

AARM

2016 Nominet Trust 100 Winner

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DRONES MONITOR NUCLEAR RADIATION AROUND KEY SITES

By Imitec

Project URL: <http://www.imitec.co.uk/>

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When an earthquake hit the eastern coast of Japan in 2011, the Fukushima Daiichi nuclear power plant (FDNPP) was severely stricken, causing three of its six reactor cores to melt down and release radioactive material.

100,000 people were forced to evacuate from the area, and because 23 out of the 24 radiation monitoring stations were disabled by the impact, there was no way of knowing which locations were safe without endangering volunteers, helicopter crews and government workers who had to inspect the area manually.

It's a problem that a research team at the University of Bristol has been looking at for years. In 2012, the team, led by radiation detection expert Chris Abbott, spun out to form a startup called ImiTec to work on Advanced Airborne Radiation Mapping (AARM).

AARM is a novel micro-computer-controlled radiation mapping unit that is housed in a drone, and provides capability for remote and autonomous radiation mapping, without endangering humans. The unit can be put into any drone, and can be operated up to 7km away. The production cost is just 1/100th of that of a helicopter, the current method of low-altitude aerial radiation detection.

Initial testing was conducted at a former uranium mining site in Romania, where the survey results compared favourably to those conducted through traditional methods. The proof of concept was then tested in the UK, where the AARM was the first Unmanned Aerial Vehicle (UAV) to fly over Sellafield nuclear facility. It has been trialled in Portugal and Japan since.

The team's goal is to have radiation monitoring systems flying regularly over all nuclear sites, helping conduct regular surveys of radiation emissions. Find out more at www.imatec.co.uk.

Image courtesy of DVIDSHUB

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