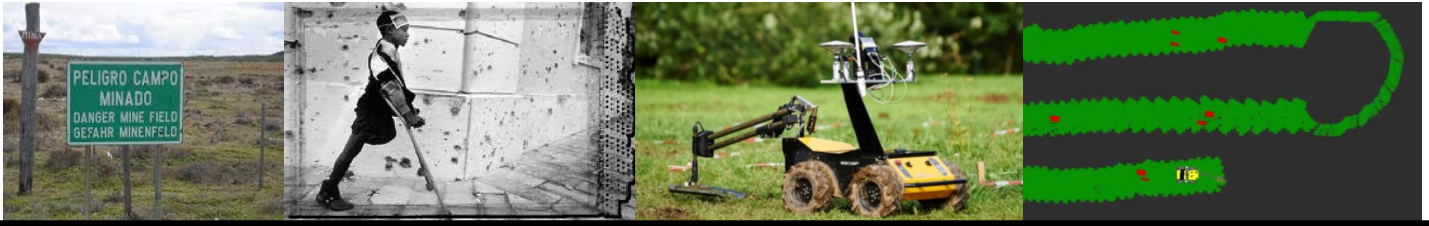


IEEE-RAS Humanitarian Robotics and Automation Technology Challenge

"Help us to eradicate landmines and improve the quality of life for civilians"

May 16th to 17th, 2016 ICRA, Stockholm, Sweden (Coimbra, Portugal remotely)



<http://www.isr.uc.pt/HRATC2016>

Call for Participation

According to the UN Mine Action Service, landmines kill 15,000-20,000 people every year (mostly children) and maim countless more across 78 countries. Demining efforts cost US\$ 300-1000 per mine, and, for every 5000 mines cleared, one person is killed and two are injured. Thus, clearing post-combat regions of landmines has proven to be a difficult, risky, dangerous and expensive task with enormous social implications for civilians. Motivated by these considerations, the IEEE Robotics & Automation Society – Special Interest Group on Humanitarian Technology (RAS-SIGHT) is inviting the academic and non-academic community to participate in the third Humanitarian Robotics and Automation Technology Challenge (HRATC) at the 2016 International Conference on Robotics and Automation (ICRA'16).

Following on the footsteps of the success of the HRATC Challenge that was held at ICRA'14 in Hong Kong and ICRA'15 in Seattle, this HRATC edition will continue to focus on promoting the development of new strategies for autonomous landmine detection using a mobile (ground) robot. The Challenge will take place in three phases: 1) Simulation Phase, 2) Testing Phase, and 3) Challenge Phase. The strategies developed by the participating teams will be objectively and quantitatively evaluated according to the following criteria: **exploration time and environmental coverage; detection and classification quality; and landmine avoidance**. Teams will be progressively eliminated after each phase and the remaining teams would move on to the next phase culminating in the Challenge (Finals) phase at ICRA'16.

All teams will use the same robot, called FSR-Husky, that will be available before (for remote practice runs) and during the Challenge. Furthermore, participants will have access to a ROS-based simulator to develop and test their code before testing it remotely on the real robot.

How To Participate in the Challenge

All potential participants should submit a paper (1-2 pages) in the standard IEEE format including figures that describes the motivation and previous experiences/research (if any). The organizers will then evaluate this paper and an acceptance notification containing further steps would follow. All submissions should be sent to <hratc2016@gmail.com>. The Challenge will take place remotely in Coimbra, Portugal, and beamed in real time to the Stockholm Waterfront Congress Centre during ICRA'16. Necessary logistics and travel support will be provided depending on the number of qualifying teams.

More details on HRATC'14 and HRATC'15 can be found at <http://www.isr.uc.pt/HRATC2014/> and <http://www.isr.uc.pt/HRATC2015/>, respectively, and from following summary published in the IEEE-RAS RAM: "2015 Humanitarian Robotics and Automation Technology Challenge" by Madhavan, R.; Marques, L.; Prestes, E.; Maffei, R.; Jorge, V.; Gil, B.; Dogru, S.; Cabrita, G.; Neuland, R.; Dasgupta, P. IEEE-RAS Robotics and Automation Magazine, Sept. 2015.

About IEEE RAS-SIGHT

The IEEE RAS-SIGHT is the first IEEE Society to have a SIGHT! The mission of RAS-SIGHT is the application of robotics and automation technologies for promoting humanitarian causes around the globe, and to leverage existing and emerging technologies for the benefit of humanity and towards increasing the quality of life in underserved, underdeveloped areas in collaboration with existing global communities and organizations. To engage the international community in these causes, RAS-SIGHT has been organizing Challenges and funding small projects centered on humanitarian causes. See <http://www.ieee-ras.org/educational-resources-outreach/humanitarian-efforts> for more details.

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Important Dates

Entry Submissions – Dec. 14, 2015
Acceptance Notifications – Dec. 16, 2015
Challenge@ICRA'16 – May 16 – 17, 2016