



# DIAKINISIS AUTOMATES MAJOR DISTRIBUTION CENTER WITH RFID



**Company:** Diakinesis S.A.  
[www.diakinesis.gr](http://www.diakinesis.gr)

**Application:** Material and asset tracking

**Area of Use:** Distribution Center

**Status:** Production

**Tag Supplier:** Alien Technology®

**Reader Supplier:** Alien Technology

**System Integrator:** Business Effectiveness S.A.  
[www.rfid.gr](http://www.rfid.gr)

## Challenge

- Improve traceability of incoming pallet shipments into distribution center
- Minimize shipment errors to customers' stores
- Improve stock-taking process efficiency and minimize merchandise "lost" in distribution center

## Solution

Toolset includes:

- Alien Technology® ALR-8800 readers
- Alien Technology Gen 2 Squiggle™ and M tags
- Integration with Diakinesis ERP and WMS using Alien software development kit

## Benefits

- Achieved near 100 percent pallet traceability of pallets through the distribution center
- Improved correct storage location of pallets by more than 25 percent
- Expedited stock taking by 40 percent
- Eighty percent reduction in shipment errors

*Multinational corporations and Greek firms alike expect the highest quality integrated logistics services from Diakinesis. With more than 25 years in business and a long history of technology leadership, Diakinesis turned to RFID to improve service to customers and gain operating efficiencies for one of its major customers — a global food conglomerate.*

## SOLUTION

Diakinesis rolled out three separate RFID applications within the warehouse and distribution center environment. Floor and shelf-mounted tags communicate to fork-lift mounted antennae to validate pickup and inventory data. Portals are used at the dock door to track the outgoing tagged pallets, and the company's trucks are tagged with RFID labels.

Diakinesis worked with Business Effectiveness, a provider of RFID integration services and supply chain solutions in Greece. "RFID is a tool that led to streamlining business processes at Diakinesis," says Vlasis Tsezos, engineering manager at Business Effectiveness. "RFID acts as a tool to verify the quality of the work throughout the warehouse.

Like with an X-ray machine, you can get information for each business process so you can pinpoint the problems."

Every process within the warehouse and distribution center can be tracked to the pallet. As pallets are received into the distribution center, they are tagged with RFID. The bar code on the incoming pallet is scanned and the information is transferred to the RFID label. From here, the RFID label is used exclusively.

When a pallet is ready to be moved to the warehouse, it is picked up on a fork-lift equipped with an RFID antenna. A portable computer on the forklift identifies the pallet, reads the RFID label and communicates the information to Diakinesis' warehouse management system (WMS). The WMS is used to determine the correct aisle and shelf to store the pallet. Every rack in the distribution center is tagged. Once the operator places the pallet, the RFID reader automatically verifies that the pallet has been placed on the right rack and alerts the operator if something is amiss.



The order picking process follows a similar flow. The WMS instructs the forklift operator to pick up a particular pallet number. Once the operator is at the correct location, the forklift reader verifies the RFID label on the pallet to ensure that the correct pallet is picked. If there's a discrepancy between the WMS and the RFID reader, an alarm will signal to alert the driver.

DIAKINISIS AUTOMATES MAJOR  
**DISTRIBUTION CENTER**  
WITH RFID



Outdoor RFID portals are located at every dock door. As soon as a truck backs up, the dock door portal reads the truck's tag. The system verifies with the ERP system which pallets should be loaded onto the truck. Every pallet is read and ver-

ified as it is loaded. If a pallet is loaded on the wrong truck, the portal's light stack and siren alert the loading dock personnel.

"This process improves traceability," says Vlasis. "With 2,000 pallets leaving every day, the process keeps people from mixing up lot numbers. With RFID on the trucks and at the dock doors, Diakinisis can verify that it's expecting a specific RFID-enabled pallet with specific lot numbers to be loaded onto

a specific truck. Anything else will sound an alarm."

Cross-dock reading has not been an issue. "We built the portals with directional antennas and RF-absorbent materials to avoid cross-reads when the dock doors are very close," he says.

Business Effectiveness designed and built forklift readers using Alien Technology® antennas. "The antenna is placed between the two forks, so as soon as the pallet is picked up, it's read," says Vlasis Tsezos. He notes that the Alien Technology ALR-8800 reader stood up to the challenge where other readers did not. "The ALR-8800 reader is easily configured and can be accessed remotely, so we can make changes centrally without opening each portal," says Vlasis.

Appropriate tag orientation and placement on the pallets were essential to optimize read per-

formance. "We trained the receiving personnel to apply the tags properly," says Vlasis.

Tagging the floors in the stock-picking area was challenging, as the industrial flooring is concrete and contains metal. Business Effectiveness chose Alien Technology tags for their high performance. Alien M tags are embedded in the concrete floor for ground level racks and metal Alien Squiggle™ tags are used for higher shelves. Squiggle tags are used on the pallets and higher level racks and encapsulated Squiggles on the floor in the distribution center.

Business Effectiveness integrated the Alien RFID system with Diakinisis' ERP and WMS systems so information is exchanged in real time. Business Effectiveness found that using the Alien SDK for this integration delivered better performance than adding a layer of middleware.

## RESULTS

Diakinisis has achieved measurable business benefits by automating its distribution center processes with RFID. Pallet traceability is near 100 percent. It has improved the correct placement of pallets in the racks by more than 25 percent, and expedited stock-taking by 40 percent. Overall, the automation has resulted in a process improvement of 20 percent.

Diakinisis has also seen an 80 percent reduction in shipment errors, which eliminates the cost associated with correcting these errors.

"We are quite satisfied with the RFID hardware and software infrastructure provided by Business Effectiveness and products from Alien Technology," says Koromilas.

## NEXT STEPS

Diakinisis views RFID as a tool that will fundamentally transform warehouse operations and streamline the process and is moving forward with plans to roll out RFID with its other customers. "Diakinisis is committed to RFID. They have seen that it is beneficial to operations," says Vlasis.

*Diakinisis used  
RFID to achieve  
near 100 percent  
pallet traceability  
of in-coming  
pallet shipments  
and improve  
correct storage  
location by  
25 percent.*

*Vlasis Tsezos,  
Business Effectiveness,  
Diakinisis S. A.*



Alien Technology  
18220 Butterfield Blvd.  
Morgan Hill, CA 95037  
866-RFID NOW  
www.alientechnology.com