TOSIBOX®

TOSIBOX® technology enables new digital services for global boiler and power plant supplier

KPA Unicon collects real-time data thanks to reliable and secure TOSIBOX® solution

KPA Unicon is a Finnish family company that has since 1990 been an advocate and key facilitator of the world's transition to clean, renewable energy.

KPA Unicon creates and implements clean-energy solutions, renews existing energy-production systems with cleaner technologies, interacts by empowering energy producers with innovative digital tools, and leads the way with advocacy and initiatives that create better value for its partners.

KPA Unicon's headquarters are located in Pieksämäki, Finland, and international subsidiaries in France, Russia, Croatia and Chile. The company employs about 250 energy industry professionals.

Challenge

The globally operating advocate and key facilitator of the world's transition to clean, renewable energy, KPA Unicon builds and supplies boiler and power plants. KPA Unicon is leading the way with innovative solutions that provide a clear path to energy independence for a variety of industries, local governments, and key energy producers.

The company's control room is located in Finland, where they centrally monitor the performance of all boiler and power plants geographically dispersed in, for example, France, Sweden, Finland, Croatia and Chile. To maintain a high level of security, the closed plant environments could only be serviced on site. As KPA Unicon's philosophy is to encourage and facilitate smarter, ecologically minded clean energy production practices, the company wanted to ensure environmental sustainability also with remote services. However, VPN connections were slow and always involved a third party (operator). Providing digital services all the way from Finland would be cumbersome, and building a traditional VPN all the way from around the world would in no way be practical.

To add to the challenge, KPA Unicon's boiler and power plants utilize some equipment that does not support Layer 3. The company needed to find a solution that offered a Layer 2 option.

Another important requirement for the connectivity solution was reliability. KPA Unicon wanted to collect real-time data from its systems with an accuracy of ten milliseconds. The company was looking for a reliable connectivity solution.

Solution

KPA Unicon has solved its connectivity problems by adopting TOSIBOX® IoT connectivity technology, that has also enabled the creation of new digital services for the company. TOSIBOX® has created a simple way to build secure remote connections, collect data and manage networks. The solution is the same anywhere in the world, and it works with all types of devices regardless of operators and type of internet connection.

Each KPA Unicon plant environment was secured by a TOSIBOX® Lock, an industrial router with firewall, which is the only access point to remotely connect to the plant. TOSIBOX® Virtual Central Lock was then set up at the company's data center in Finland. TOSIBOX® Virtual Central Lock is the hub for KPA Unicon's plant network and the platform for centralized access management.

KPA Unicon's employees can access the Locks with physical TOSIBOX® Keys. Subcontractors or clients can also gain access to the plants with Keys whose access groups are defined from the Virtual Central Lock. Limiting access, adding new users and objects is done simply by drag and drop.

TOSIBOX® remote connections support two different connection types: Layer 2 (bridged) and Layer 3 (routed). Layer 2, also known as site-to-site connection, can be thought of as having a very long ethernet cable to the remote network. TOSIBOX® stands out thanks to its Layer 2 option, making it compatible with all industrial automation brands and providers in the market.

Thanks to TOSIBOX®, KPA Unicon can remotely monitor its plants and serve customers around the world. Adopting TOSIBOX® has simplified the network structure, which also enhances the network's security. TOSIBOX® Virtual Central Lock's centralized access management and audit trail guarantee knowledge of who has access to the network. All users are identified, and there are no shared collective passwords in use.

The company is now also able to collect real-time data from its plants for monitoring and product development purposes. AI solutions for the data can be implemented centrally in a cloud or a data center. The expansion of digitalization has enabled KPA Unicon to offer remote services such as remote monitoring and plant communications via remote access. Moreover, KPA Unicon is now able to securely duplicate the data from its plants in real time in their cloud service. Currently, over 1.2 million lines are stored every hour, which is almost 29 million lines per day. The real-time availability of data outside the facility enables completely new service concepts, such as tracking plants' key performance figures on mobile devices, or the real-time monitoring of the devices' life cycle and predictive maintenance. As data can be collected from most plants, it can be combined to gain great synergies in prediction compared with data from just one plant.

KPA Unicon has been pleased with the versatile TOSIBOX® solution and everything it enables. Tosibox technical support earns many thanks for its excellent service when needed.

"There are a number of opportunities that might theoretically be feasible, but not very realistic from a technical or a business functional perspective. Thanks to TOSIBOX® technology, these opportunities have become possible for us in practice."

Joni Räsänen,
Product Manager,
KPA Unicon Group Oy

Benefits

- Secure remote access from anywhere in the world
- Support for Layer 2 option.
- Reliable connectivity for real-time data collection
- Centralized access management and audit trail
- Secure IoT connectivity even enables new business opportunities to build new digital services.

TOSIBOX®

ENERGY
INDUSTRIAL AUTOMATION & MACHINERY

Installation diagram

TOSIBOX® Keys

TOSIBOX®
Virtual Central Lock

Control room

Data center

TOSIBOX®
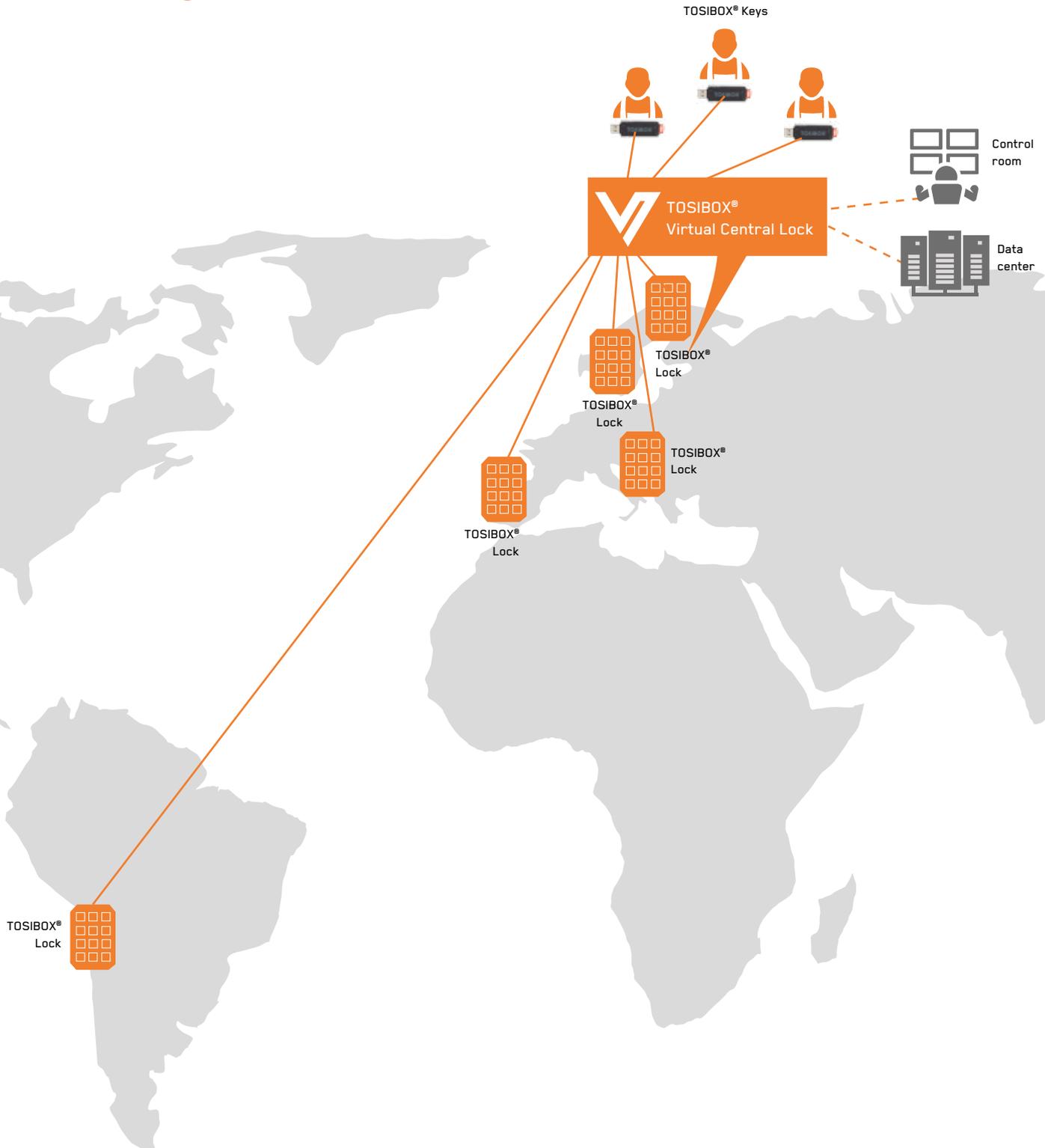Lock

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