# Volkswagen OTLG Uses Aerohive Solutions to Speed Up Logistical Processes

New Wi-Fi Convinces with Seamless Spelt Management and Innovative Security and Monitoring Features

## Challenges

- No firmware updates available for existing Wi-Fi solution
- Compatible hardware no longer available
- Multiple IT systems requiring interoperability
- Wi-Fi administration
- Management of guest Wi-Fi

## Results

- Stable and reliable Wi-Fi
- Simple management, troubleshooting and debugging
- Comprehensive monitoring and analysis functions
- Zero-touch AP provisioning
- High security standard using PPSK network keys
- High flexibility and scalability

## About Volkswagen OTLG

Volkswagen Original Teile Logistik GmbH & Co. KG (OTLG) with its headquarter in Baunatal belongs to the Volkswagen Group and provides original parts, component parts and services to 3,700

> "What particularly excited us about Aerohive was HiveManager® which manages access points quickly and easily. But we also liked Aerohive's USP, controller-less Wi-Fi operation. This model makes us much more flexible, and we can scale the solution to our needs. Aerohive's tools also make debugging easier, because they take a lot less time to identify and fix Wi-Fi problems."
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> **—André Keller**
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> Project manager for information systems, EF networks, monitoring, AV, proxy, Volkswagen Original Teile Logistik GmbH & Co. KG

service partner companies of the brands Volkswagen, Volkswagen commercial vehicle, Audi, Seat and Škoda in Germany and Denmark. That makes the OTLG to the logistical after sales-backbone of the Volkswagen Group in Geramny and ensures as full-range provider that million customers stay mobile. OTLG employ at 7 sites in Norderstedt, Cologne, Ludwigsburg, Munich, Dieburg, Ludwigsfelde and Baunatal over 2,900 people.

## Backgrounds and Challenges

Volkswagen OTLG has had a controller-based Wi-Fi infrastructure since 2006. It needed Wi-Fi for its logistics processes, which make extensive use of handheld scanners and starter terminals. The company took around two years to equip all of its sites, including its head office, with Wi-Fi. Around ten years after these were implemented, firmware updates were no longer available for the existing controllers, and the Wi-Fi infrastructure's speed and quality no longer reflected the state of the art.

The company therefore decided to invite bids for a new solution and set twenty to thirty criteria with different weightings. These included technology goals such as scalability, analysis tools, a firewall, quality of service functions, access point provisioning, connectivity, and loss-free roaming. Other criteria playing a part in the evaluation included monitoring, security updates, patches, firmware handling, and guest Wi-Fi administration. Three manufacturers' bids were assessed in detail. Aerohive stood out in particular due to its unique selling point: Wi-Fi without a central hardware controller.

## Solution

The company chose a controller-less Wi-Fi solution from Aerohive Networks that met the selection criteria, offering an on-premise version of the HiveManager network management system, which monitors and administers access points. The company began implementing this in late March 2016, with technical support from Aerohive Networks. The project should be complete by the end of the year, with 850 access points (APs), mainly AP121 indoor models and AP1130 (with 802.11ac standard) for outdoor, so that all seven OTLG distribution centers are fully covered. The number of APs varies from one site to another, depending on the size, layout and height of each distribution center and its warehouses. For example there are around 130 at the Cologne site, and 80 in Brandenburg. Wi-Fi coverage is very complex, as products might be moved around the distribution centers from day to day. They may cause interference, for example if they contain heavy metals.

The Wi-Fi is used by over 2,900 employees and some 2,000 devices throughout Germany. Different SSIDs are used for the distribution centers and administration building.

As the LAN itself comes from another manufacturer, the flexibility and interoperability of the Aerohive solutions were vital for Volkswagen OTLG. The Aerohive APs work perfectly with other manufacturers' switches.

## Zero-Touch Provisioning Makes Implementation Easy

One major advantage is auto-provisioning of APs: these are simply unpacked, assembled and named, and all further steps are automated. Zero-touch provisioning saves a great deal of time and effort in implementing the Wi-Fi infrastructure. André Keller, Volkswagen OTLG's project manager for information systems, EF networks, monitoring, AV, proxy, says the Aerohive solution's scalability is a particular advantage. Because it has no central hardware controller, any number of extra APs can be installed for additional devices, with no loss of quality.

## Debugging Function Rapidly Identifies Issues

Another advantage of the new infrastructure is HiveManager's debugging functions, which make life much easier for administrators. Interference from microwaves, Bluetooth and other sources can quickly be identified and remedied if necessary.

## PPSKs Create Secure Guest Wi-Fi

Another important consideration was optimizing IT security. The company previously used a public guest network, so any device within range could connect to it. This was very difficult for the network administrator to manage. Private pre-shared keys (PPSKs) are a security feature allowing guests and other sites' employees to connect to the Wi-Fi easily using a pre-distributed network key. This involves relatively little effort for system administrators.

## Network Stability Is Crucial For All Processes

Volkswagen OTLG's processes are highly dependent on the Wi-Fi's stability and reliability. With Aerohive, the Wi-Fi remains operational if an access point fails. The nearest one picks up the slack and can automatically increase its power to maintain optimum coverage. Employees do not even notice the fault, and business continues as usual.

The company also uses Aerohive bandwidth and applications control to maintain network stability. This limits the bandwidth allocated to each application, and prioritizes certain ones to ensure that the production system of the distribution centers always has enough capacity.

Another important reliability factor is that the Wi-Fi's quality is not affected by maintenance or firmware updates. The controller-less design allows the company to carry out tasks as part of its normal operations, rather than on weekends as it used to.

"We particularly like Aerohive HiveManager because it combines all the functions we need into a single console," says project manager André Keller. "We use it to control everything: access points, the guest W-Fi, debugging, spectrum analysis, and monitoring tools such as heatmapping and chart displays."

## Aerohive: Benefits at a Glance

- Zero-touch positioning allows rapid rolling out of access points
- Controller-less architecture ensures easy scalability and a stable, reliable Wi-Fi
- PPSKs make guest Wi-Fi easier to manage
- Simple remote control of distributed access points via central network management system
- Numerous analysis, debugging and monitoring functions