

i10: innovations

Curtin researchers continue to push the boundaries of high-quality research to develop technologies that are relevant to industry and the wider community. The University's commitment to supporting early stage commercialisation of innovative technologies has resulted in an investment in 13 rapidly growing companies, generating revenues in excess of \$10 million per annum.

Here we showcase a selection of new technologies developed at Curtin. These include the 2010 Commercial Innovation award-winners being supported by Curtin's Office of IP Commercialisation. Now in its third year, Curtin's Commercial Innovation Awards acknowledges the best new innovations arising from research by Curtin staff and students.

research.curtin.edu.au/ip



DEEPIVISION 3D

Curtin has established a company, DeepVision3D, to commercialise underwater 3D video cameras developed at Curtin's Centre for Marine Science and Technology (CMST). Designed to overcome the limitations of 2D video, the cameras provide operators of underwater vehicles with an added sense of depth perception when viewing underwater infrastructure.

During 2010 the cameras were deployed in the Gulf of Mexico to assist with repairs to the ruptured Macondo oil well. Canadian oil and gas service company Welaptega Marine, which owns eight of the CMST 3D cameras, was contracted to use two of its 4000m-rated 3D cameras to assess damage to the broken well, prior to the well's successful shutdown.

The 3D camera and related 3D technologies have been developed by Mr Andrew Woods, a WA Energy Research Alliance (WA:ERA) Research Fellow with the CMST. DeepVision3D plans to market two products based on the technology – a marine 3D camera, for subsea inspection use in the oil and gas industry, and a hostile environment 3D camera for use in hostile environments such as underground mines and smelters.

cmst.curtin.edu.au/products/3d.cfm

DATA QUALITY AND INTEGRITY TOOLKIT

A research team at Curtin's Digital Ecosystem Business Intelligence Institute have developed a software tool able to clean up duplications and errors in corporate and government databases.

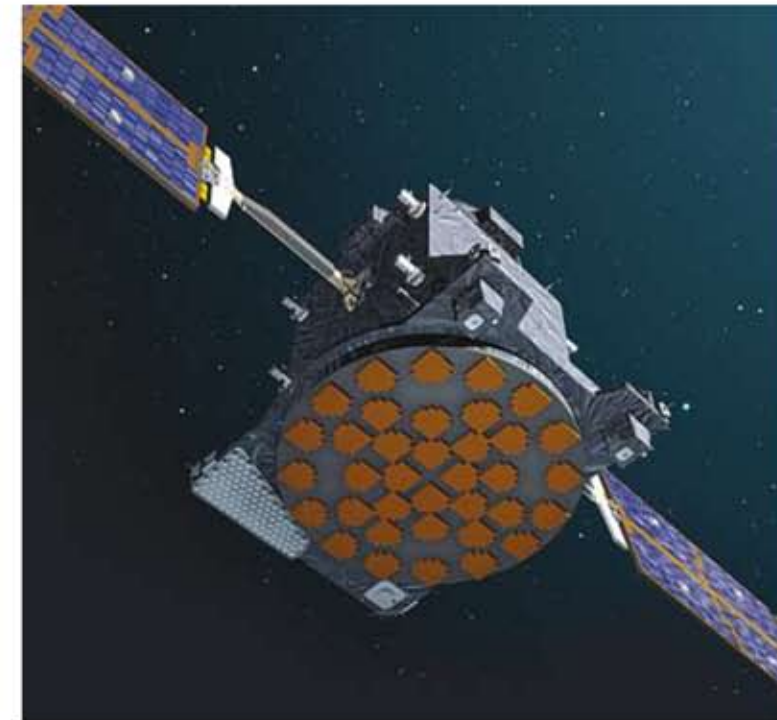
The Data Quality and Integrity Toolkit developed by Dr Fedja Hadzic and Dr Michael Hecker can also detect the source of contamination and prevent future data pollution with business process mining.

Data quality management software tools are typically designed to evaluate and cleanse data to improve the integrity of enterprise information. Areas where data quality is of major concern include crime, national security and the health industry.

Although a range of vendor solutions attempting to address data integrity problems exist, many are ineffective as they tend to ignore the rules and policies of the individual organisation, and do not take into account or attempt to resolve sources of data pollution.

The toolkit addresses these inefficiencies and provides for subject domain specific support. The technology was the winner of the Early Career prize at the Curtin Commercial Innovation Awards 2010.

debi.curtin.edu.au



ARRAY PRECISE POINT POSITIONING SYSTEM

A novel multi-antenna processing algorithm has been developed at Curtin that considerably improves positional accuracy.

More accurate and precise positional information is increasingly vital to a number of industries such as precision agriculture, offshore positioning, land surveying, emergency responses and military services.

While Global Navigation Satellite Systems (GNSS) have extended the range of precision positioning data options available through relative and differential GPS, drawbacks include limited accuracy, long convergence times and receiver integrity issues – which ultimately affect efficiencies.

The Array Precise Point Positioning (A-PPP) system developed by Professor Peter Teunissen and his team from Curtin's Department of Spatial Sciences, counteracts these problems. The A-PPP leverages GNSS data by utilising a multi-antenna solution for positioning.

With the worldwide precision GPS market expected to reach \$7 billion by 2012, Curtin and potential investors are well placed to tap into this growth with this technology. The A-PPP won second prize at the Curtin Commercial Innovation Awards 2010.

gnss.curtin.edu.au