RFID Chipmakers Align on Industry-Wide Serialization Schema

Alien Technology announced industry alignment on a chip-based serialization schema, termed MCS (Multi-Vendor Chip-Based Serialization), to facilitate serialization for brand-owners using passive RFID tags for item level tagging. MCS is designed to address applications using the Serialized Global Trade Identification (SGTIN-96) for universally identifying products in the supply chain and complies with the guidelines set forth by GS1, the standards body for Electronic Product Code (EPC). Aligned UHF EPC Gen2 RFID tag IC manufacturers include Alien Technology, Impinj and NXP Semiconductors.

Today's enterprises are spread across large worldwide networks that include a web of heterogeneous suppliers. This has increased the challenge of serialization data management across these large and loosely knit organizations. Brand-owners need to attach an RFID tag with a unique serial number, known as the Serialized Global Trade Item Number (SGTIN), to their products. With so many suppliers widely distributed with their own management systems, the coordination of the SGTIN and EPC can be complex and open to errors, waste or, worse still, duplications.

Under GS1 serialization guidelines, each brand-owner is responsible for ensuring unique serialization for their tagged products. Serial number management has clearly been identified as an industry challenge. Until the alignment, each IC vendor has been independently approaching the issue that would require each brand-owner to figure out how to coordinate between the IC suppliers. MCS was designed to address this issue by recommending a simple and flexible guideline for an industry aligned approach, accommodating both chip-based and customized IT based solutions.

MCS relieves the burdens associated with serial number management, even among multiple RFID IC suppliers providing solutions for billions of tags. MCS compliant systems will utilize a self-contained, factory programmed and permanently locked unique serial number embedded within the Tag Identifier (TID) memory of each IC. With an MCS compatible solution, brand-owners simply distribute tag product data as before, leaving it to the printing or encoding device to provide the unique serial number for RFID encoding that is now extracted from the MCS compatible tag. The result is a complete SGTIN-96 without the burden of number management and without worry of a duplicate.

Alien Providing Pre-Encoded, Chip-Based MCS Solutions with Higgs 4 IC

Alien believes MCS provides:

- An industry aligned, chip-based encoding scheme that allows brand-owners that

wish to adopt chip-based serialization the ability to source from any MCS supplier.
- An open convention that is expandable for other future, chip-based serialization suppliers.
- The comfort that the chance of serial number duplication is extraordinarily small (serialization is per EPC code).

Among the MCS suppliers, only Alien is immediately supplying pre-encoded, chip-based MCS solutions via its Higgs 4 UHF RFID IC. Alien is pre-encoding the EPC SGTIN serial number field with MCS Alien header and the serialized portion programmed into the chip at manufacturing time. This minimizes the programming required by brand-owners should they use Higgs-4.

"Alien's MCS solution is unique in that all Higgs-4 ICs are pre-programmed at manufacturing time," said Mike Frieswyk, Alien Technology, Vice President of Sales and Marketing. "Alien's pre-encoding of RFID chips reduces the cost and possibility of introducing duplicates from equipment mishandling at the tag level, while offering brand-owners the flexibility to overwrite this with their own scheme if they wish to do so."

For brand-owners, retailers and service bureaus that wish to manage their own serialization database, they simply overwrite the pre-encoded serialization bits inside the EPC with their own scheme. To facilitate this, all of Alien's UHF RFID ICs are already supplied with an unalterable 64-bit UTID (Unique Tag ID), which is hard programmed during the manufacturing process and identifies the chip vendor, the IC model and includes a unique serial number. The service bureau may use their own custom scheme or copy up to 48 bits from the UTID, and then write these bits into a portion of it to the SGTIN -- eliminating the need to create and maintain their own serialization management structure. While this does not eliminate the need to write the serial number to the tag, it does significantly reduce the risk of duplication.

Both approaches are completely optional and offer certain advantages depending on tagging volumes, print/encoding requirements and data management infrastructure.

Alien believes pre-encoded, chip-based serialization has many advantages including:

- It adds no additional costly steps to the creation and management of the serialized number.
- As the serialization is managed "at the IC source," the risk of serial number duplication at the tag level is massively reduced.

"Alien and fellow RFID IC suppliers have clearly recognized the need for a common approach that would provide further momentum to the adoption of RFID in high-volume applications, such as the retail market," said Justin Patton, RFID Research Center Managing Director, University of Arkansas. "MCS achieves this by providing a common scheme across the major industry players."

Further details of the MSC scheme will be announced during RFID Journal Live 2012, and specific Higgs-4 product information will be announced by Alien around that same time. Alien will be discussing both at booth #614.

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