Virtual and Physical Integration of Autonomous Vehicles for an Automated Humanitarian Mission in EasyChair.

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Abstract.

As a recent report of the Intergovernmental Panel on Climate Change (1) confirmed, there’s substantial evidence that global climate change exists. This change may well be responsible for intensifying effects of natural disasters such as storms, floods, earthquakes, and droughts that have an impact on the world population. With technology as a potential equalizer, here we explore requirements for humanitarian missions and the feasibility to address the natural disasters with emerging technologies and the cyber-physical systems paradigm (2, 3) tied to the human in the loop (4, 5). Our solution provides the survivors and the emergency personnel with information to locate and assist each other during a disaster event. The system allows to submit a help request to a MATLAB-based mission center connecting first responders, robots, drones, autonomous aircraft, and ground vehicles that are simulated with Simulink (6). The results are visualized in Google Earth interface.

References


1 MATHWORKS- {Justyna.Zander; avizinho; Pieter.Mosterman}@mathworks.com