

Paul Bielski  
Titan-LinCom Corporation  
1020 Bay Area Blvd. Suite 200  
Houston, TX 77058  
+1 (281) 483-3319  
bielski@lincom-asg.com

To whom it concerns,

I am writing this recommendation for Arjang Hourtash of Simplify Robotics.

At Titan-LinCom's request, Arjang assembled a dynamic computer model of the mechanisms incorporated in the Space Station Robotic Manipulator System (SSRMS) Latching End Effector (LEE), the robotic arm attached to the International Space Station (ISS). The model is to be used in a simulation of the robotic capture of the Japanese H-2 Transfer Vehicle (HTV) at the ISS. The simulation will be used to perform analysis of possible failures in the LEE, plan appropriate responses, and ultimately to train astronauts.

The three mechanisms in the LEE include a rotary snare ring made up of three cables that wrap around a pin on the payload to be captured, a carriage that moves along a screw drive to pull the payload into a known state relative to the LEE, and a set of latches that lock the payload in place. The model is dynamic in nature; its main goal is to provide the forces and torques applied to the payload by the LEE. None of the previously existing models were considered adequate from a fidelity standpoint. Arjang modelled the first two of these three mechanisms.

Arjang performed a survey of the previously existing models to determine their strong and weak points, constructed a LEE model based on information gathered in that survey, collected data from a variety of friendly and hostile sources to populate the model, built a prototype in MATLAB as a proof of concept, translated the model into the C-based Trick simulation environment that is widely used at the Johnson Space Center, integrated with another group that built the contact components of the model, and had begun verification of the model against previous models as of the time of this letter.

I have great respect for Arjang's technical capabilities as well as his character. He exhibits curiosity, enthusiasm, willingness to listen and accept criticism, and the ability to defend his position appropriately when he is correct. It has been a pleasure to work with him, and I believe that his support has been crucial to the progress we have made on our task.

Paul Bielski



Robotics Engineer, Titan-LinCom Corporation  
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