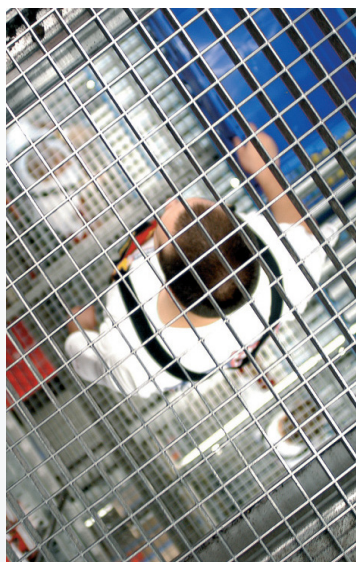




## Wireless system at Bárdi Autó

Hungary's leading automotive spare parts distributor switches to controller-based Wireless system with D-Link Unified Switching solution



### Reasons for choosing D-Link

Extensive support provided by the local D-Link office

Fully automated adaptive system reaching 100% coverage contrary to changing environment

Scalability of the network with the future growth of the company

Interoperability with the barcode scanners (competitor was Motorola, the vendor of the barcode scanners)



### The company

BÁRDI AUTÓ is operating the Central European region's greatest and widest spare parts supplying system. In 2007, we are present in three EU member states with 54 private sales points, operating according to a common logistic structure. BÁRDI AUTÓ has excelled its competitors in the last 10 years with its continuous and dynamic growth. Since 2007 the company is the market leader considering both the number of customers and the value of the sold goods. BÁRDI AUTÓ cooperates with over 200 suppliers. The company employs over 1700 people and delivering spare parts 5-7 times a day to contracted partners with its own 520 vans.

### The challenge

Bárdi Autó has 55 shops in Hungary, 12 of them are regional centres as well. Together with Slovakia and Romania there are 88 sales points. As 95% of the spare parts are sold from stock and due to the growth of the company in 2013 Bárdi Autó invested into a new, 10 000m<sup>2</sup> automated warehouse in Hungary exceeding 60 000 m<sup>2</sup> total warehouse area. 8 spare parts out of 10 are immediately delivered from the warehouses.

This operation requires smooth and up-to-date logistics and IT background. Each shop assistant,

warehouse employee and van driver must know the real-time inventory data. Any changes in the inventory shall be followed in an ERP system. The inventory management is done with 200 industrial class mobile data collection terminals that are wirelessly connect to the servers. For such a solution the most flexible and 100% available network is needed – in an environment that is against the wireless in all measures. The company formerly used a Motorola rfs6000 system with partial coverage. This is why the company started to investigate into the wireless networking developments.

### The solution

The major criteria for the new solution were:

Reaching the coverage close to 100%

Guaranteeing continuous connection for the industrial mobile terminals

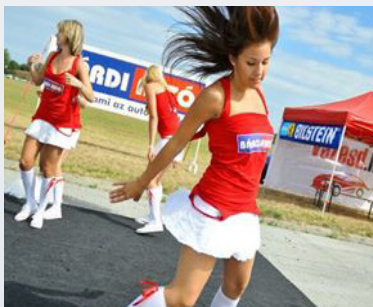
Multiple redundancy in the switch and wireless controller side

Providing network connection for the office area

Homogeneous wired and wireless network – one vendor

*„The L2 Fast Roaming works excellently, one client is roaming across 20-30APs a day without any latency or other technical issues. Together with the distributed tunneling the voice applications (IP phones, software-based SIP extensions) are working flawlessly.”*

Zoltán Kiss,  
IT operations director, Bárdi Autó



**Special characteristics that had to be considered during the implementation:**

5-level metal warehouse structure

Each levels are divided with chipboards and dense metal frames – all against the Wi-Fi signals

Metal and paper in 120cm thick at each shelves

Special hall structure due to the downtown area

Unable to use Directional antennae due to elevators and other obstacles in the corridors

A manually managed Wi-Fi network would have required extreme amount of time and resources at the planning, the implementation and the maintenance too. For such an environment only an adaptive and resilient wireless system was suitable.

Among other vendors Bardi Autó asked a Wi-Fi assessment from D-Link and based on the initial results chose a complete Unified Wireless solution that 100% fulfilled the requirements and proved to be perfect for the tasks:

Unified system that incorporates both the wired and the wireless interface into one single network

Is redundant and resilient: the wireless system has a self-healing mechanism and on the switch side there is multiple redundancy that together minimizes (almost eliminates) the downtime

Provides almost 100% coverage that adapts automatically to the changing environment

100% interoperable with the applied industrial mobile terminals

**The elements of the solution**

11 pcs of **DGS-3120-24PC 24-port xStack Gigabit L2 Stackable Managed PoE Switch** working as PoE+ access switch

2 pcs of **DGS-3620-28TC 24-port xStack Gigabit L3 Stackable Managed Switch** working as Gigabit aggregation switch

6 pcs of **DWS-3160-24TC Gigabit L2+ Unified Managed Switch** – these provide the management of the thin access points in 2 controller cluster (primary / backup) for total redundancy. 143 pcs of **DWL-3600AP Unified Wireless N PoE Access Points** plus 12 pcs of **DWL-6600AP Unified Wireless N Simultaneous Dual-Band PoE Access Points** – thin singleband and dualband 802.11n wireless access points with redundant ability to work as standalone APs in case they can't access the Wireless Switch





**BÁRDI AUTÓ**



Due to the critical environment small Wi-Fi cells were set with L2 Fast Roaming. Voice applications are supported with L2 distributed tunneling.

using the integrated Hotspot functionality of the Wireless controller.

The new Unified system was integrated to the existing Cisco backbone network with full compatibility with the most critical network protocols: LACP, MSTP, VLAN.

The implementation of the new wireless system needed only 1 week while the former wireless network was still in use for the uninterrupted operation.






As an extra service Bárdi Autó provides free Wi-Fi Internet access to its customers and business partners

**Key learnings**

*Currently 100-110 client are using the new system without any interruptions or downtimes.*

*Continuous monitoring and management is guaranteed (SNMP and manual)  
Different areas are set with different profiles (b/g or b/g/n).*

**Products installed in the system:**

 DGS-3120-24PC	24-port xStack Gigabit L2 Stackable Managed PoE Switch working as PoE+ access switch
 DGS-3620-28TC	24-port xStack Gigabit L3 Stackable Managed Switch working as Gigabit aggregation switch
 DWS-3160-24TC	Gigabit L2+ Unified Managed Switch – these provide the management of the thin access points in 2 controller cluster (primary / backup) for total redundancy.
 DWL-3600AP	Unified Wireless N PoE Access Points
 DWL-6600AP	Unified Wireless N Simultaneous Dual-Band PoE Access Points

**Future plans**

*After the successful implementation Bárdi Autó intends to migrate its entire wireless network to the D-Link Unified Wireless solution. As the company is growing from year to year, extension of the network is a continuous need.*