

## **NEWS RELEASE — OPENRELIEF FOR IMMEDIATE RELEASE**

**SUMMARY:** *Launch of a new crowd-sourced robot aircraft project, **OpenRelief**, announced at LinuxCon Japan 2012. Project to initially develop a sub-\$1000 autonomous small aircraft to collect and deliver information for disaster relief efforts. First prototype robot aircraft and radiation detector to be shown as part of the presentation.*

### **OpenRelief Project Launched, Announces Low-Cost Disaster-Relief Robot Aircraft Prototype Robotic Reconnaissance Aircraft and Radiation Detector To Be Shown**

6 June 2012 — YOKOHAMA, JAPAN — **OpenRelief**, a new project to provide open, crowd-sourced information solutions for disaster relief will be announced at LinuxCon Japan 2012. The project combines open source software, open hardware and crowd-sourced design to aid in gathering critical information in disaster zones. The first prototype OpenRelief robotic reconnaissance aircraft will be shown as part of the LinuxCon presentation, with an operational demonstration planned for later in the year.

OpenRelief's low-cost intelligent robotic aircraft can fly itself to a disaster area. Its high resolution camera and other sensors will capture images and other sorts of data to relay back to relief workers. On-board image-recognition software will give the drone the ability to recognize situations and objects on the ground such as people, smoke, fire, and roads. It can be customized with other sensor packages, including monitors for radiation levels and weather conditions.

“OpenRelief is an example of how Linux and open innovation enable new solutions to important problems,” said Jim Zemlin, Executive Director of the Linux Foundation. “Linux is providing a platform for OpenRelief to design technology that would have been science fiction a decade ago.”

An initial prototype of the drone has been constructed at a cost of under US\$1000 by a global team, working remotely from Japan, USA, UK, New Zealand and Australia. The prototype, as well as a low-cost radiation detector, will be shown as a part of the presentation, titled “OpenRelief - Using Open Source Software and Open Hardware For Frontline Disaster Relief”. The presentation, by OpenRelief co-founders Shane Coughlan of Kagawa, Japan, and Karl Lattimer of Newcastle-upon-Tyne, UK, is scheduled for 09:30 JST in room 501 at the Pacifico Yokohama.

“OpenRelief's goal is creating open, modular, information solutions for disaster relief,” explained Coughlan. “These solutions can gather critical information for relief workers on the ground, helping to get the right aid the right places at the right time.”

OpenRelief grew out of Coughlan's experiences in the wake of the March 2011 Tohoku earthquake and tsunami. Coughlan, a consultant based in Western Japan, was one of a number of volunteers who drove relief supplies across Japan. Access to the disaster area was extremely difficult and information about conditions was incomplete and dangerous to obtain. Coughlan worked on remapping the disaster area using GPS to give aid agencies a clearer picture of the situation.

At LinuxCon Japan 2011, Coughlan participated in discussion of how open source software can contribute to disaster relief. Comment from the audience that such efforts weren't being applied to the “front lines” inspired him to look into how this might be addressed.

Development of a prototype drone began the following month, and construction commenced in January 2012 under the direction of Karl Lattimer. The prototype is based on off-the-shelf components, and uses “open hardware” computing platforms — a Raspberry Pi system to provide the drone's intelligence and an Arduino for controlling the drone.

The prototype drone incorporates a high-resolution camera, and the on-board software includes image recognition capabilities based on the open source OpenCV library. A sample camera is currently being “trained” in New Zealand, and has been able to successfully recognize smoke, identify roads in an aerial photograph, and “see” other objects, as shown in a short video clip.

“When completed, the robot will be small enough to be launched from anywhere and smart enough to recognize roads, people and smoke,” said Coughlan. “It will use sensors to measure weather and radiation. The information it collects can then easily be shared with disaster management systems like Sahana Eden and Ushahidi.”

OpenRelief is a global effort involving over a dozen professionals in a variety of disciplines across Europe, Australia, New Zealand, Japan, and the United States. The project is now actively seeking more participants and broader support. The project needs people familiar with airframes and drones to help speed up prototype testing and help the project to progress to the production-ready phase. Developers familiar with DSP programming for the BeagleBoard and with OpenCV image recognition are also needed.

The project will be publishing all software developed under open source licenses. Specifications and designs for a second-generation Mark II airframe, currently under development, will also be made freely available.

Sponsors for, or individual financial contributions to, the project will also be welcomed.

More information about OpenRelief is available on the project’s web site, [openrelief.org](http://openrelief.org).

**### ENDS ###**

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