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Industrial routers from Helmholz make mobile cranes even better

Worldwide remote maintenance service included

More than 900 mobile revolving tower cranes of the Dutch manufacturer Spierings are in use worldwide in the meantime – too many to be able to maintain each and every one of them with only on-site maintenance. For this reason the company relies on mobile industrial routers from Helmholz. These enable secure remote access to the crane systems via a virtual server.

With an apparently simple idea, Spierings Mobile Cranes B.V. has been conquering the international market for more than 30 years from Oss in the Netherlands: The mobile revolving tower cranes of the manufacturer arrive at the deployment location on their own wheels. Complicated transport by special vehicle is thus dispensed with. Sustained success shows that the owner-operated company, currently with 300 employers, has thus hit the mark with regard to its target group: Spierings has been the market leader in this segment from the start. Since its founding in 1987, more than 900 mobile cranes have been delivered and are being used in Europe, Asia, and Africa. Especially recent years have been characterized by enormous growth: While annual production in 2016 still totaled 50 cranes, this number reached 73 in the following year and will significantly exceed 100 in 2018.

However, increasing sales also posed new challenges: The Dutch service technicians were often forced to embark on long journeys, only to determine on location that some error messages turned out to be marginal disruptions. Already several years ago, the Spierings experts therefore commenced with the search for a remote system that was both secure and practicable, in order to be able to, for example, query the status of the systems or be able to load a new version of the software onto the crane.

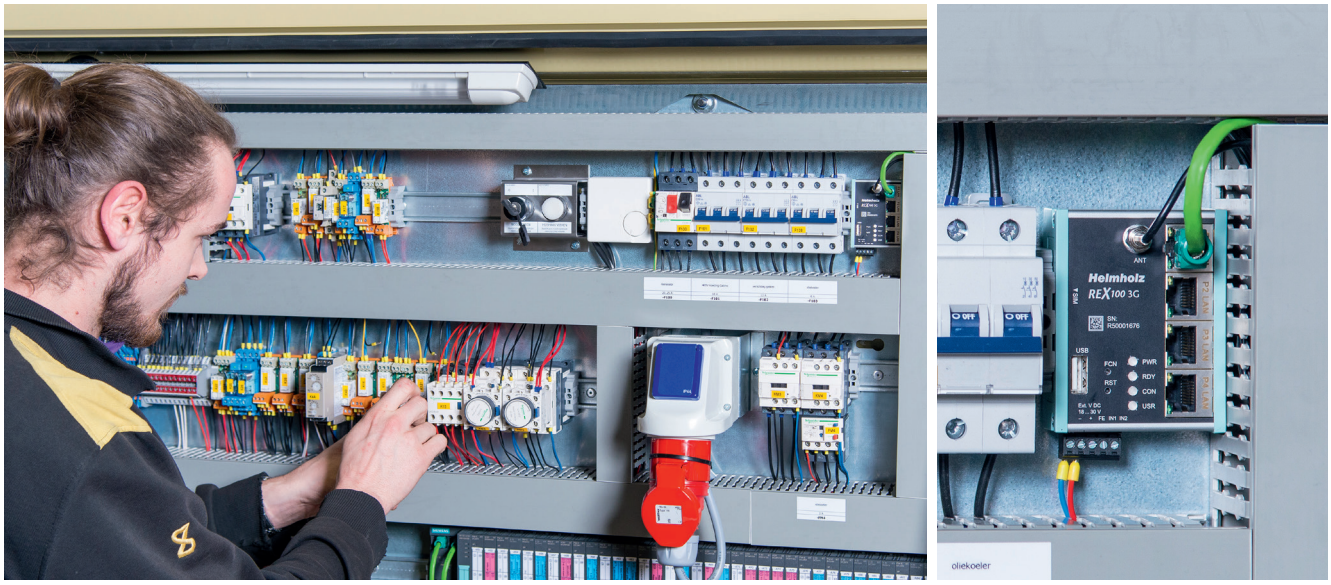
The decision was eventually reached in favor of a gateway solution with industrial routers from Helmholz.

Not only due to the high-performance technology, as service and development engineer Dennis van Es from Spierings makes clear: “We like people that can think outside the box. And Helmholz Benelux was one of the few manufacturers that always seemed to be open for a dialog with Spierings and provided great support.”

Mobile industrial router REX 100 3G and virtual server

Specifically, Spierings deploys the model REX 100 3G. The component, which is not even the size of the palm of a hand, sits, mounted on a DIN rail, in the control cabinet of the crane vehicle and communicates with 3G mobile communication standard by way of an integrated SIM card. In a compact form, the REX 100 3G nonetheless offers all core functions of the REX industrial router family from Helmholz and can be deployed very flexibly. This means that a secure, precise, and simple online remote maintenance solution is available, especially for mobile systems and machines with less complex requirements.

As with all REX models, data transmission for this mobile communication variant also generally takes place encoded via a VPN tunnel. The foundation for this is provided by the secure OpenVPN protocol.



REX 100 in the control cabinet of the crane

This technology ensures a very high level of security for the communications path between the system and the maintenance PC. The REX router normally sits behind the firewall of the customer. And the PC, from which remote access should originate, is protected by a firewall. In the past, unwieldy solutions were in correspondingly high demand, which would make it possible to, for example, process the dynamically assigned IP addresses of the participants or bypass firewalls in a targeted manner. Such solutions were often even implemented at the expense of security.

With myREX24, Helmholz has therefore created an alternative that is as secure as it is simple. The portal serves as a mediation server for VPN communication between the provider of remote maintenance and the customer facility: This means that both sides can establish the VPN tunnel as an outgoing connection. Firewalls, as well as restrictions of services or cellular network operators are therefore no longer an issue. That's because they restrict data traffic only into the network, not out of the network. The outgoing connections are then briefly on hold until the VPN tunnel is established. The actual communication occurs in the VPN tunnel.

At Spierings, the portal is now used in the current high-end version as "myREX24 V2 virtual server." Virtual server means: Both the software and the hardware are located directly in the Spierings computer center, and thus within the access scope of the company. Up to 20,000 devices and 250 active connections support the system. All routers connect with the portal automatically upon commencement of operation of the crane and remain connected with it by way of permanent VPN access. However, for the customers of Spierings, it is not only high performance and security that counts, but also the good feeling of knowing that their systems data aren't held by a third party.

Practical experiences and perspectives

Convinced of the performance capability of the REX industrial routers, in the last three years Spierings has already equipped or retrofitted around 150 cranes with the corresponding remote maintenance components. In the meantime, each new crane is equipped with a REX industrial router as the standard. As was also the case in November 2017 for the premiering hybrid crane City Boy. As the world's only mobile crane, it can also transport itself in electrical operation and emission-free, for example, in urban areas. Because the required technology here is more complex than with the predecessor models, a REX with a larger functional scope is also used. The corresponding current model REX 300 will soon be replaced by the new REX 250. Initial practice tests are already taking place at Spierings.

And in addition to this, Spierings and Helmholz still have a lot of joint plans ahead of them: For example, the virtual server should in future also be used as a machine-to-machine (M2M) network. The system could then, for example, inform the crane operator directly of software updates. Another new usage idea is automated operating data logging via servers, which would offer new perspectives for the internal controlling of the crane operator, especially for crane lessors. – The success story of Spierings and Helmholz continues.

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Spierings City Boy, introduction in November 2017, the world's only mobile hybrid crane of this kind