



## SUCCESS STORY: KEEPING CYBERSECURITY ON TRACK AT BOMBARDIER TRANSPORTATION

With its 60 production and engineering sites in 28 countries, Bombardier Transportation is a global leader in the rail industry. Bombardier covers the full spectrum of rail solutions, ranging from complete trains to sub-systems for goods and passenger traffic – from metros, commuter trains, and light rail vehicles to EMUs and DMUs (Electric/Diesel Multiple Units), locomotives, and high-speed trains. Bombardier also provides specialist technical maintenance and system integration services for its customers.

Globally, more than 100,000 railway vehicles and locomotives produced by the long-established Canadian company are currently in operation. Additionally, Bombardier Transportation's signal box and signaling technology is used across many countries around the world. A great responsibility, to ensure that both people and goods arrive at their destination safely and reliably. To continue achieving this goal in the future while complying with the highest environmental standards, Bombardier Transportation is also developing new, modern railway technologies and relies on sustainable mobility.

### BOMBARDIER

- **AREA OF USE:**  
Authentication of external IT suppliers
- **SOLUTION:**  
KeyIdentity MFA Platform
- **TOKEN**  
Hardware and SMS tokens
- **IMPLEMENTATION:**  
May - June 2016
- **ADVANTAGES:**  
Higher level of security, usability, cost efficiency; flexible use of authentication tokens and integration into existing IT infrastructures; quick and easy implementation

## Additional security for critical infrastructure protection

Due to its prominent position in the transport and traffic industry, a company like Bombardier Transportation holds a special responsibility for maintaining public safety, since malfunctions or manipulation of infrastructure such as signal box or signaling technology could potentially have catastrophic consequences. Thus, the so-called critical infrastructure protection (CIP) requires a higher level of security than other sectors. Maintaining this level of security is ensured by a number of regulations like the European Programme for Critical Infrastructure Protection (EPCIP) in Europe or the NIST Cybersecurity Framework in the USA.

To meet the high security requirements regarding its identity and access management (IAM), Bombardier Transportation decided to implement a state-of-the-art multi-factor authentication solution (MFA) by KeyIdentity, replacing the outdated legacy solution of another security provider. Bombardier Transportation uses KeyIdentity's MFA solution mostly to provide access to various external IT suppliers, who deliver general IT support up to application development services to the company. They use KeyIdentity's MFA solution to log into IT systems and infrastructure of the company, when it is not practical or impossible to provide them with a Bombardier Transportation laptop.

## Multi-factor authentication through hardware and SMS tokens

Users of the innovative KeyIdentity MFA solution apply the hardware and SMS tokens as a second factor for authentication – additionally to the login via user name and password inherent to Bombardier Transportation's IT systems. At the touch of a button on the hardware token, a so-called one-time password (OTP) is created, which appears on the display of the key fob-sized token. The use of hardware tokens adds another layer of security to the process, since attackers are unable to gain access to the second authentication factor through hacking or other forms of system manipulation. Consequently, hardware tokens are especially useful for situations, which require a particularly high level of security. Additionally, SMS tokens are applied by users, who do not carry a hardware device with them and who receive the one-time password on their smartphone.

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„We are very happy with KeyIdentity's cloud-based multi-factor authentication solution. The technology, which is both developed and hosted in Germany, allows us to meet the strict security requirements in our industry, while at the same time relieving our IT department from the unnecessarily complicated management of our old legacy infrastructure. Users were also able to work with the hardware and SMS tokens right way, without any extensive instruction or training.“

**Christian Cloutier**  
Bombardier Transportation

KeyIdentity's open source-based MFA technology is characterized by high security, usability, and flexibility. Via a cloud-based Software-as-a-Service model (SaaS), Bombardier Transportation is able to adjust the number of token users quickly and easily to their current demands, without having to maintain its own, dedicated infrastructure. Additionally, the new MFA solution was installed in only one and a half months in 2016 by a single IT expert. The short implementation period, the low IT manpower requirements, and the SaaS-based model make the KeyIdentity MFA solution not only more efficient, but also more cost-effective than other currently available solutions.

## High user satisfaction

The KeyIdentity MFA platform also allows for the necessary flexibility to achieve this goal: different types of tokens can be added to the solution at any time. This ensures independence from token manufacturers and the ability to customize token deployment according to security requirements and individual access rights. Even the period of time when the token is valid or the number of viable logins can be customized according to current demands. If the IT service provider is, for instance, working on a project at Bombardier Transportation that has a duration of three months, his access can be limited to this time span. In case of the number of logins it is possible to provide the IT support with a maximum of ten one-time passwords per day for authentication.

At the same time, the MFA solution can be integrated into other authentication methods, such as LDAP (Lightweight Directory Access Protocol), AD (Active Directory), as well as other security and monitoring solutions. This allows Bombardier Transportation to achieve an even higher level of security, ensuring that the railway technology leader is ready for the security requirements of the future – via multi-factor authentication as part of a modern identity and access management.

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“Our external service providers use the KeyIdentity MFA solution to log into our company network. We are currently in the process of merging our IT department and our sister company's, Bombardier Aerospace. Consequently, we are evaluating the extent to which are going to expand the use of the MFA solution at a company-wide level as part of this process. We also think about introducing the use of software tokens via mobile apps on the smartphones of external service providers.”

**Christian Cloutier**  
Bombardier Transportation

## KeyIdentity

KeyIdentity is a leading provider of highly scalable and easy to use, open source-based identity and access management solutions (IAM) for managing and securing digital identities in cloud and network environments. KeyIdentity focuses on transaction security, identity management and strong authentication via multi-factor authentication (MFA). KeyIdentity's IAM solutions are developed and made available from start to finish in Germany and meet the strict security requirements stipulated by German law. Additionally, KeyIdentity's open source approach excludes the possibility of cryptographic backdoors. KeyIdentity, based in Weiterstadt, Germany, has successfully provided "Security made in Germany" since 2002. [www.keyidentity.com](http://www.keyidentity.com)