

Diakinisis

Company	Diakinisis
Sector	Distribution
Year	2007
Format	Passive UHF RFID
Application	Storage and shipment
Suppliers	Alien Technology
Integrator	Business Effectiveness
Status	Roll-out
Labeling	Pallet
Country	Greece

With warehouse space totaling over 175,000 square meters, Diakinisis is the largest third-party logistics operator in Greece, offering comprehensive supply chain management services. In summer 2006, Diakinisis opened a new logistics centre (over 25,000 m²) to store and distribute products of one of the world's largest foodstuffs companies. The company paired with Business Effectiveness and Alien Technology to implement an inventory and shipment tracking system allowing it to meet its main target, 100% traceability in reception of pallet shipments, as well as other additional benefits



COMPANY

Founded in Piraeus in 1977, Diakinisis is the largest third-party logistics (3PL), with over 175,000 square meters for storing merchandise at both room temperature and in temperature- and humidity-controlled environments. The company offers a comprehensive supply chain management service, excluding international transport.

Since 2002, the company has been serving over 30,000 destinations in Greece with 500 trucks, handling a total of 60,000 references on a daily basis. Diakinisis currently employs over 400 workers (4% university and post-graduate students; 22% technical engineers; and 74% holders of vocational and other training certificates).

The company has three headquarters in strategic locations: Aspropyrgos, one of the best-located not only for its proximity to the Athens (which accounts for 50% of national purchasing), but also due to the easy access to the country's largest highway

and motorway network (less than 1 km away), a port and a train station (less than 2 km away); Salonika in the Kalochoi region, open in 1989, and, lastly, the Patras facilities, inaugurated in 1999 to service western Greece.

NEEDS

Diakinisis needed to maximize the quality of its operations and customer services while maintaining and extending its leadership in the Greek market. Specifically, the company needed to efficiently and practically track the over 1,300 pallets moved each day. With this need in mind, the company joined forces with Business Effectiveness and Alien Technology to re-engineer its operations using RFID technology.

OBJECTIVES

The project aimed to lock in 100% traceability for reception of pallet shipments and to establish communication between forklifts, pallets, shelves, and trucks, requiring no human intervention.

"We quickly saw that RFID could be used to secure additional benefits as well: by using tags on shelves, we could verify that items are stored in the correct location. This allowed us to automate control of outgoing shipments. We are quite satisfied with the RFID hardware and the software infrastructure provided by Business Effectiveness and with Alien Technology's products," indicated Nikos Koromilas, director of executive operations and administration at Diakinisis.

SOLUTION

Business Effectiveness implemented readers and Alien tags tested on-site for different RFID applications both in Diakinisis' warehouse and in the distribution centre environment.

Tags were designed to work on all pallet shelves, including non-RFID friendly environments, such as metal. Each warehouse shelf location has been identified with an RFID tag.



Forklift extracting a pallet to move it to the dispatch area



RFID-tagged pallets



RFID reader portal on the dock doors

UHF RFID readers and antennas were installed in forklifts for wireless communication with the main server and the warehouse management system (WMS). Loading and unloading docks (dock doors) were equipped with RFID reader portals, comprising Alien Technology ALR-8800 antennas

and designed to withstand both water and abrupt movements.

Alien EPC Gen2 Squiggle tags used in trucks and on shelving had to be placed in special capsules to work in a metallic environment. M tags were also installed on the

warehouse floor for automated guided vehicles (AGVs) outfitted with RFID readers. A number of mobile readers are available for certain complementary applications.

“We believe that Diakinisis’ RFID portal solution is the best Gen2 on the market today, given that the eight portals were designed to resist harsh conditions both in terms of adverse temperatures and in the challenges of operating in a distribution centre environment,” stated Vlasis Tsezos, Business Effectiveness Engineering Manager.

“The Diakinisis project is one of the first large-scale RFID projects installed in a fast moving consumer goods (FMCG) distribution centre environment in Europe. We are very proud to be working with Diakinisis in this unique and highly effective application,” stated Stephen Crocker, director of the Europe, Middle East, and Africa and India sales channel for Alien Technology.

HOW IT WORKS

When goods are received and taken inside the warehouse, pallets are individually identified using RFID tags associated with the pallet content. A variety of information is recorded, such as type of product, amount, batch number, etc.

Pallets taken by forklifts for storage are detected and identified when the forklift reader captures the RFID tag attached to the pallet. Information is then sent to the warehouse management software, which directs the forklift operator to the target location for the pallet. As soon as the pallet is placed in a location, the forklift reader checks the tags of both the location and the pallet, and informs the operator of whether or not the location is correct. If the pallet has been incorrectly placed and this is not immediately rectified, the system will not allow the forklift driver to move other pallets.

During the picking process, the forklift is driven to the position indicated by the WMS and the RFID reader captures the RFID tags for both the pallet and the shelf location. If the pallet is not the one specified by the WMS, the driver is alerted and told how to correct the situation. If the pallet selected is correct, it is taken to the picking area for preparation for shipment.

In the loading zone, complete orders pass through RFID reader portals, which simultaneously read the order RFID tag and the truck tag and check them against the warehouse management software information. The correct loading of the order is verified through visual and audio messages. In the case of an error, the machine will emit a special sound and a red stoplight will be displayed. A green light will appear for a correctly-loaded pallet.

If the company wishes to carry out a complete inventory of all locations in the warehouse, operators only need to drive down each aisle.

BENEFITS

The solution provides enhanced visibility and greater accuracy in shipped items. Specific benefits reported by Diakinisis include: 80% drop in shipment errors and costs of remedying errors; 20% reduction in the time needed to correctly locate a pallet; and a 20% fall in overtime worked.

Furthermore, inventory-taking processes have improved significantly, as they are now much more reliable and efficient and less time-consuming. Employees no longer need to manually scan the bar codes of each pallet and each location. Personnel requirements, errors and time have all been reduced.

In short, the implementation of the RFID system has improved the efficiency of manual processes and traceability, eliminated warehouse location and shipment errors, sped up product locating time, reduced inventory time, cut theft, improved customer service and eliminated excess stocks.

According to Vlasis Tsezos, "Diakinisis' clients include a number of the largest consumer sales companies. Our strategy has set Diakinisis apart from its competitors, with RFID marking that difference."

"We have done away with errors in finding products on the shelves," said Tsezos. "It is now much easier to locate products. When you correctly store products the first time around, it is easier to remove the pallet later."

PROBLEMS AND CHALLENGES

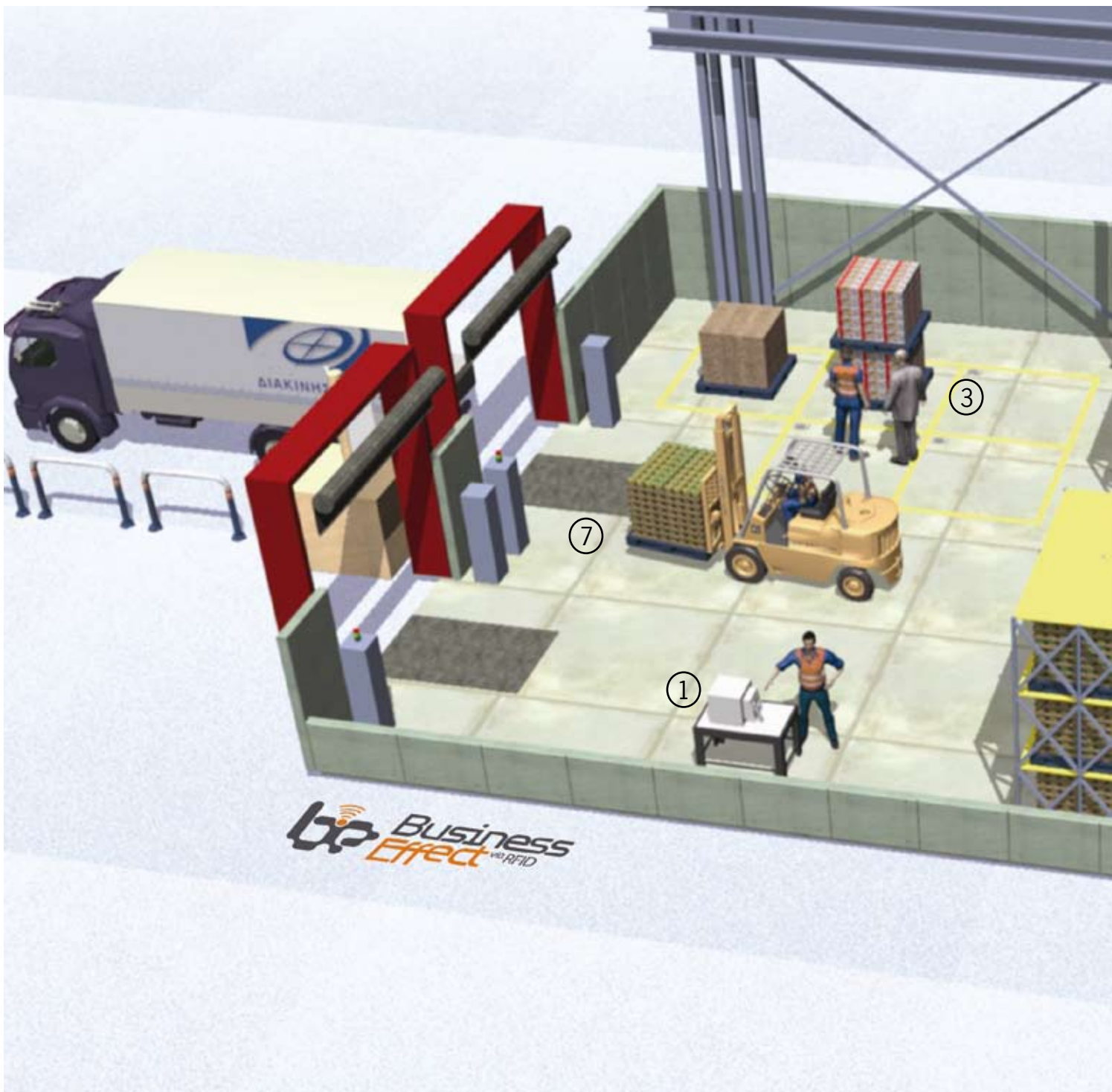
Initially, it was not clear whether or not RFID technology would work correctly in the warehouse's metallic environment. However, thanks to special metal-ready tags, this challenge was overcome. Another issue was whether personnel would be averse to using the new RFID system. However, when employees saw the improvements offered by RFID, they readily welcomed its implementation."

PLANS FOR THE FUTURE

Diakinisis sees RFID technology as a tool to fundamentally transform and revitalize warehouse operations and processes and therefore encourages its customers to implement the technology as well. "Diakinisis is committed to RFID. They have seen that this technology is highly beneficial for all operations," states Vlasis Tsezos.



Forklift with RFID antenna between the forks



1. PRINTING OF TAGS

When customer pallets are received, RFID tags are printed with the information. Employees attach the tags to the pallets to unmistakably identify each item.



2. LOCATION TAG

Each location (slots for pallets) is identified with an RFID tag and the attached bar code.



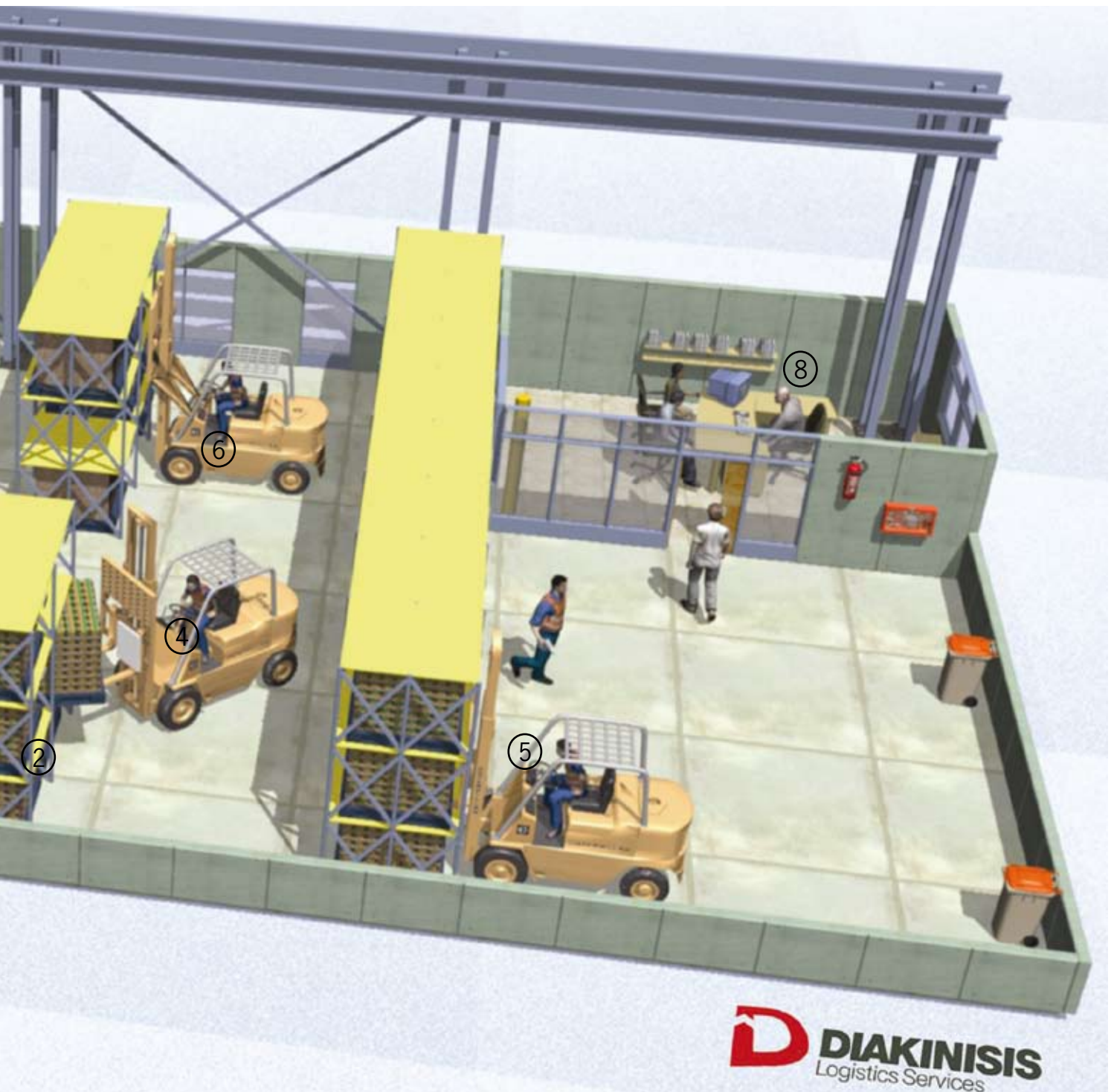
3. FLOOR TAG

Floor pallet storage locations are identified with RFID tags stuck on the floor itself.



4. STORAGE

Employees store pallets in the location specified on the screen. Through an antenna, the RFID reader verifies that the process is correct.



5. PICKING

When an order is being prepared, the forklift antenna verifies that the employee has selected the correct pallet. If not, a forklift device indicates the error.



6. INVENTORIES

All items in the entire warehouse can be quickly counted, by merely driving a forklift through all areas of the warehouse.



7. TRUCK LOADING

During the loading of pallets in trucks, the RFID system verifies that all cargo is correct and notifies of any inaccuracies through visual and audio messages.



8. ACCURATE MANAGEMENT

Company executives can visualize all movements in real time to take any corrective measures necessary.