Year 6 Pragbot Evaluation Challenge

Mitch Marcus
“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.