

RFID News Roundup

Intellex announces new semi-passive tag; Korea Airport Assoc. buying UPM bag-tags; TDK achieves prototype thin-film transistor tags; TI entering e-passport market; Magellan offering licensing for anti-collision IP; Dust Networks unveils WirelessHART-based sensor networking products; VeriChip, Digital Angel partner with Receptors LLC to develop glucose sensor.

Sept. 28, 2007—The following are news announcements made during the week of Sept. 24.

Intellex Announces New Semi-Passive Tag

The latest battery-assisted passive UHF RFID tag from [Intellex](#) performs well despite the presence of metal, water and other RF interference sources, the company reports. The SMT-7100 tag incorporates Intellex's patent-pending "inverted F-plane" antenna design. This, Intellex claims, helps improve the tag's readability around metal by exploiting the tendency of RF signals to reflect off nearby metal objects. The tag features a durable casing designed to protect it against physical impact and damage, and also has an IP67 rating, signifying its protection against damage from moisture, dust and vibration. It can be mounted via adhesives, screws or plastic cable ties. According to Intellex, the tag can be read from up to 50 meters away, and is well-suited for applications where standard passive tags do not provide sufficient read range. These include yard management or tracking assets such as totes or trucks in a large distribution center or warehouse. Intellex says it is now taking orders for the SMT-7100 tag, which operates at 902-928 MHz, as well as the SMT-7100-EU, a version optimized to operate in the 865-868 MHz frequency range used in Europe. The company will provide demonstrations of the tag in its booth at the [EPC Connection 2007](#) conference and exhibition, which will take place in Chicago, Oct. 2-4.

Korea Airports Buying UPM Bag-Tags

Tag maker [UPM Raflatac](#) says it will supply 350,000 UHF EPC Gen 2 passive RFID inlays to [Korea Airports Corp.](#), which manages the nation's airports. The organization will use the tags for airline baggage tracking. UPM Raflatac designed the inlay—known as a Rabbit tag—specifically for baggage-tracking applications. It has a dual dipole antenna that is not highly sensitive to its orientation to an interrogator's signal, thereby increasing the read rates of tags placed at inconsistent angles to reader antennas. This feature is important because baggage-handling equipment does not always place a piece of luggage on a conveyor in such a way as to position the tag directly facing a reader's antenna. Korea Airports hopes the use of RFID for tracking bags will improve its logistics efficiency and reduce the quantity of lost or damaged baggage. Korea's [Asiana Airline](#) has been actively developing RFID-based baggage-tracking programs at the airports it serves since 2005, and is currently planning a pilot project with [San Francisco International Airport](#) (see [San Francisco Airport OKs RFID Bag-Tracking Pilot](#)).

TDK Achieves Prototype Thin-Film Transistor Tags

[TDK](#), a Japanese manufacturer of recording media, electronic materials and components, has partnered with Semiconductor Energy Laboratory Co., a Japanese developer of printed electronics, to create an RFID tag formed with an RFID integrated circuit (IC) and an antenna using thin-film transistor (TFT) technology on a polyethylene terephthalate (PET) flexible substrate. TDK says the group has made both a high frequency (13.56 MHz) prototype, and one designed for use in the ultrahigh-frequency (UHF—roughly 900 MHz) range. The HF and UHF prototypes measure 10 mm square and 35 mm by 53 mm, respectively, and 30 ¼m in

thickness. They can be embedded in paper as thin as 100 ¼m, the company indicates. The groups are now experimenting with potential manufacturing processes for the tags and discussing their practical applications. TDK plans to demonstrate the prototypes at the CEATEC JAPAN 2007 electronics conference, which begins Oct. 2, 2007.

TI Entering E-Passport Market

Texas Instruments has announced plans to enter the electronic-passport market with the introduction of an IC designed for e-passports and other government-issued, RFID-enabled identity documents requiring RF chips able to store large amounts of secure data and support high-speed data transmissions and encoding. The new chip will use Ferroelectric Random Access Memory (FRAM) technology, says V.C. Kumar, manager of TI's government ID program. Most existing e-passport chips employ Electrically Erasable Programmable Read-Only Memory (EEPROM) technology, which Kumar says has a slower encoding speed, requires more voltage to excite and is less reliable than FRAM. In the coming weeks, Kumar says, TI will announce specific product details and partnerships in e-passport manufacturing.

Magellan Offering Licensing for Anti-Collision IP

Magellan Technology, an Australian provider of RFID systems, has launched a reasonable and non-discriminatory (RAND) licensing program granting the right to use intellectual property (IP) covered in Magellan's newly granted U.S. patents (Nos. 7,259,654 and 7,248,145). Licensees that sign up before the end of 2007 will be charged a lower participation fee than those that join after this year. Equivalent patents have already been granted in Europe. The IP is used in anti-collision specifications described in the ISO 18000-3 Mode 2 and ISO 18000-6 standards, and relates to the ability of microchips to retain their state when they lose power while in an interrogating field. This ability is variously referred to as "persistence" (ISO 18000-6) and "TRAM" (ISO 18000-3 Mode 2), Magellan explains, adding that interested parties should contact the company at license@magellan-technology.com for more information.

Dust Networks Unveils WirelessHART-based Sensor Networking Products

Dust Networks has announced a family of wireless sensor networking (WSN) systems designed for industrial environments. The SmartMesh IA-400 family of products complies with the WirelessHART standard, which focuses specifically on the needs of the process industry. The standard defines wireless 2.4 GHz communications and leverages the company's Time Synchronized Mesh Protocol (TSMP) technology. The WirelessHART standard is compatible with the more than 22 million HART-based devices installed in industrial plants worldwide, and was recently ratified by the HART Communication Foundation (HCF), an independent, not-for-profit organization. The new WSN systems include network optimization and intelligent routing algorithms to improve reliability and offer low-power operation. According to Dust Networks, the systems come with application programming interfaces to more easily integrate with industrial automation systems. In addition, they offer more than a decade of battery life, when powered by a pair of AA batteries, and incorporate 128-bit encryption. The systems include the PM2510 embedded network manager, as well as two mote form factors: the DN2510 MoC, integrated in a 12mm by 12mm system-in-package (SiP), and the M2510 RF-certified mote module. Products are expected to be available in the first quarter of 2008.

VeriChip, Digital Angel Partner With Receptors LLC to Develop Glucose Sensor

VeriChip and Digital Angel have teamed with Receptors LLC, a company in the field of proteomics (the study of proteins) and the development of artificial receptors. The partners will work together to develop an RFID-enabled sensor tag that can make it easier for diabetics to monitor their blood-sugar levels, and will develop a prototype glucose sensor to be used in conjunction with an implantable bio-sensing RFID microchip. Last year, Digital Angel—a St. Paul, Minn., maker of RFID tags for identifying and tracking animals and other assets, and a subsidiary of Applied Digital—first announced a goal to develop a glucose-sensing prototype tag by October 2007 (see Digital Angel Developing an Implantable Glucose-Sensing RFID Tag). VeriChip, Digital Angel's sister company and a fellow Applied Digital subsidiary, will manage the partnership project, with the assistance of Digital Angel. According to the

companies, Receptors will be responsible for demonstrating a self-contained glucose-sensing system. VeriChip says it expects to have a functioning prototype within six to 12 months.

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