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New emergency finder tracks to within centimetres

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QUEENSLAND utility Ergon Energy is quietly testing technology that could pinpoint the location of people stuck in emergency situations.

When someone trapped in a disaster zone calls triple zero using their 3G-capable smartphone, their position or co-ordinates would be relayed back to the emergency services base to within a centimetre accuracy.

This would eliminate any confusion as to the person's location and could save lives.

For example, during the recent floods in Queensland, some people lost their lives when emergency personnel were unable to correctly identify their location and send help in time.

The trial of the global positioning system, run in conjunction with the state Department of Environment Resource Management, was launched in Toowoomba earlier this year after the project was delayed by the devastating floods and Cyclone Yasi.

Ergon has held preliminary discussions with smartphone makers Nokia and Samsung to investigate the viability of embedding special location-based chips in their devices.

Such smartphones can then relay location information to small portable GPS stations that will be mounted on poles.

During the trial, Ergon will buy 1000 such stations over the course of 12 to 18 months to cover about 97 per cent of Queensland.

These mini-GPS stations will work within the state's Continuously Operating Reference Stations network, which records, distributes and archives the satellite data.

In-car GPS devices such as Navman and Tom Tom normally provide positional accuracy of between 10 metres and 20 metres, but the Ergon system would be able to detect a person within centimetres, says the company's Matthew Coleman.

"We're looking at introducing a positioning framework that gives centimetre access in real time," said Mr Coleman, the capability development manager for the Ergon-led ROAMES project.

ROAMES or Remote Observation Automated Modelling Economic Simulation involves several parties including Google, the state government, Queensland University of Technology, Seabird Aviation and the Co-operative Research Centre for Spatial Information.

"Smartphones would need to have a new chip put into them to allow them to take real-time GPS data, and some of the phone manufacturers are already planning to do that," Mr Coleman said. "And from that, you could pinpoint your position to centimetre accuracy in real time."

Mr Coleman said he could not speak on behalf of mobile phone manufacturers, but Nokia and Samsung both saw GPS functionality as "a future need or future function of a smartphone, and the incremental cost of adding one of these chips is negligible".

He said there were a few ways the real-time GPS service could be offered to consumers, such as bundled together as part of a monthly telco plan.

Telstra and Optus could provide subscriptions to real-time positioning as part of people's mobile plans, or it could be a separate feature that individuals purchased, he said.

Mr Coleman said that governments could choose to mandate -- from a personal safety point of view -- that every mobile phone plan offered real-time positioning services.

However, the accuracy of the state's land database, Cadastral, has to be fine-tuned before the smartphone GPS functionality is tested.

"At the moment there's no point having a GPS that can get you to two centimetres positioning when people are building and maintaining their infrastructure relevant to Cadastral, which could be out by as much as 600 metres," Mr Coleman said.

"It's getting the underlying land database (Cadastral) to the level of accuracy that's required. That then allows us to position our assets to the level of accuracy needed.

"Once you've got those two, it enables you to -- in times of emergency response -- be able to accurately route emergency services to a customer or to an asset."

The Queensland state government-owned electricity supplier said recently that it hoped to save tens of millions of dollars by using a new and powerful data-crunching tool called Google Earth Builder for 3D geo-spatial modelling.