ENX – THE AUTOMOTIVE INDUSTRY EXTRANET

1,500 companies in over 30 countries communicate securely via a globally available industry network

ENX is the leading standard for secure and reliable communication between manufacturers, suppliers and other partners in the automotive industry. This communications service was developed and is managed by the ENX Association and the number of users has been growing steadily since it was established in 2000. More than 1,400 companies in over 30 countries rely on ENX, meaning just about all European car manufacturers, large suppliers and SMEs involved in the automotive industry. Nowadays, ENX supports applications in areas where security is essential, for example engineering, finance, logistics and the management of just-in-time supply chains. Certified service providers (CSP) that have been certified by the ENX Association offer access to the network worldwide.
T-Systems has been a certified ENX provider since 2000. Alongside this role, the ENX Association uses T-Systems' expertise and services when developing and providing central infrastructure services. These include the ENX public key infrastructure (PKI) and the ENX points of interconnection (POI), the central interchange points where the ENX networks of all ENX CSPs are connected to each other.

AT A GLANCE

- Operating the central ENX infrastructure components PKI and POIs
- Coupling all ENX networks of the ENX CSPs via POIs
- Managing the security certificates for authenticating the ENX connections of all customers through the ENX PKI
- Implementing the high ENX security and quality standards in accordance with the requirements of the automotive industry

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THE REFERENCE IN DETAIL

THE CUSTOMER. The ENX Association, an association of automobile manufacturers, suppliers, and associations, forms the legal and organizational umbrella of the ENX industry network and is responsible among other things for the ENX standard and its further development, and monitors its compliance. All connections have three inalienable properties: each user can communicate with all other users (by mutual agreement) via a single connection, each connection has an ENX-CA certificate, and each of these connections has the same security features regardless of bandwidth, availability characteristics and costs. As of March 2014, more than 1,400 companies in over 30 countries are using the globally available ENX to exchange data with each other in a highly efficient, confidential and cost-effective manner.

THE TASK. The value creation partners within the automotive industry cooperate with each other on an international level. Suppliers generally serve a number of vehicle manufacturers and each manufacturer works with numerous partners spread throughout the world. Development, production and supply processes are closely linked across companies. Precise coordination and the seamless exchanging of data are among the most important requirements when it comes to the entire industry working together successfully and according to schedule. Members of the ENX Association established the group in 2000 in order to improve communications between all global partners with a shared solution. Their sector network should work like the Internet but with better performance and protection. The IP network connections should satisfy the same quality and security requirements as those of closed company networks and at the same time allow straightforward, economical communication with large numbers of external partners.

THE SOLUTION. The ENX sector network is made up of a number of ENX subnetworks operated by CSPs – the CSPs provide their customers, the ENX users, with an ENX connection to the relevant subnetwork. Working on behalf of the ENX Association, T-Systems connects these subnetworks to central interchange points (points of interconnection) – highly available managed LANs. The Telekom subsidiary operates these POIs redundantly at three international data center sites in the Rhine-Main region, in the Paris metropolitan area and on the east coast of America. It thus ensures highly secure communications for all connected users. Each CSP must link its subnetwork to at least two of these switch sites. An ENX connection between two users comprises an individual IPsec tunnel, a robust IP VPN standard, which is used for the integrity, authentication and confidentiality of IP data traffic. The encrypted data are transmitted "E2E", i.e. securely from end customer router to end customer router. The confidential exchanging of data between users is based on a public key infrastructure which T-Systems has operated ever since the ENX network was developed for the ENX Association. As a trust center (certification authority, CA) accredited by the Federal Network Agency, T-Systems provides a digital certificate for every router in the network group. This certificate authenticates an ENX router (end point of an ENX connection) for its communication partner. The certificate thus serves to ensure the genuineness (authenticity) of communication partners. At the start of each communication, the ENX routers involved check the validity of the certificates used on the basis of an ENX PKI blacklist. This ensures that the relevant communication partners are still ENX users and meet the strict security requirements of the network.

BENEFITS FOR THE CUSTOMER. The ENX network provides the automotive industry with a basis for handling B2B business processes efficiently in the complex value creation chains between companies, partners and suppliers. Via the network, they can not only exchange sensitive product development data in the areas of CAD and PDM. Companies are increasingly using ENX for multimedia and collaboration applications too. These include video conferences involving engineers who are subject to secrecy requirements. The ENX Association relies on the expertise and services of the Telekom subsidiary in order to operate the central infrastructure components. These components allow all ENX providers competing against other to protect their customers against knowledge drain, industrial espionage and sabotage.
The solution is extremely economical too. Each company involved is able to network securely with hundreds of partners spread across the ENX subnetworks of the CSPs via a single physical connection. Instead of setting up costly individual connections to each business partner, they can use ENX each time that they exchange data on an IP basis with all value creation partners. For many suppliers, the connection to the ENX network is a must in order to be able to enter into a business relationship with an automotive manufacturer. The solution's guaranteed security, availability and service quality have made ENX the de facto standard within the sector.

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