard: After less than 1 hr training with the robot, better than 50% overall task completion without further guidance from the instructor.

Conditions:

1. ***(We pick environment, which is like Pragbot II.)*** **Environment is researcher-selected: reasonably empty set of rooms within a single floor of a maze or office setting, with a known approximate map (lacking info on adversaries, hostages, or bombs) given in advance to both members of the human-bot team.**
2. ***(The focus in only our research topics.)*** **The bot is researcher-designed to focus on NLP interaction ...; peripheral capabilities which are not the focus of this project ... are not enabled on the bot and will be compensated for. All objects will be marked with fiduciaries ....**

Conditions:

3. ***Human adversaries try to flee the bot and escape*** **once flushed out of hiding, and** ***aggressively attempt to disable the robot. The soldier can re-enable the robot by physical proximity. The soldier can neutralize the adversaries by locking them within a simple sight.***
4. ***Human hostages are static, are as cooperative as possible, easily identified, and can only be freed by the soldier.*** **They are frequently kept in rooms with bombs.**
5. ***Bombs are triggered with 100% certainty by the proximity of the soldier, and are 100% lethal. Bombs are defused by the robot contacting them....***

Conditions:

6. **Interaction between the soldier and the robot will use a *tablet interface, with communication by keyboard.***
7. ***Training of the human soldier* will include observation of at most a few sample interactions and participating in at most a few practice missions with an instructor's aid.**
8. ***In any given scenario, researchers will choose* the number of hostages to be freed, of bombs to be defeated, and of adversaries to be neutralized and how many are permitted to escape without *mission failure.* Researchers will choose how to vary the map layout and the number of rooms.**