



Smart-Container Solution

FEATURES:

- » Automated item tracking
- » Data Sent to Back-end Applications for Real-time billing & replenishment
- » Automated Item Traceability / Authentication

PAINS ADDRESSED:

- » Sales & Operations Time Spent on Manual Bar-code Based Processes
- » Product Shrinkage
- » Out-of-Stocks
- » Delayed / Inaccurate Billing on Consigned / Vendor-Managed Inventory

USE CASES:

- » Consigned / Vendor-Managed Inventory
- » Customer-Managed Inventory
- » Corporate Asset Tracking

BENEFITS:

- » Significantly Reduced Time Spent on Manual Bar-code Based Processes
- » Significantly Reduced Product Shrinkage & Out-of-Stocks
- » Accelerated / More Accurate Billing on Consigned / Vendor-Managed Inventory

Solutions Overview

SkyeTek's RFID Smart-Container solution retrofits existing cabinets, shelves, and totes with a network-connected RFID reader sub-system automating item-level tracking and tracing so that the inventory process can occur with greater frequency, accuracy, and cost-efficiency than barcode-based processes.

The Smart-Container solution is comprised of the following:

- Embedded inside of cabinets, shelves, and totes per a specified design are the following:
 - **SkyeModules**, RFID reader modules
 - **SkyePlus** accessories (antennas and multiplexers) to accommodate multiple read zones and specific antenna topologies
 - Off-the-shelf network interface device
- RFID labels placed on items
- RFID tag / badge provisioning provided through SkyeTek Provisioning Services or **SkyeAPI** (ie, for product manufacturers that source their own tags and own RFID printer-encoders)
- **SkyeAPI** for integration with back-end applications
- Optional:
 - **SkyeTek Professional Services** for integration and regulatory testing support
 - RFID badges carried by users

How the Solution Works

Once a cabinet, shelf, or tote has become outfitted with embedded readers, antennas, and network connectivity, the following automated inventory management processes can occur in real-time:

- **Item-Level Tracking & Tracing:** At specified intervals and event occurrences (eg, cabinet door open), the embedded SkyeModules and antennas read tagged items carried by the cabinet, shelf, or tote. IDs of present and removed tagged inventory are cached and/or sent to the network. Optionally, tagged items are audited / authenticated (ie, based on age, origin, recall status, etc) to determine whether they should remain in active inventory or be removed.
- **Automated Billing & Replenishment:** Back-end billing and inventory management applications receive the RFID-generated inventory data from SkyeAPI and invoice for removed items and prepare orders to replenish stock before it runs out.
- **Secure User Access (Optional):** A user presents an RFID badge in front of a specified read point. The SkyeModule reads the badge and applies an authorization policy (previously defined as part of the provisioning process) to authorize user access to the inventory.



About SkyeTek:

SkyeTek transforms traditional RFID into a networking technology enabling goods and assets to participate in a connected world. SkyeTek develops readers that serve as intelligent edge devices and software that binds policies to tagged items. By extending networks to the physical world, our customers increase revenue through their ability to predict demand, prevent counterfeiting, and personalize user interactions.

SkyeTek combines intelligent software with an inexpensive hardware platform to provide a modern RFID security model, distributed policy management engine, and network-ready readers. Enterprises deploy SkyeTek's solutions to deliver a seamless RFID edge network capable of centralized management and real-time response for applications in item tracking, product authentication, access control, and patron management.

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Solution Elements

The Smart-Container RFID solution is comprised of SkyeTek hardware, software, and services as well as best of breed third-party RFID tags / printers and network interfaces. SkyeTek brings them all together into one seamless solution that maximizes return on investment (ROI) and minimizes integration time, cost, and complexity.

Software

SkyeAPI – SkyeTek's application programming interface (API) offering seamless integration between host-side applications and SkyeModules. Supported languages / frameworks are ANSI C and .NET.

SkyeSecurity – Standards-based symmetric and asymmetric encryption / signing where anti-counterfeiting, anti-tampering and privacy are required.

SkyeOS – SkyeTek's embedded RFID reader operating system providing every SkyeModule with superior functionality, reliability, and upgradeability. Made available on a software license basis for customers that use ReaderDNA reference designs.

Hardware

SkyeModules – Embeddable RFID reader modules that lead the industry in cost, space, and power efficiency. Available in three form factors and operation in HF (13.56 MHz) and UHF (860 – 960 MHz).

ReaderDNA – Reference designs of SkyeModules allowing OEMs to integrate the entire module design, or just the analog sub-section, directly onto the main circuit board.

SkyePlus – Accessories such as antennas, multiplexers, and interface boards required for unique geometries and multiple read points.

Developer Kits – Tool kits that contain all the RFID hardware and software required to build a proof of concept.

RFID Tags – SkyeTek works with the industry's leading RFID tag manufacturers such as UPM Raflatac and Avery-Dennison in order to best meet the tagging needs of customer applications.

RFID Printer-Encoders – SkyeTek works with the industry's leading RFID printer-encoder manufacturers, such as Zebra, Avery-Dennison, and Intermec to meet the printing needs of its applications.

Network Interfaces – SkyeTek works with off-the-shelf network connectivity hardware to provide seamless, cost-effective wired and wireless connectivity to the enterprise and internet.

Services

SkyeTek Professional Services – SkyeTek can turn-key the entire integration effort or provide assistance in specific areas. Either way, customers benefit from SkyeTek's industry-leading experience resulting in reduced project cost, risk, and time-to-market. Services include project management, requirements gathering, specification development, hardware selection / integration / customization, regulatory testing / certification, and training.

SkyeTek Provisioning Services – SkyeTek can provision tags / badges on behalf of its customers so that the only task remaining is to affix labels or assign badges. Mapping of SKU numbers to RFID tags or identities / roles to RFID badges and the subsequent printing / encoding process is managed by SkyeTek.

SkyeTek Support – SkyeTek's support technicians have years of experience helping customers troubleshoot problems when the need arises.

Other Offerings from SkyeTek SkyeTek provides a variety of reader technology at both 13.56 MHz (HF) and 860- 960 MHz (UHF). ReaderDNA, a comprehensive reference design, is available for component level integration of the technology including complete design files, BOM, and test fixture. SkyeOS, the embedded software intelligence of the RFID reader, is available to ReaderDNA customers. All SkyeModules are controlled via the SkyeTek Protocol, a powerful but simple communication protocol that grants the user access to all features of an RFID transponder. Further, they have been designed with flexible and modular embedded software that allows one to select only the features desired.

