



## CAR MANUFACTURER USES KVM EXTENDER SOLUTION FROM KVM-TEC FOR REMOTE DEVICE CONTROL IN AUTOMATED PAINT SHOP

### THE CUSTOMER

INEE is a Polish supplier of automation systems for industrial clients, providing industrial IT services and automation solutions.

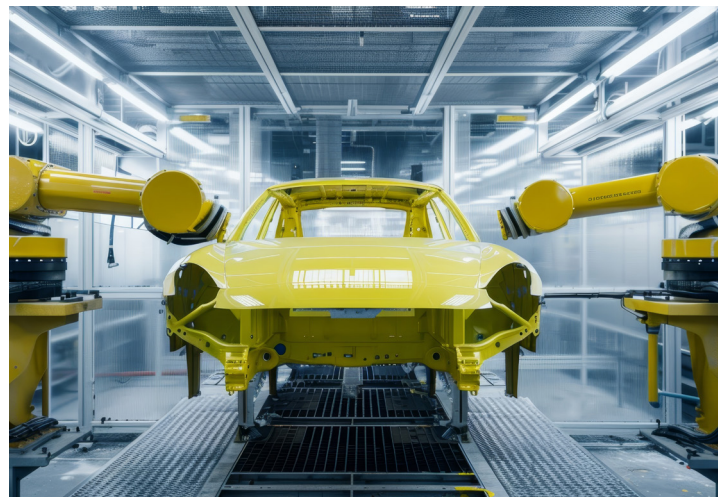
A major German automobile manufacturer approached INEE to design a system for a paint shop where car bodies of new vehicles receive their desired colors. In this facility, different vehicle variants are processed on the same painting line, guided by advanced conveyor systems and painted by highly specialized industrial robots. Each car body undergoes multiple processing steps: after a thorough pre-cleaning, a filler coat is applied, followed by a base coat defining the color, and finally, a clear coat for gloss, brilliance, and environmental protection.



### THE CHALLENGE

While control panels with dedicated software are located in the paint shop to oversee production processes, the associated PCs cannot be installed in the production area due to safety and explosion protection requirements. Materials and chemicals used in the facility create a hazardous environment, where components like fans or static electricity in computers could generate sparks, potentially causing explosions. Dust and particles from paint mist can infiltrate PCs, disrupting their functionality or causing short circuits. Temperature and humidity also pose risks to control computers.

To mitigate these risks, the computers need to be located in a safe zone, several dozen meters away from the control panels. However, direct connections between PCs and touchscreens are unfeasible due to distance limitations: video cables typically support a maximum length of 15 meters, while USB cables (used for touch input) are limited to 5 meters.



### THE SOLUTION

INEE opted to bridge the distance between the computers in the safe zone and the touch panels in the paint shop using KVM (Keyboard-Video-Mouse) extenders from kvm-tec. An extender CON unit is connected to the control panel, extending the computer signals via Cat X cable to a corresponding extender CPU unit on the computer side. The CPU unit interfaces directly with the computer's video and USB ports.

This setup allows operators in the paint shop to control the remote computers in real-time as if they were on-site. Video quality remains flawless, even over long distances.

Multiple pairs of smartEASY single KVM extenders connect numerous control terminals directly to their dedicated PCs. On the CPU side, an additional local display can be connected to monitor the control processes from the safe zone.

### THE BENEFIT

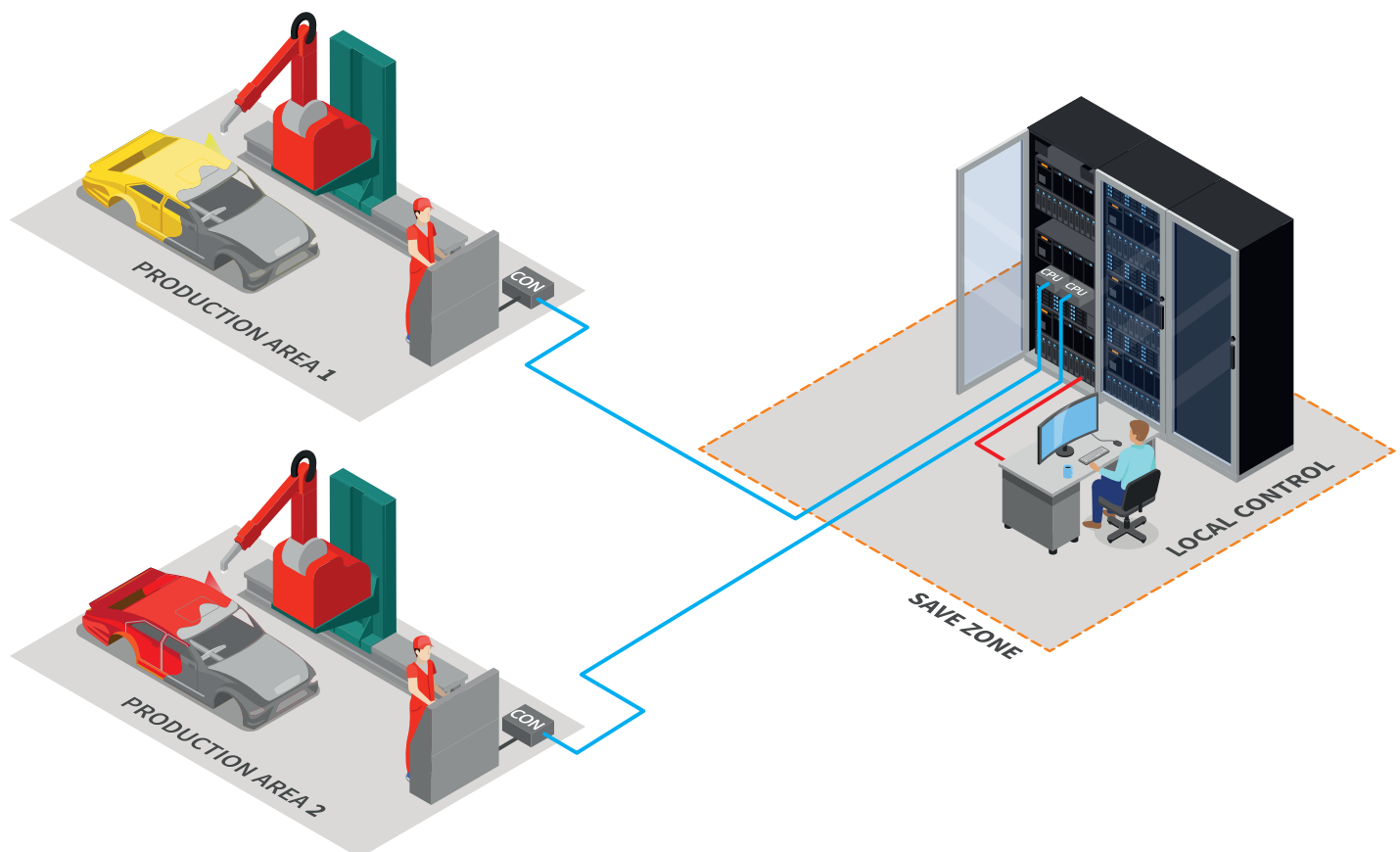
Thanks to kvm-tec's solution, the car manufacture can locate the computers securely in a protective cabinet outside the hazardous zone, ensuring their safety and longevity. This

setup enables stable and continuous operation of the PCs while allowing operators in the production area to access the computers seamlessly and execute all control processes.

Meanwhile, personnel in the safe zone can monitor control processes on screens connected to the computers, making the painting process both efficient and flexible.

In the future, the system can be expanded by integrating a network switch to establish a matrix system. This would allow any panel to access any computer within the KVM system, providing even greater operational flexibility.

### FUNCTIONAL DIAGRAM



#### KVM-TEC PRODUCTS IN USE

- smartEASY Single Extender CON
- smartEASY Single Extender CPU

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