An Integrated System for Perception-Driven

Autonomy with Modular Robots

Dear Editors of Science Robotics,

Enclosed is a draft of our paper entitled “An Integrated System for Perception-Driven Autonomy with Modular Robots” which we would like to submit for consideration to Science Robotics.

**Main Point:**  
Since the field of modular robotics was in its nascence, the vision modular robots reconfiguring in response to complex tasks in *a priori* unknown environments has been a been a major motivator for work in the field, but has never been demonstrated. This paper presents the first system capable of autonomously completing high-level tasks by reconfiguring to meet the needs of a perceived, *a priori* unknown environment. This results marks a milestone in the field, and represents the state-of-the art of reconfigurable robotics.

**Information Relevant to the Review Process**  
The material in this manuscript has not been published elsewhere, nor is it under consideration elsewhere. A previous version of this paper was submitted to IEEE Transactions on Robotics (T-RO), but was not published and is no longer under review.

**Data, File, and Reference Information**  
Our submission consists of the following files:

* DaudelinEtAl\_manuscript.pdf - Main manuscript file
* DaudelinEtAl\_supplement.pdf - Supplement file
* DaudelinEtAl.mp4 - Video of experiments
* Reference materials:
  + jingAccomplishing.pdf - Referenced in our submission; Conditionally accepted to Autonomous Robots
  + tosunAugmentation.pdf - References a previous (significantly different) version of this paper, which is available on ArXiv.