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Disaster response robots compete in Brazil

31 July 2014 By Tereza Pultarova



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*"As the dust
 settles after the
 referendum result.*





German autonomous robot Hector rescuing a victim of a simulated earthquake

A German autonomous robot named Hector has won the 2014 RoboCup Rescue League with its ability to explore disaster areas without constant human supervision.

Developed by engineers at the Technical University in Darmstadt, Germany, Hector impressed the judges while showing its skills in various disaster scenarios, including earthquake and tsunami. The robots competing in the championship are assessed against criteria developed by the US National Institute of Standards and Technology (NIST) with both, autonomous and remote-controlled robots competing in the same category.

The team behind Hector focused on developing the robot's autonomy, as they

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...of our future, we consider what happens next. We also look forward to an international summer of sport."



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believe that in real disaster scenarios, radio communication links needed to maintain operation of remote controlled robots could easily break down. Where autonomous robots could continue with their work, those remotely controlled by technicians would be completely lost.

During the competition, which required the robots to locate as many simulated victims of a disaster in an area 10m by 6m in size in 20 minutes, Hector demonstrated the reliability of its autonomous functions and excellent capability to detect the victims and map the environment.

The robots use systems of sensors such as video cameras, infrared sensors, 3D cameras and laser scanners to autonomously carry out the task.

The competition was launched in 2001, inspired by the catastrophic 1995 Kobe earthquake in Japan, which killed more than 6,000 people. Designs developed for the competition proved their validity in real disaster situation as one Japanese robot competing in the RoboCup earlier was successfully deployed in Fukushima after the tragic 2011 earthquake and nuclear meltdown.

Some teams, including this year's winners from team Hector release key components of their research into the open-source domain. The German engineers hope that making their software publicly available could accelerate the development of autonomous rescue robot systems, thus promoting faster real-world deployment to save human lives.

This year's RoboCup was held in Brazil at the end of July.

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