



## **PRESS RELEASE**

For Immediate Release

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### **Kaon select Pebble Bay Consulting for marine-deployed embedded Linux development**

*High-speed driver for gigabit optical network delivers required functionality for military sensor interface.*

Leamington Spa, UK July 2007 – Pebble Bay, embedded services consultancy, has developed a high-performance Linux driver, user-space library and test software for a network interface card that connects to a proprietary gigabit optical network carrying data from a high speed military sensor.

The network interface card, known as the SNIC, receives data transmitted on the optical network at approximately 90 MB/sec. The data is transferred to memory on the host computer for storage on a local RAID array or transmission to a remote host. The SNIC is implemented using PMC-FPGA03F hardware supplied from VMETRO. This contains a Xilinx FPGA, PCI bridge and fibre-optic transceivers. Challenged with Kaon's customer deadlines, PBCL developed software to interface to the application-specific Xilinx firmware developed by Kaon well within time and against full specification.

PBCL ported the VMETRO supplied Linux software to the 2.6.18 kernel and GCC 4.1 and worked with Kaon to benchmark DMA transfer rates across the PCI bus, and determine interrupt and scheduling latencies. In order to provide the robustness and performance required by the application PBCL made some significant changes to the architecture of the original software and moved critical facilities such as buffer management, DMA scheduling and interrupt control into the new kernel driver.

A new application-specific user-space API library was also developed as part of this engagement, which interfaced with the driver using a number of new IOCTL

calls to control the operation of hardware, obtain SNIC-specific status information, obtain full data buffers and return empty buffers.

This new driver and user-space library architecture provided the performance and robustness expected by Kaon and simplified the work required by the application developers to capture and store the data received from the optical network.

### **About Pebble Bay**

Pebble Bay ([www.pebblebay.com](http://www.pebblebay.com)) is an independent, privately-owned company that specialises in providing embedded software consultancy, training and bespoke development services. The company's core technical focus is on real-time operating systems, device drivers, BSPs and hardware/software interfacing based on both commercial and open-source products.

With over 50 years experience in real-time and embedded systems, the Pebble Bay team have worked for market-leading vendors of embedded tools, real-time operating systems and services including Telelogic, QNX Software Systems and Wind River Systems. The company's model is to work with each customer to a bespoke pre-defined contract that clearly sets out the project deliverables, budget and timescales, enabling clients to have better cost control and clear visibility of the project expectations.

### **About Kaon**

Kaon ([www.kaon.co.uk](http://www.kaon.co.uk)) is an independent hi-technology systems development and consultancy business, providing solutions to the defence and commercial markets in the UK and Internationally. Kaon's core strength is the exploitation and commercialisation of emerging technologies.

Kaon is committed and excels at delivering innovative, yet practical solutions in high-risk technology sectors. They work closely with their clients to help them achieve high-performance resolutions for real world applications.

Kaon takes great pride in their track record in delivering cost effective, mission critical solutions to time, specification and cost.

Kaon is assessed and approved in compliance with ISO 9001:2000 and ISO 9000-3 (TickIT).