



HMI SCADA SYSTEMS
IN MANUFACTURING INDUSTRY

KUKA chooses atvise® to be the new visualization system for its cell4 range

CLIENT: **KUKA**

Project

The main goal of this project was to update and streamline their wide range of visualization systems and, with this, to set new benchmarks in terms of usability and openness. To achieve this, **KUKA** sought a visualization system capable of addressing their various application scenarios for optimizing their industrial production processes.

Solution

The implementation of **atvise® HMI SCADA** allowed integration into existing production processes and environments, quickly adapting to changes in production and market requirements.

Client

KUKA

KUKA AG, headquartered in Augsburg, Germany, is one of the world's leading providers of intelligent automation solutions, offering a wide range of products and services that include robotic systems with various capacities and payload ranges, complete manufacturing cells, and ready-to-use production systems.

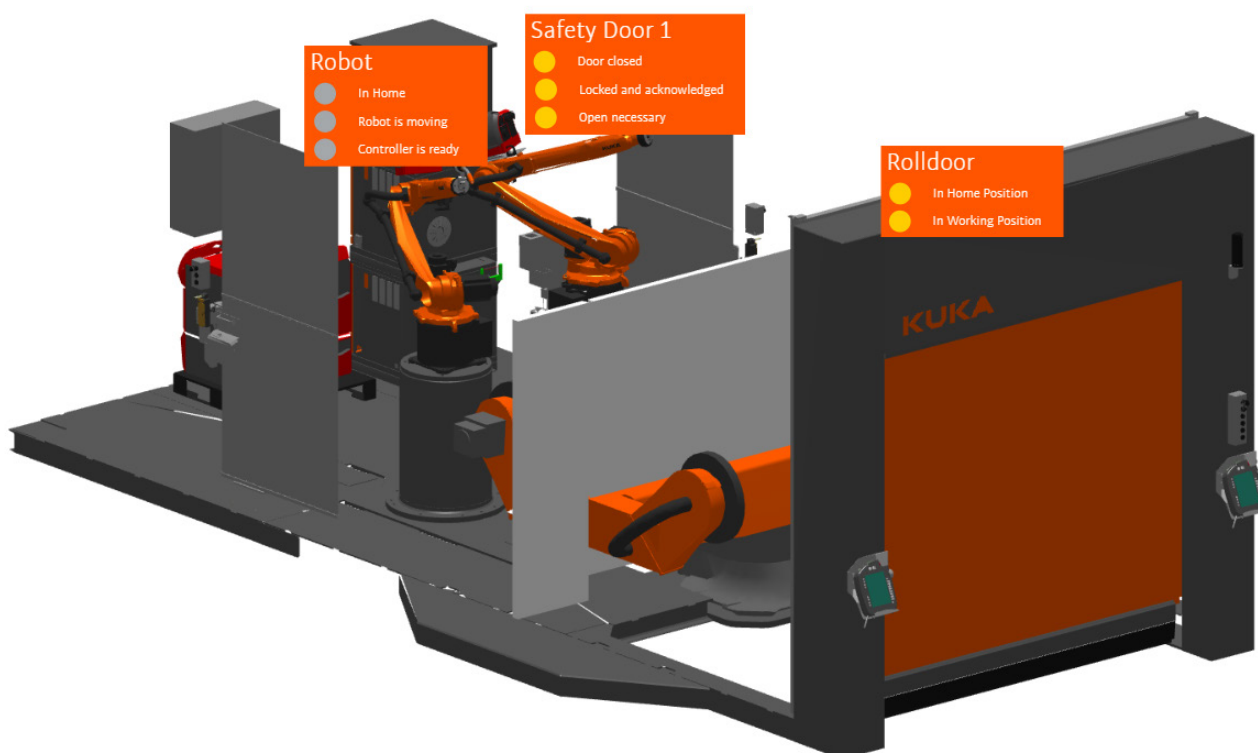
KUKA is one of the most sought-after companies in the area of automation and intelligent optimization of industrial production processes. Their mission is clear: **"to make people's lives easier by simplifying their work."**

Goals

- Streamline their wide range of visualization systems.
- Ensure ease of use and quick, intuitive navigation of the system.
- Guarantee integration into existing manufacturing processes, adapting to changes in production and market requirements.
- Utilize cutting-edge technologies such as HTML5 and OPC UA, and a structured development environment.

Main Challenges

- Require intelligent and open interfaces for the machines.
- Effective and rapid system response: in case of failure, users must be able to intervene within minutes. This requires that the visualization system be open in all directions, that relevant information is displayed consistently and uniformly, and that access is managed securely and reliably.
- Management of individual user access rights must be centralized.
- Statistics must be clearly displayed and always include relevant performance indicators to optimize the system and maximize utilization.



Results

- Specific OPC UA Methods of **atvise®** simplify interoperability within and outside the production cell.
- With the pure web technology user interfaces, responsive design makes the systems easier to use for both KUKA users and the development department.
- The development environment allows the client to implement new requirements in the cell4_production process independently.
- The interactive and 3D view of **atvise®** enables the visualization of the entire production cell, making operation and maintenance even easier for users in the future.

The flexibility and ease of use of **atvise®**

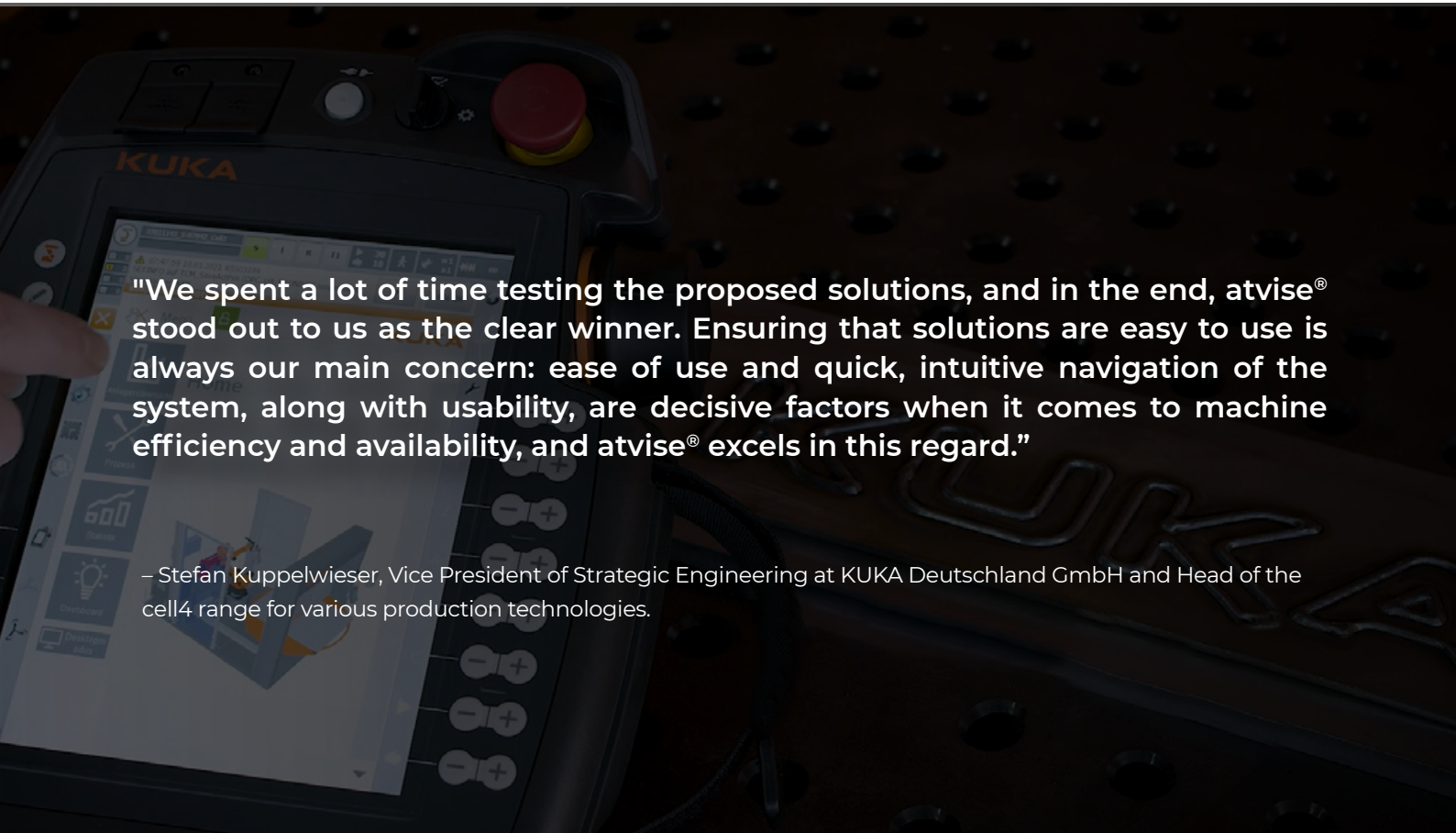
- have increased availability while reducing costs, ensuring that the systems are more sustainable in the long term. This has been crucial in allowing KUKA to stay a step ahead of their competitors.



Background

KUKA Deutschland GmbH sought to update and streamline its extensive range of visualization systems. The resulting list of requirements was extremely long and included platform-independent implementation, hardware-independent architecture, open interfaces, and scalability. Additionally, KUKA needed a system that utilized cutting-edge technologies such as HTML5 and OPC UA, along with a structured and user-friendly development environment, to deploy a long-term viable solution.

To evaluate the systems available on the market, KUKA compiled a comprehensive checklist in collaboration with its development departments. This list of requirements was sent to manufacturers, and after a pre-selection stage, the three most promising candidates were asked to demonstrate the viability of their proposed solution to meet KUKA's specified functional requirements.



"We spent a lot of time testing the proposed solutions, and in the end, atvise® stood out to us as the clear winner. Ensuring that solutions are easy to use is always our main concern: ease of use and quick, intuitive navigation of the system, along with usability, are decisive factors when it comes to machine efficiency and availability, and atvise® excels in this regard."

– Stefan Kuppelwieser, Vice President of Strategic Engineering at KUKA Deutschland GmbH and Head of the cell4 range for various production technologies.

Networked production environments require intelligent and open interfaces for machines. To produce smaller batches, production cells must be highly flexible in their operations, just like the people using them.

Consequently, associated visualization technologies must meet equally high standards. The system needs to be fast, easy to navigate, and intuitive to use. In case of a failure, users must be able to intervene within minutes. This requires the visualization system to be open in all directions, with relevant information displayed consistently and uniformly, and access managed securely and reliably.

Regarding the latter, individual user access rights (such as technician, operator, or maintenance personnel) are granted centrally, making access more secure.

Lastly, but not least, statistics must be displayed clearly and always include relevant performance indicators to optimize the system and maximize utilization.

This led to new opportunities for KUKA that were not considered when the original list of requirements was compiled.

Solution

Now, the specific OPC UA methods simplify interoperability inside and outside the production cell. With the pure web technology user interfaces made with **atvise®**, the responsive design makes the systems easier to use for KUKA users and the development department: whether using a SmartPad on the machine or a high-end HMI, information is displayed uniformly to the user without additional work or costs.

The development environment is part of the cell delivery scope, meaning that the client can implement new requirements in the cell4_production process by themselves. Additionally, the openness of **atvise®** means that the interactive and 3D view of the entire production cell in the visualization will make operation and maintenance even easier for users in the future.

“With the new visualization solution, KUKA now has an unprecedented 'touch and feel' system. The flexibility and ease of use of atvise® allowed us to increase availability while reducing costs, ensuring that the systems are more viable in the long term. This was fundamental in putting us a step ahead of the competition.”

– Stefan Kuppelwieser, Vice President of Strategic Engineering at KUKA Deutschland GmbH and Head of the cell4 range for various production technologies.



atvise® SCADA

SCADA SOFTWARE FOR INDUSTRY 4.0

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OPC UA



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