

## ImPACT Tough Robotics Challenge (2018 / 11 / 2)

Topics: Drone application in disaster medicine  
Venue: Robot Test Field (Minamisoma, Japan)

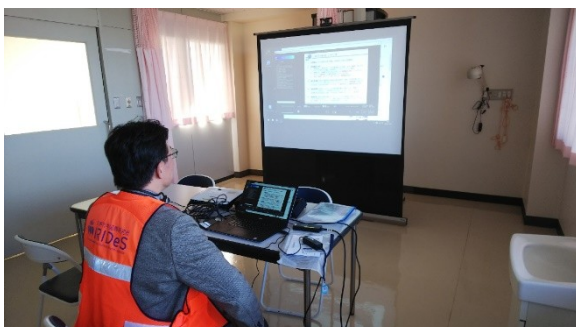
On Nov. 2<sup>nd</sup>, Professor Shinichi Egawa joined the 7<sup>th</sup> Evaluation process of ImPACT Tough Robotics Challenge at the Robot Test Field in Minamisoma, Fukushima, JAPAN. Prof. Egawa collaborated with Minamisoma Municipal General Hospital to examine drone for emergency stabilization of injured person at assumed disaster situation.

ImPACT Tough Robotics Challenge is aiming at developing cutting edge technology of tough robots even in vicious conditions like disaster affected area. Fukushima Prefecture is collaborating and various robots such as cyber-rescue-dog, snake robots, multi-leg robots, construction robots and flying robots. This evaluation process is open for local government, industries and researchers.

Prof. Egawa collaborated with Minamisoma Municipal General Hospital for the evaluation of drones based on a scenario to rescue a person with bleeding from lower leg.

A drone identify the location of voice within the noise of drone wings. Next drone investigate the detail situation of the identified person. The vision of drone is shared by the medical headquarter in Minamisoma Municipal General Hospital and the drone controller. Under the order of medical headquarter, another drone with robotic arm brings the tourniquet to the injured person and bystander. This is an emergency stabilization (stop bleeding) of the patient and increase the possibility of life saving.

The application of drone in disaster medicine is just beginning. We should improve the benefit, as well as understanding the risk and legal restriction of drone technology. Bad weather or irregular surface of landing point may create turbulence and the drone has possibility of falling. Consensus for safety, legal issues and technological development should be developed. We will research on how we can use drone specific information in disaster medicine.



Prof. Egawa in the medical headquarter  
in Minamisoma Municipal General  
Hospital



A drone with robotic arm brings the  
emergency tourniquets in a red bag.

Shinichi Egawa (Disaster Medical Science Division)