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ASIA EDITION

Mr Schwarz: We track samples at subzero degrees

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Melbourne-based bluechiip is a tracking technology company that was listed on the Australia Stock Exchange in June 2011. The company's tracking and retrieval solutions have the capability to redefine the future of biobanking and biorepositories by enabling the efficient management of high valuable biosamples in cryogenic environments, where conventional radio frequency identification (RFID) and barcodes may not be enough.

The firm bluechiip was founded in 2003 by Dr Ronald Zmood and Mr Brett Schwarz to develop battery-less RFID memory and temperature sensing devices that boast of having several unique attributes. The system utilizes a novel method of programming and storing data on the memory device and can be fabricated inexpensively using low-cost micro electro mechanical system (MEMS) technology manufacturing techniques.

In October 2012, bluechiip partnered with a Swiss company Inpeco, which designs and manufactures automation systems for biological sample processing in clinical laboratories, to develop Inpeco products that would integrate bluechiip's technology. Mr Brett Schwarz, CEO, MD and co-founder of bluechiip spoke to BioSpectrum about bluechiip's technology and expansion plans.

Please tell us about bluechiip and how the company is involved in the healthcare and life science sectors?
The firm, which listed on the Australian Securities Exchange last year, has developed a wireless tracking solution for the healthcare and life science, security, defense and manufacturing industries that represents a generational change from current methods such as labels (hand-written and pre-printed), barcodes (linear and 2D) and microelectronic integrated circuit

(IC)-based RFID.

The unique tag is based on MEMS technology and contains no electronics. The tag can either be embedded or manufactured into a storage product, such as vials or bags. Easy identification, along with any associated information from the tag such as temperature can be detected by a reader, which can also sense the temperature of the tagged items. The traditional identification technologies have significant limitations. Whereas a barcode requires a visible tag or line-of-sight optical scan, bluechiip technology does not. Unlike labels, barcodes and RFID, bluechiip technology can sense the temperature of each item on which a tag is attached or embedded in.

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The bluechiip technology has initial applications in the healthcare industry, particularly those businesses that require cryogenic storage facilities (biobanks and biorepositories). The firm offers the only technology that enables accurate and reliable tracking of products including stem cells, cord blood, and other bio-specimens. In addition to functioning in extreme temperatures, the bluechiip tracking solution can survive autoclaving, gamma irradiation sterilization, humidification, centrifuging, cryogenic storage and frosting.

The bluechiip technology has other healthcare applications in pathology, clinical trials and forensics. Several other key markets outside of healthcare include cold-chain logistics and supply chain; security and defence; industrial and manufacturing; and aerospace and aviation.

Please tell us about your recent partnership with Inpeco? What is the role of each company in the partnership?
On October 19, 2012, bluechiip announced that it signed a collaborative co-development agreement deal with Swiss company Inpeco. The agreement allows both parties to collaborate and develop Inpeco products which integrate bluechiip's technology. Based in Lugano, Switzerland, Inpeco designs and manufactures automation systems to improve and simplify biological sample processing in clinical laboratories.

Inpeco offers original equipment manufacturer (OEM) solutions to strategic international partners and acts as a direct supplier, providing end-users (public and private laboratories) with the Inpeco's branded FlexLab automation system.

What made you join hands with Inpeco? What products do you aim to bring to market through this collaboration?
Our company is confident that the technology will be particularly valuable in automated equipments that are used in life sciences, where samples are being stored in ultra cold environments like liquid nitrogen. Current tracking and labeling techniques of labels and barcodes do not operate well in these ultra low temperature environments, especially when frost is prevalent. It is critical to be able to monitor the temperature histories of these valuable samples, which only bluechiip's technology can do. It is too early to say at this point-of-time about the products that we plan to market through the our collaboration with Inpeco.

The year 2012 has been very eventful of the company. What according to you are some of the major highlights of the year?
During August 2012, bluechiip signed a strategic partnership with Gentris Corporation, which involved Gentris joining bluechiip's early adopter program and buying the bluechiip trial system. The strategic partnership with Gentris Corporation will be focused on expanding Gentris' service model to include temperature tracking services. Gentris agreed to join bluechiip's early adopter program (EAP) as well as purchase a bluechiip trial system.

In June 2012, the first sales order for bluechiip's products was from ATCC, following successful trials. The sale enables ATCC to be an early adopter of Bluechiip's technology and to facilitate enhancement of cryogenic sample management and bench research via temperature evaluation and tracking.

During May 2012, the Australian Synchrotron used bluechiip's technology for protein crystallography tracking and automation. The project was enabled via a $50,000 grant under the Victorian State Government's STIUP Voucher Program. Also, in May 2012, the US-based Plexus joined hands to manufacture bluechiip's matchbox reader hardware. The agreement complemented an earlier agreement with Geneva-based STMicroelectronics to manufacture bluechiip's unique tracking tags. Furthermore, from January-to-March 2012, we raised $1.526 million in private placements.

How do you plan to expand your reach in Asia Pacific and beyond? What are the future plans of the company?

We plan to do deals with companies such as Gentris, ATCC, Plexus and Inpeco to expand our reach. The outlook that we have at bluechiip about the future of the industry is that there will be storage of over one billion tissue specimens around the world, accumulating at a rate of more than 100 million specimens per year. Global biobanks market will reach $22.3 billion by 2017, driven by favorable political and scientific environment, enhanced government funding and greater public awareness and support.

Moreover, the US stem cell market is expected to reach around $889 million by 2012. More than one million cord blood units will be stored in over 230 private and public cord blood banks worldwide. The sector will witness over one million IVF stimulations globally per annum with increasing number of IVF cycles and samples being stored. Furthermore, there will be growth of cryopreservation and extensive future applications in healthcare, security, defense and manufacturing industries.