IAITO
Obsessed With Technology

Some people believe that the radio frequency identification (RFID) market may need some more time to mature, but the technology is already making its presence felt, with some renowned retail chains adopting it. IAITO Infotech (P) Ltd is a firm that has made a quantum leap in this field with its innovation called TRAKTAG.

Cholena Deb
'i.t.' Bureau

Radio frequency identification (RFID) is an evolving technology that is used for toll ticketing, and to track goods from needles and missiles to even pets. The RFID system is a replacement for barcodes in a few applications and overcomes issues like line of sight and security, while having the memory to incorporate numerous product details and history. Yet the mass market has followed a slower rate of adoption of RFID technology because the solutions available are not user-friendly and cost competent.

IAITO's TRAKTAG might change that. A product that enhances the performance of the RFID system and is also user-friendly, TRAKTAG doesn't require any extra burden of an application programming interface (API), dynamic-link-library (DLL), or a system integrator. The end user can just plug in to collect the secured data.

Presenting TRAKTAG

The RFID network comprises three major components: tags, readers and middleware. There is an RFID class structure that categorises tags according to their primary functional distinctiveness. The RFID class structure has five classes that are recognised by Auto-ID Centre (an electronic product code standard). Class I contains tags that are passive identity tags and can only be read. Class II tags are basically passive tags but have additional features like memory or encryption. Class III tags are partially active (semi-passive) tags, capable of supporting broadband communications. Class IV tags are active tags and are capable of communicating with other active tags in the same frequency band and with readers. Class V tags are mainly readers, but power Class I, II, and III tags, communicate with Class IV tags and with each other wirelessly. Each successive class within this framework builds upon the previous class, producing a layered structure.

TRAKTAG is based on the Class V standard and involves

a patent-pending technology. According to the firm, this is the world's first product based on this standard, although there are many that are in the R&D stage. The product is basically a reader, and can communicate with a reader and a passive tag. Each TRAKTAG has the capability to read passive population of tags (800-900 MHz) and can communicate with the nearest TRAKTAG too. TRAKTAG works in the ISM (industrial, scientific and medical radio) band of 2.4 GHz with a strong DSP (digital signal processing) algorithm to find its nearest TRAKTAG. Each TRAKTAG has a unique ID, which binds with the tag ID (EPC).

The TRAKTAG reader can work without any host or network connectivity in the range of 800 to 900 metres (in line-of-sight). In the mesh network approach, each TRAKTAG can communicate with EPC-standard passive tags, bind with the reader ID code to find out its nearest reader and set up the network automatically. TRAKTAG has a number of applications and can solve several problems in setting up networks (LAN /WLAN/ Wi- Fi) using RFID technology in railways, metro railways, mines, tunnels, shipyards, fleet yards, oil/petrol yards, docks and in the defence sector.

For example, if we employ an RFID system to track a wagon, we need to lay a Wi-Fi network throughout the railway yard to transmit data from the remotely located reader to the servers. But TRAKTAG has an inbuilt network capability (IEEE 802.15.4 protocol) and can transmit data from TRAKTAG to TRAKTAG (from a distance of 900 metres to 11 miles) and finally to the server. No external network, like the one in the Wi-Fi system, is required and this saves a huge amount of money.

Fact byte

According to Frost and Sullivan, the Indian RFID market in 2006-2007 was worth Rs 585.6 million (US$ 14.9 million) and is likely to grow to Rs 6907.4 million (US$ 176 million) by 2010-2011. It is growing at a CAGR (compound annual growth rate) of 85.5 per cent.

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How it all began

IAITO is a product-based company that has successfully launched several RFID readers. It was officially started in 2006 but the team started working on the idea in 2004. The company has a small office in Kanpur, and has partners in Mumbai, Chennai, Delhi, Pune, Bangalore, USA, Canada, Middle East and Malaysia. Most of the founders and mentors of the company are from IIT Kanpur. The company started with two founders and now has a team comprising 12 R&D engineers dedicated to design, development and service support.

The company's registration was in itself an interesting process. As the founder members were first generation entrepreneurs and hailed from different states, they did not have any permanent address in Kanpur initially. So, they registered their hostel room (in IIT Kanpur) as the address of the company and commenced operations from the room.

When they incubated at the SIDBI Innovation and Incubation Centre (SIIC), they realised that they had registered IIT Kanpur as their company address!

"We are inclined towards thinking out of the box. We respect all the stalwarts who have remarkably changed India's position in the global market with their novel thoughts and unique acts," affirms Anand Shenoy, founder and CEO, IAITO. He says that the team considered the fact that the management of organisations often had to invest a lot of time, manpower and money in building wired networks in different sectors like railways, mines, tunnels and yards. The team therefore strived to develop a product that not just utilises RFID

Anand Shenoy, founder and CEO, IAITO Infotech (P) Ltd

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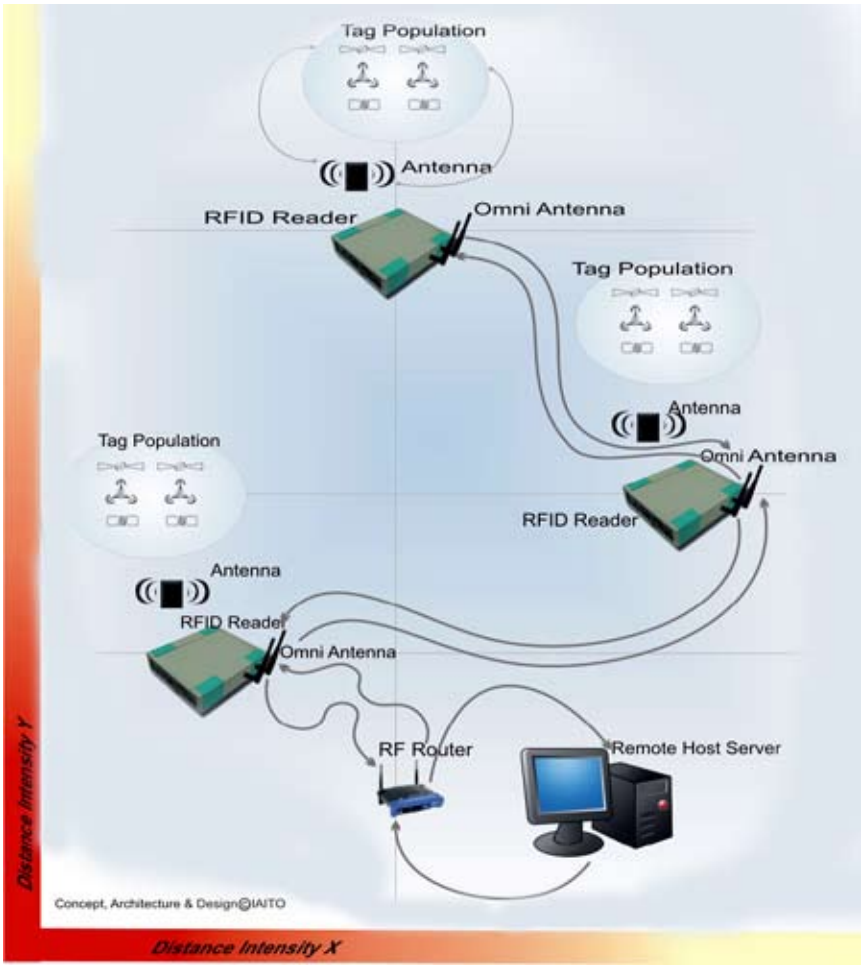

TRAKTAG works without any host or network connectivity in the range of 800 to 900 metres (in line-of-sight)

technology but also makes the product usable and employable.

Giving RFID a leg up

To boost the adoption of RFID technology, IAITO has joined hands with various partners across different sectors. "IAITO has filed for two patents for two different products. IAITO is technology obsessive; we always seek to work on innovative technologies to find some unique and distinctive solutions to problems. We are focused on RFID adoption in the defence and railways sector and are working on several pilot projects for the railways. Our long term R&D plan is to make the best possible indigenous RFID models. In India, we are working closely with private system integration companies like TCS, Wipro, Glodyne, Spanco, NNET, Ennovasys, and Rasilant; as well as several public sector units like BHEL, SAIL and a few government organisations," reveals Shenoy.

He further says, "A large part of our investment is dedicated to R&D. Incubating at IIT Kanpur gives us a huge advantage. It offers a testing facility and aids in prototype finalising. Even technical mentoring received from the experts from IIT Kanpur helps IAITO to act innovatively."

Betting on RFID

Shenoy believes that a lot needs to be done to develop a sustainable market for such products in India. "I agree that the RFID market at the moment is quite small. The reason is the comparison between the barcode and the RFID technology in terms of ROI (return on investment). The cost incurred is more in the latter. People tend to ignore the innumerable benefits that an RFID system provides. But once it catches on, the cost of the tag will fall. Any new technology takes some time to mature."

RFID technology always draws confusing opinions. Some say it has a great future, while others say it is not feasible in India, but Shenoy thinks otherwise, "The confusion is due to lack of knowledge. People fail to comprehend the physics behind the radio frequency technology. It has got immense potential. To really see the magic that RFID can create, we need a skilled team that can bring forth the advantages in a right way. And I don't agree that it is not feasible in India. Several retail sectors like the Future Group, Reliance Retail, ITC and the Birlas have already adopted this technology."

According to Shenoy, IAITO has one of the strongest technical teams working on RFID-based products not only in India, but globally as well. "IAITO has a simple mantra--being technology obsessed will enable you to accelerate and drive the market in pre-eminent ways. We feel very proud to be around at the right time in India. With our entrepreneurial ability, we will be a key part of the country's economy in the future." IT