How RAIN RFID enables smart decisions in the retail market

Retailers are fighting hard to grow and stay profitable in this highly competitive market. It is imperative to be open for forward thinking technologies to reduce cost and increase customer service levels. Sales concepts and supply chain models that have worked for many years are not suitable anymore. Digital technology has continued to change consumer behaviour, providing them with more options to switch from one sales channel to another, seeking for the best deal and the most convenient delivery method.

In this new environment, the role of RFID has grown significantly. The reason is simply because RFID is the only technology that can offer close to 100% accurate stock data.

Accurate stock data enable smart decisions

CEO's and CIO's of big retail chains ask for reliable data related to the following questions:

- Are there items sitting in the back room which are missing on the store shelf?
- Are we overstocking because of „misplaced items"?
- Where do items get lost or stolen?
- How often and how long do customers have to wait at the Point of Sale?
- Do we act to our promise of same day internet delivery?
- How many online orders are fulfilled from the stores?

To be able to take the right decisions and stay ahead of competition, all stock data must be **accurate, objective** and generated **automatically**. In reality however, a typical retail store has no more than 70% stock accuracy, which means that it is absolutely impossible to draw conclusions, prevent out-of-stocks or seriously look at the integration of web shops with the stores by offering services like 'click & collect' or 'buy online, return offline' to customers.
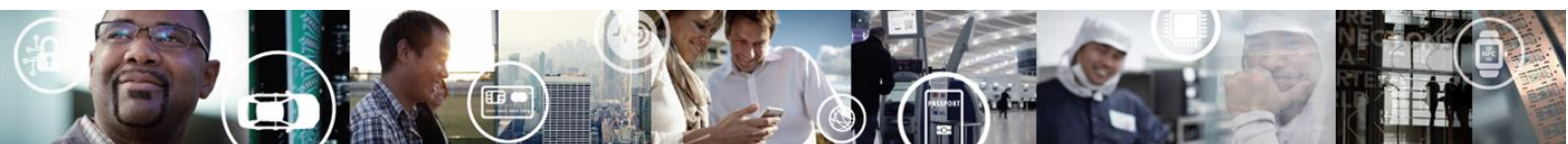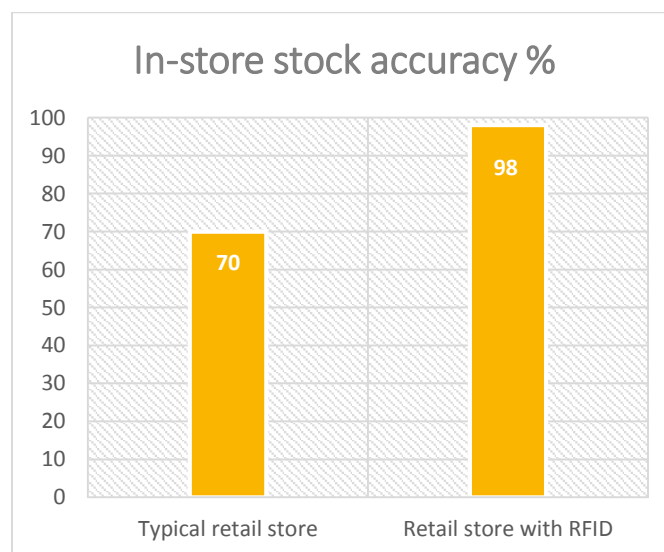
In-store RAIN RFID applications

Item level identification with RFID technology makes it possible to reliably track the movements of individual items and significantly improve the stock accuracy. Typical applications are:

- Goods receiving: instantly check deliveries in the stock room
- Replenishment: track stock room to sales floor transitions
- Sales floor: determine which items you really have on the sales floor
- Point-of-sale: faster (self) check-out and simplified return handling
- Loss prevention: monitor what leaves the store and alarm when items are not paid for

With RFID readers at the key locations in the store – in the stock room, on the sales floor, at the POS and at the store entrance, retailers are now able to track the entire merchandise journey through the store. This enables retailers to know exactly which items have actually been delivered, which items have already been moved to the sales floor, which items need to be replenished and even identify which items were about to leave the store without being paid for.

Nedap and NXP work hand in hand to drive innovation

"Our RFID readers work very well in conjunction with NXP's UCODE ICs. Nedap and NXP have tested UCODE based labels from different vendors together with Nedap RFID readers with excellent results. In the end, it's the retailers who benefit from the aligned chip and system roadmap through well-orchestrated solutions," explains Hilbert Dijkstra, Product Manager at Nedap.

"At NXP we always followed the strategy to do business with partners. The advantage is that each party brings its key strength and products to the table, which at the end creates an optimized solution for the retailer. It also leaves room for choices and doesn't create lock-in scenarios which would just discourage the retailers.

NXP's role is the chip and we are very happy to work with Nedap, whom we know to be very experienced, innovative and committed to performance."states Kurt Bischof Senior Marketing Manager Retail at NXP Semiconductors.
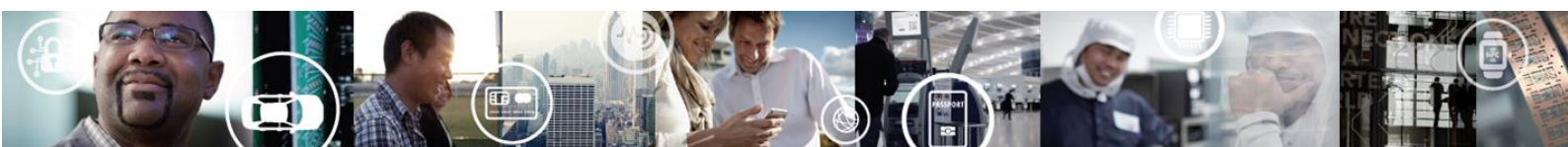
Making RAIN RFID work for retailers

Nedap offers the complete portfolio of high-performance fixed and mobile RFID readers, ensuring a RFID-based stock management solution that is scalable and easy to integrate with 3rd party software systems. Every RFID roll-out asks for a perfect integration and collaboration of the labels, the readers and the software. Here are two examples how Nedap makes sure that RFID works for retail.

Plug-and-play EAS migration path from RF to RAIN RFID

In business, there is always legacy available. In case a retailer wants to start with RF EAS and later migrate to RFID EAS, then it's important to have the system upgradable without the need to remove the installed hardware.

Large-scale international RFID roll-outs have shown that using the RFID label on the merchandise also for loss prevention is increasingly becoming an important part of the business case for RFID. Retailers can benefit from the fact that the merchandise is already RFID-labeled and save the time and money associated with applying another label type for loss prevention purposes.

With Nedap's future proof RFID-migration path, retailers can already make sure that the EAS system is ready for that next step at the lowest possible risk and cost. Nedap's solution can initially be installed with RF detection and simply be upgraded later with a clip-in RFID reader to a hybrid RF/RFID antenna or RFID-only antenna. The RFID upgrade can be done fast and simple, limiting hardware investment costs to an absolute minimum.

Besides providing a future-proof solution, with the hybrid system for both RF and RFID detection, Nedap also offers an elegant, concealed Loss Prevention solution. The !D Top from Nedap contains an RFID reader, which is mounted on the ceiling providing an intelligent Loss Prevention solution that keeps the store entrance wide open.

Optimum read performance

The RFID performance of Nedap's latest generation RFID readers is optimally balanced for the store environment, ensuring an optimal read performance, even in the reality of store by store differences and challenging situations. For this, Nedap uses pre-defined roles for selected use cases with optimum parameter settings. The loss prevention (EAS), stock room to sales floor and goods receiving roles each have their own optimized settings that enhance the read performance in that specific role.

In a loss prevention role for example, the antennas are geared to filter out nearby tagged merchandise and detect the direction of a single tag to make sure an alarm is only triggered when an unpaid item leaves the store. In a stock room role however, the detection is optimized towards reliably reading a high volume of tags (e.g. items in boxes, a cage or on a rolling rail) and accurately register the direction of the merchandise (e.g. moving towards the sales floor). The reliable merchandise tracking enables retailers to increase the in-store stock accuracy.
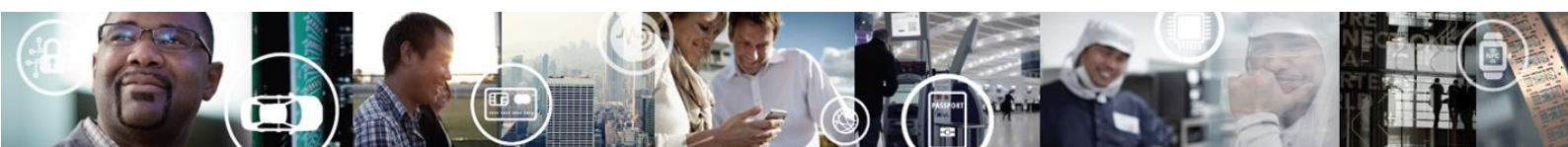
Nedap RFID reader portfolio: designed for retail stores

!D Gate is a modern, open pedestal that is mounted on the floor. The reader has integrated stray tag filtering as well as movement direction detection. When used for loss prevention purposes, the !D Gate can be used with RF and/or RFID detection. Migration from RF to RFID based theft protection is fast, hassle free and executed at the lowest costs as the existing antennas and electronics stay in place. The benefit of upgrading to RFID is that you also know which products are leaving the store.

!D Top is an integrated RFID reader that can easily be mounted on the wall or to the ceiling - almost invisibly. It offers integrated stray tag filtering as well as movement direction detection, hereby building the core of sophisticated area monitoring operations. The !D Top can be used for both tracking stock movements and article surveillance.

!D Hand is a lightweight RFID handheld reader with one button operation, which allows staff to perform cycle counts and program new RFID labels. The !D Hand offers excellent RFID reading performance and is the perfect companion to the dedicated !D Cloud app on existing in-store mobile devices with Bluetooth connectivity.

The **!D POS** de-activator/activator has a small rugged casing that can be mounted under the cash desk. The RFID antenna only reads items that are on top of it, while ignoring tags and labels that are below or next to the antenna.

These forward thinking technologies help retailers to stay on the cutting edge of technology and weather the economic storm in this highly competitive market segment.

About Nedap
Nedap brings 40 years of global experience, market expertise and close cooperation with leading retailers. Everything we do is driven by our mission to make it simple for retailers to always have the right products available. To achieve this, we offer industry-leading solutions for our customers' diverse needs in loss prevention and stock management. www.nedap-retail.com

About NXP
NXP Semiconductors N.V. (NASDAQ: NXPI) creates solutions that enable secure connections for a smarter world. Building on its expertise in high-performance mixed signal electronics, NXP is driving innovation in the areas of connected car, security, portable & wearable, and the Internet of Things. NXP has operations in more than 25 countries, and posted revenue of $5.65 billion in 2014. www.nxp.com