



*DEFENSE: Portable humanitarian mine detection systems*

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*Qinetiq has developed a PHMD instrument using a pulse induction metal detector combined with ground penetrating radar (GPR) array.*

Sundance, the leading supplier and manufacturer of advanced digital signal processing (DSP) and reconfigurable FPGA systems, played an important part in the development of state-of-the-art Portable Humanitarian Mine Detector (PHMD) technology. The PHMD system developed by QinetiQ used a pulse induction metal detector combined with a ground penetrating radar (GPR) array to discriminate between minimum metal antipersonnel mines and small metal clutter.

The PHMD system was trialled in the field as part of a concerted effort to improve the speed and accuracy of mine detection.

System processing, 3D focusing and anomaly detection was carried out using two of Sundance's SMT365 DSP modules tightly coupled to a high density FPGA. The SMT365 features a 600MHz TMS320C6416 Fixed Point DSP with 4800MIPS peak performance and 8 Mbytes of high speed ZBTRAM. The FPGA is a Xilinx Virtex II device and enables on-the-fly pre-processing of data before transfer to the DSP.

*"By combining a range of high performance and break-through technologies the QinetiQ team made a very significant contribution to improving the speed and accuracy of mine detection, and Sundance is proud to have played a part in that."*

*Flemming Christensen, Managing Director, Sundance Multiprocessor Technology, U.K.*

