

Can Technology Save Money? RFID versus DFID™ in the Corrugated Environment

By Kenneth Schoening



Corrugated manufacturers have long desired a more cost effective way to monitor the paper/containerboard supply chain throughout the manufacturing process.

In recent years, there have been several attempts to use RFID technology to achieve this, but no one has succeeded for 2 reasons:

1. The inability of RFID technology to transmit signals through the paper roll and,
2. For the Hardware to withstand the rigors of the corrugated environment.

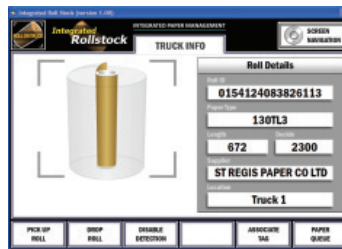
A quote from one company executive says it all: “The cost of the RFID system and tags were absolutely insignificant compared to the savings we were able to achieve. The problem was we couldn’t get continuous reads from the tags and the Hardware kept breaking down...so we scraped the program.”

DFID™, a technology used for over 4 years in Europe, uses a Dual Frequency Identification (DFID) System that sends high powered/ low frequency Dual Signals on Dual Channels through Dual Antennas. The carrier signal then wakes up the chip in the DFID tag and it responds at a very high speed for instantaneous reads. By providing greater signal penetration through roll goods and providing readability at greater distances, DFID™ can easily read rolls with 126” diameter (or 3.2 Meters).

Roll Storage

Roll details are displayed on the Clamp Truck terminal when the driver scans the barcode. This information is then associated with the DFID™ tag for the life of the roll.

When the roll is transferred to the



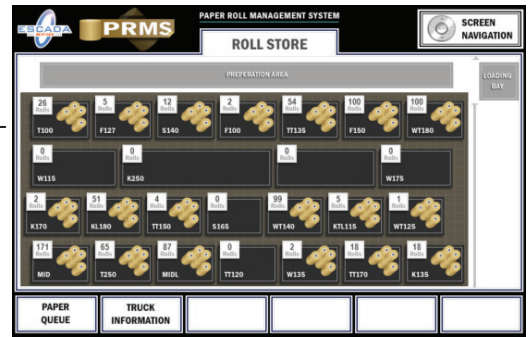
warehouse the system suggest a location and the driver would accept or reject that location, or in manual systems, the driver enters the roll location manually via the touch screen terminal.

Roll Locating



Screen showing roll location detail prompt on Clamp Truck terminal.

The layout of the Warehouse will be displayed on the system. Selecting a specific area will then result in the system zooming into that area to show the details of the rolls. Hence very quick locating of rolls will be enabled.



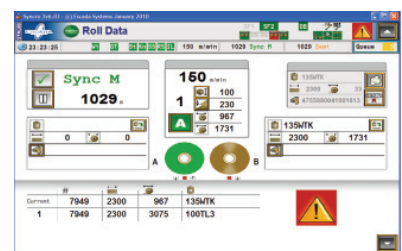
Corrugator Roll Verification & Traceability

When a roll is scanned onto a Rollstand, the paper details are displayed on a touch screen located as shown.

continued on page 30



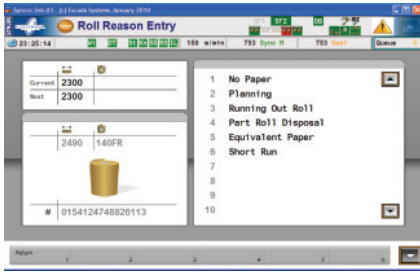
Rollstand operator touch screen.



Operator screen shows running & ready rolls with the respective details. The touch screen can also be used to manually enter roll details if required.

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continued from page 27



The system checks to ensure the correct roll is loaded for the production schedule and prompts the operator to enter the reason code if an error is detected.

Reporting & Traceability

Reporting provides traceability of roll usage and details all upgrades with the reason codes displayed. Analysis of the actual paper consumed compared to what is planned is now possible giving the potential to minimise un-necessary upgrades and mistakes with the loading of incorrect grades.

Standard reports include:

- Upgrade report with cost of upgrades
- Stock levels by paper type, supplier, width, remaining length
- Individual roll history from delivery to full consumption
- Quarantine history
- Aging reports
- Delivery times
- Clamp truck utilization
- Paper yield (Consumed compared to delivered)

With the ability to now read accurately & consistently through large paper rolls, in “Real-Time,” the DFID™ Paper control system has shown to reduce costs over 2% (based on the cost of paper) by utilizing the “Real-Time” information to:

- Automatically track inventory

- Track usage/consumption
 - Verify Yield versus what was delivered
 - Monitor upgrades “Real-Time”
 - Better able to accurately understand what is left on “butt” rolls. This allows operations to better manage “Butt” rolls to operational requirements and eliminate waste.
 - Reduce labor looking for inventory
 - Reduce forklifts
 - Monitors Quarantined material
 - Reduce downtime and overtime caused by searching for paper or shortages.
 - Provides “guaranteed traceability” for Customers Requiring Environmental/FSC/SFI Commitment from Suppliers
- A “White Paper” has shown significant savings using DFID™.
- A video of the DFID™ process being used “Live” in a corrugated facility can be viewed when you visit <http://web29.streamhoster.com/ms1video/a1%20packaging%20revised%20approved.wmv>.
- For more information, or a copy of a DFID™ White Paper, please contact:
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