IpAsia

HK inventions out to impress

INTELLECTUAL PROPERTY CREATED IN HONG KONG SHOWCASED AT BIOTECHNOLOGY EVENT IN SAN DIEGO

Hong Kong's innovation strengths in the biotech industry were showcased at the world's largest biotechnology gathering, the BIO International Convention 2014, on June 23-26 in San Diego.

More than 15,000 industry leaders from 70 countries took part in the four-day convention, which featured several international pavilions, including one from Hong Kong.

The convention was an ideal opportunity for Asia IP Exchange (AsiaIPEX), an online trading platform for intellectual property (IP), to promote the more than 25,000 technologies listed as well as to introduce the platform to biotech experts, industry professionals, inventors and companies looking for commercializing and trading opportunities.

The Hong Kong pavilion, which included an AsiaIPEX promotional booth, was co-organized by the Hong Kong Trade Development Council (HKTDC), Hong Kong Science & Technology Parks Corporation and the Hong Kong Biotechnology Organization.

As part of the pavilion, several Hong Kong university technology transfer offices showcased a spectrum of biotech patents. These included the Chinese University of Hong Kong, which had over 90 patents at the event, all of which are available on AsiaIPEX for further licensing opportunities. A number of biotech industry players also signed up as members and started browsing the listed IPs on AsiaIPEX.

The BIO International Convention is just one of many planned promotional events for AsiaIPEX as it seeks to expand its impressive database and 23 international partnerships.

Owned and managed by the HKTDC, AsiaIPEX also helps to promote Hong Kong as an IP hub, drawing attention to the city's business-friendly environment and proximity to the Chinese mainland.

With 13 pavilions representing different economies from the Asia-Pacific region, including the Chinese mainland and Taiwan as well as Hong Kong, the event showcased the region's growth potential.

The convention program included sessions on the potential of emerging markets and a networking reception organized by the Hong Kong pavilion, which featured a lion dance performed by members of San Diego's Chinese community. The aim of the reception was to enable exhibitors to meet potential business partners and to promote Hong Kong's competitive advantages.

On June 24, a networking reception within the Hong Kong pavilion at BIO International Convention introduced Hong Kong's strengths in biotechnology innovation.

A side mission to Los Angeles, Orange County and San Diego also brought the Hong Kong delegates to visit leading life science companies, research institutions and university technology transfer centers for more business exchanges.

Meshing minds to solve Wi-Fi issues

A HONG KONG TEAM HAS DEVELOPED A 'MESH NETWORK' TO FIX UNSTABLE OUTDOOR INTERNET CONNECTIONS


Hong Kong's port is one of the busiest in the world. Dynamic outdoor working environments like container terminals often have problems with Wi-Fi connection, however a 'mesh network' can now provide fast and reliable service.

In a spacious and dynamic outdoor environment, such as a container terminal with moving cranes and containers, stable Wi-Fi connectivity cannot be taken for granted. But Wi-Fi remains a key component of a modern container terminal for logistics management. To tackle this challenge, the Hong Kong University of Science and Technology (HKUST) together with Openplatform, a network software development specialist in Hong Kong, and the Hong Kong R&D Centre for Logistics and Supply Chain Management Enabling Technologies (LSCM R&D Centre) have jointly collaborated to create a patented technology called "mesh network" that resolves this exact problem.

"We developed a mesh network which can dynamically adjust its connectivity to offer 24/7 Wi-Fi service for the crew," said Gary Chan, a professor at HKUST who is the inventor of the technology. "The network addresses the harsh wireless environment where the blind spots keep changing."

The "mesh network" is a multi-hop Wi-Fi network, which features a mesh router that forwards data traffic from different mobile devices to the Internet Access Point (AP) in a hop-by-hop manner. The nodes intelligently decide which hop to relay its data to maximize user bandwidth experience, while eliminating blind spots through dynamic connectivity.

In 2007, Chan, whose research interests at HKUST include Wi-Fi, wireless networks, indoor localization, mobile computing and IT entrepreneurship, began to develop Wi-Fi technology for commercial use. Two years later, after gaining support from Openplatform, which became directly involved in the technology's development, Chan also got

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funding from the LSCM R&D Centre to successfully create the "mesh network".

The technology is now being deployed at Kwai Tsing Container Terminals, supporting the crew's daily work. The mesh network also won the Merit award in the Research and Development category in the 2012 Asia Pacific Information and Communications Technology Awards.

Among the 25,000 tradable intellectual properties listed on AsiaIPEX, the mesh network is one of the examples of the platform's high quality and potential.

For the LSCM R&D Centre, a strategic partnership with AsiaIPEX is beneficial in helping the mesh network — and the center's other technologies — to expand their reach and further their commercialization potential.

The LSCM R&D Centre's Chief Executive Officer Simon Wong said: "By grouping IPs together, we can increase the exposure and increase our chance of attracting attention."

He said it was important to use technology and innovation to further promote Hong Kong's reputation as a logistics hub and new technologies that could help local companies become more efficient and competitive.

"Hong Kong is known for its logistics, supply chain management and end-to-end fulfillment, and there are a lot of goods that pass from the Chinese mainland through Hong Kong," Wong said. "The center's technologies are developed from this expertise that can help both local companies upgrade their services and, of course, can be deployed internationally."


LSCM R&D Centre's CEO Simon Wong said previously he only had his own efforts to promote the company's inventions and know-how, and now feels thrilled to work with Asia IP Exchange operated by the HKTDC to market their innovations.

Although other mesh networks exist in the market, Bill Tang from Openplatform said the mesh network's advantages are its speed and its fast, dynamic and intelligent routing protocol.

"It's very fast," Tang said. "Unlike other mesh networks, it's a mobile mesh network without the need of a central controller. Therefore, it can make timely decisions to adapt to dynamic environments. The router is not mounted on a fixed location but — in the case of the container terminal — on a moving crane."

In addition to the network, Chan also built software to support other real-world functionalities, including a user interface that is easy to use and can support automatic software updates. While the mesh network protocol is the technology core, Chan said that when deploying the technology in real-world situations, it is essential to consider how the technology can be operated and its ease of use.

While the mesh network has been adopted in a logistics environment, Tang pointed out that there are several other industries that could benefit from it. Where land cable installation is cost-prohibitive, a mesh network could provide an effective Wi-Fi solution. Another use is for areas such as heritage buildings where land installation might not be possible due to the building's structure. "If there are historic buildings, for example, where you're not able to use land cables but need to offer Internet connectivity, then a mesh network can provide that solution," Tang said.

When transferring the technology from the research and development center to the container terminal, Chan said he faced several challenges, specifically as they addressed the "harsh and dynamic industrial environment" of the container terminal, a significantly large area that needed stable 24/7 Wi-Fi coverage.

Chan says that platforms such as AsiaIPEX are beneficial for universities and research centers not only because they increase the exposure of the technologies, but also because he believes that IP trading is an ideal path for commercializing the technologies he develops. In addition, funding from the government and support from the LSCM R&D Centre are equally important in driving technology invention and adoption in the industry.

"IP licensing is a win-win situation," Chan said. "The technology can still be developed with a professor in collaboration with the industry, and the licensee has the benefit of the advice from the professor as it is being commercialized. In my opinion, licensing is the most viable option for commercializing the technology."

Logistics industry stays ahead with new innovations

Innovation in logistics and supply chain management is helping Hong Kong maintain its status as a world-class logistics hub.

"Hong Kong needs to continue to be inventive in order to progress as a hub. Our center's research can help companies in Hong Kong upgrade their technologies, services and open up new opportunities," said Simon Wong, chief executive officer of the Hong Kong R&D Centre for Logistics and Supply Chain Management Enabling Technologies (LSCM R&D Centre).

Wong cited several trends in the center's research, including Radio Frequency Identification (RFID) and the Internet of Things, both of which he believes could have a high impact on the future of supply chain productivity.

Popular in the American and European apparel industries for their efficiencies in supply chain response time, RFID helps ensure that a product is genuine and its raw materials are derived from a genuine source.

Two advances in RFID technology are in fact available for licensing on the Asia IP Exchange (AsiaIPEX), the region's largest free online platform for intellectual property trading.

The first is an Authenticable Pearl with RFID Technology, which was developed together with Fukui Shell Nucleus Factory and the LSCM R&D Centre to track individual pearls.

The second RFID technology listed on AsiaIPEX by the LSCM R&D Centre helps companies bypass hurdles for implementing RFID.

The Cheaper and Better RFID Reader Chip makes it easier for small and medium-sized enterprises (SMEs) to adopt RFID technology. With regular handheld readers costing from $1,000 to a few thousand dollars, the new RFID Chip has the potential to be retailed for under $100 — a tenth of the current price.

"The Cheaper and Better RFID Reader Chip performs all the basic functions as other readers that are currently on the market," Wong said. "While this reader is not as powerful as other readers, its low-entry cost makes it ideal for SMEs to adopt this technology."

Of the Authenticable Pearl with RFID Technology, Wong said: "While RFID is now used on merchandise to track trade and for authentication, it has not yet been used on pearls.

"They developed a technology where each pearl can have a unique ID so it can be tracked, traced and authenticated."

The RFID tag includes information such as origin and cultivation period along with a comprehensive authentication system. "We believe this will have a big impact on the whole pearl industry and the entire pearl supply chain — from the farmer and the jeweler to the customer," Wong said.

Check them out on www.asiaipex.com for licensing opportunities.

The Cheaper and Better RFID Reader Chip makes it easier for small and medium enterprises to adopt the radio frequency identification technology.


Together with Fukui Shell Nucleus Factory, the LSCM R&D Centre developed the first-ever Authenticable Pearl with RFID Technology, which is listed on Asia IP Exchange, a free online platform for IP trading.

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