



IEEE RAS–SIGHT Humanitarian Robotics & Automation Technology Challenge

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

May 30-31, ICRA 2017, Singapore (Porto Alegre, Brazil remotely), <http://www.inf.ufrgs.br/HRATC2017>

Call for Participation

The Anti-Personnel Mine Ban Convention is one of the world's most widely accepted treaties with 162 States Parties agreeing not to use, stockpile, produce or transfer antipersonnel mines. Although this has had profound impact worldwide, there is a non-negligible conflict legacy that still has provoked terrible consequences. 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's Special Interest Group on Humanitarian Technology (RAS–SIGHT) is inviting the academic and non-academic community to participate in the fourth Humanitarian Robotics and Automation Technology Challenge (HRATC) at the 2017 International Conference on Robotics and Automation (ICRA'17).

This fourth HRATC edition will follow the footsteps of previous ones and continue to focus on promoting the development of new strategies for autonomous landmine detection using a mobile (ground) robot. HRATC Challenge has three phases: 1) Simulation Phase, 2) Testing Phase, and 3) Finals Phase. The strategies developed by the participating teams will be 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'17. **All teams will use the same robot 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.**



Organizers

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Organizing Committee

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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/researches (if any). The organizers will then evaluate this paper and an acceptance notification containing further steps would follow. All submissions should be sent to [<hratc2017@gmail.com>](mailto:hratc2017@gmail.com). The Challenge will take place remotely in Porto Alegre, Brazil and beamed in real time to the Sands Expo and Convention Centre, Marina Bay Sands in Singapore during ICRA'17. Necessary logistics and travel support will be provided depending on the number of qualifying teams.

Important Dates

Entry Deadline: Nov. 15, 2016
Acceptance Notifications: Dec. 01, 2016
Simulation Phase: Dec. 15, 2016 - Feb. 15, 2017
Testing Phase: March 01, 2017 - April 01, 2017
Challenge@ICRA'17: May 29-30, 2017

More details on the previous edition can be found at <http://www.isr.uc.pt/HRATC2016> and from the following summary articles published in the IEEE-RAS Robotics & Automation Magazine:

- 2015 Humanitarian Robotics and Automation Technology Challenge, IEEE RAS RAM, Sept. 2015.
- 2016 Humanitarian Robotics and Automation Technology Challenge, IEEE RAS RAM, Sept. 2016.

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, since 2014, RAS-SIGHT has been 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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