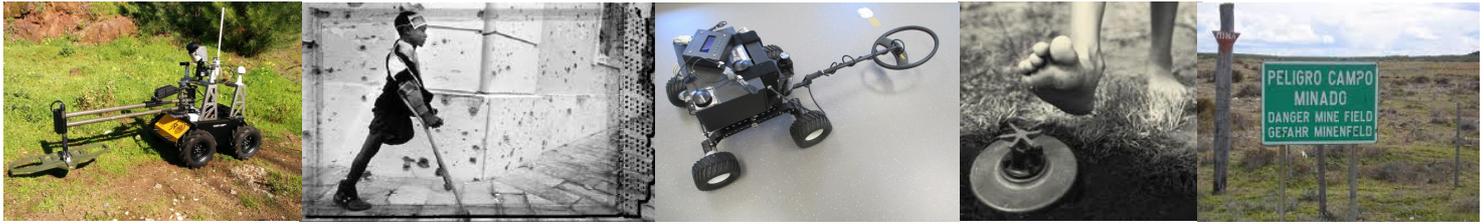


IEEE-RAS Humanitarian Robotics and Automation Technology Challenge

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

May 26th to 28th, 2015 ICRA, Seattle, USA (Coimbra, Portugal remotely)



<http://www.isr.uc.pt/HRATC2015> (accessible from Sept. 25, 2014)

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 second Humanitarian Robotics and Automation Technology Challenge (HRATC) at the 2015 International Conference on Robotics and Automation (ICRA'15).

The 2015 edition of HRATC will focus on promoting the development of new strategies for autonomous landmine detection using a mobile (ground) robot. 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**, i.e., when a metallic object is detected, it should be classified correctly as a landmine or non-landmine; **landmine avoidance**, i.e., while navigating, the robot should not go over landmines. The Challenge will take place in three phases: 1) Simulation Phase, 2) Testing Phase, and 3) Challenge Phase. 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'15. It should be noted that the teams do not need to purchase or build a robot instrumented with sensors or any of the accompanying software. Every team can participate remotely in each of the phases.

How To Participate in the Challenge

All potential participants should submit a paper (2-3 pages maximum) in the standard IEEE format including figures that describes the motivation, previous experiences and research (if any), and the main techniques that will be used during the Challenge. The organizers will then evaluate this paper and an acceptance notification containing further steps would follow. All submissions should be sent to <hrate2015@gmail.com>.

All teams will use the same robot, called 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.

The Challenge will take place remotely in Coimbra, Portugal, and beamed in real time to the Washington State Convention Center in Seattle during ICRA'15. Necessary logistics and travel support will be provided depending on the number of qualifying teams. Further information about the 2014 Challenge is available from <http://www.isr.uc.pt/HRATC2014/>.

About IEEE RAS-SIGHT

The IEEE RAS-SIGHT is the first and only 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, since 2014, RAS-SIGHT is organizing an HRATC in RAS-sponsored conferences. See <http://www.ieee-ras.org/educational-resources-outreach/humanitarian-efforts> for more details.

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Important Dates

Entry Submissions – November 15, 2014
Acceptance Notifications – December 15, 2014
Challenge@ICRA'15 – May 26 – 28' 2015