

INU-100
USB Deviceserver

Low-cost Virtualization of Existing Steel Cutting Machines at Loibl Förderanlagen GmbH

Image credit: Loibl Förderanlagen GmbH

INU-100 USB Deviceserver by SEH for Low-Cost Virtualization of Steel Cutting Machines at Loibl Förderanlagen GmbH

Loibl Förderanlagen GmbH from Straubing, Germany, is a world-wide leading manufacturer and seller of solutions for transporting bulk material. From single components to complex systems. Loibl regularly modernizes all areas of operations. And in 2018 this included upgrading laser, plasma, and gas cutting system controls. Up to then, industrial PCs with older operating systems served this purpose.



Goals

In order to future-proof and upgrade efficiently, Loibl decided to virtualise its control units. Its current process entailed a Messer Group GmbH steel cut machine transmitting the control commands to the cutting machine. The control units transmitted the commands via RS-232 interface, with the control unit and cutting machine communicating by means of a serial interface.

"The control unit needed to be virtualised. This would mean that it would not be directly connected to the steel cutting machine anymore but via a software. This led us to the following questions: how can the software continue to control the machine? How do we virtualize an RS-232 connection? And how do we connect a USB dongle to the virtual system?" said Hermann Lehner, Operations Manager at Loibl.

To date, the control PC had been on-site with a direct connection to the cutting machine and was running Windows 7. The modernisation plan included an updated operating system and the virtualisation of the entire control command processing, utilising the RS-232 interfaces of the cutting systems.

Features INU-100 USB Deviceserver

› USB devices are embedded seamlessly and comfortably
› Centralized control via PC/industrial PC
> Using standard USB devices saves money
> The USB Deviceserver is reliable and highly available
> The integrated change over (CO) relay allows for automatic and/or event-based switching
> Your data is transfered at top speeds of up to 100 MB/s
> The INU-100 safeguards data during transmission

Research and Testing

The entire project was researched and planned by the IT systems and service provider BayCIX from Landshut in Germany. The well-established regional company provides individualised solutions covering the entire customer IT system, including security, infrastructure, and virtualisation. Partnered with 20 years of experience as a service provider, the BayCIX team were the ideal partner for market research and evaluation.

The first test setup was up and running in December 2018, with the entire test spanning for a total of 6 weeks. The IT service provider started with the virtualisation and cloud migration at Loibl. From that point on, a virtual machine on one central PC controlled the cutting machines. For transmitting the control commands, two industrial-type products from SEH Computertechnik GmbH, based in Bielefeld, Germany were chosen. Firstly, the serial to USB data converter SU-302 from SEH, converts the commands from USB to serial. Then the SEH USB Deviceserver INU-100 transmits the USB data across the network and enables the communication between the virtual system with the control software and the connected serial device.



The industrial solutions INU-100 and SU-302 can be installed on top-hat rails in control cabinets.



Image credit: Loibl Förderanlagen GmbH

Steel cutting machine at Loibl Förderanlagen GmbH

"We value the stability and flexibility of the entire system. It is comfortable to configure settings with RS-232, which is easy to use despite its age thanks to the SEH devices. The operators are also relieved that the older PC has been replaced and that it's time-consuming maintenance is no longer necessary".

Hermann Lehner, operation manager at Loibl Förderanlagen GmbH

The Result

Both SEH devices were also designed for installation on top-hat rails in control cabinets, which allowed for easy integration of all components into the entire infrastructure. The biggest advantage to Loibl was that neither the serial parameters nor the control software needed to be re-configured. The integration of the USB license dongles for the control software was not a problem either as they were connected with a 1:1 connection, identical to a local connection, so that all data was distributed fast and also "invisibly" to the user.

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Loibl & BayCIX

About Loibl
Loibl Förderanlagen GmbH is a world-wide leading manufacturer and seller of solutions for transporting bulk materials. From single components to complex systems. Over 50 years of experience and extensive knowledge about what bulk materials of all types require physically, makes Loibl a crucial partner for solutions covering the most diverse sectors and applications.

About BayCIX
BayCIX is based in Lanshut, Germany, and since its foundation in 1999 is focused on running data centers, server farms, firewalls and networks. Since 2002 its services also include a system management center. Its main objective is to help companies manage and process huge data volumes. This includes consultations for virtualization options and cloud solutions, but also help for creating and expanding IT infrastructure as well was IT support. Their main objective is to provide excellent IT counsel for all companies around Landshut and find the best solution for their IT requirements.

SEH Computertechnik GmbH

SEH specializes in professional network solutions. The company's core businesses are network printing and using USB devices via network.

30 years of experience stand for an innovative and versatile product portfolio as well as for custom-tailored solutions that meet individual needs.

All products are developed and produced at the company's headquarters in Bielefeld, Germany. US and UK subsidiaries as well as an extensive network of partners, distributors, and resellers allow for worldwide distribution. Customers include companies, corporate groups, public authorities and institutions from various sectors.

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