atvise®

HMI SCADA SYSTEMS IN THE
BUILDING AUTOMATION SECTOR:

Pure web HMI/SCADA system for energy management and maintenance of a luxury hotel

CUSTOMER   **THE DOLDER GRAND**

Project

The **Dolder Grand Hotel** has towered above Zurich like a fairytale castle since 1899. In 2017, maintenance of the existing building management system became a major problem: The manufacturer was no longer able to service the aging software. The solution to this dilemma was found in **atvise®HMI SCADA.**

Solution

The implementation of **atvise® HMI SCADA** allowed addressing the issue that the manufacturer could no longer service the obsolete software, managing to control and monitor the operations of the luxury hotel and at the same time, helping to ensure a relaxing stay for its guests. This also saves the hotel operator a lot of energy and maintenance efforts.

Customer

THE DOLDER GRAND

The **Dolder Grand Hotel** is a Swiss urban resort that charmingly combines the past and the future and is somewhat reminiscent of the Disneyland fairytale castle. Interestingly, Walt Disney was once a guest at the Dolder – as were many other celebrities, a number of whom became regular guests. For example, Michael Jackson, Albert Einstein, Rihanna, and the Rolling Stones, to name just a few. The furnishings of Suite 100 are even dedicated to the latter.

This hotel resort provides visitors peace and quietness since it has a wide offering in health and well-being. To ensure that the feel-good factor is maintained in all 175 rooms, the resort requires a reliable and modern control technology.

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Objectives

- Use cutting-edge technologies such as **HTML5** and **OPC UA**, as well as a structured development environment.

- Detailed operational data should be recorded and monitored over a long period of time.

- Ensure ease of use and fast and intuitive navigation in the system.

- Authenticated reporting system, which provides updated sustainability certificates at the touch of a button.

Main challenges

- The team was initially skeptical about how secure and reliable the software would be, as it was developed using pure-web technology based on **HTML5.**

- Conversion of live operation controllers and communication with over 320 older **Beckhoff** controllers.

- Processing large amounts of data, over 1.1 million variables through the **industry 4.0 communication standard, OPC UA.**

Results

- **Maintenance costs and energy consumption were significantly reduced thanks to the successful implementation of the certified energy data management system.**

- **The scalability and flexibility of atvise® made it easy to adapt to the overall architecture required by the hotel resort.**

- **The atvise® alarm system offers the advantage that all alarms have been parameterized directly with all required information and text, and then delivered ready-made to the alarm system, reducing duplicated entries.**

- **Detailed operating data can be recorded and monitored over long periods, and a wide range of graphical display options enables the prompt detection of deviations, with faults quickly rectified.**

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Background

The manufacturer of the previous building monitoring and control system was just beginning to develop an up-to-date HTML5-based control system when problems with the old product became widespread, prompting the hotel's technical managers to take action.

"An HTML5-based control system is based on pure-web technology – a concept that has allowed atvise® software to be successfully implemented as a visualization and SCADA product in various industrial sectors over many years."

- Roland Demont, **Demont Engineering.**

This was the argument from Roland Demont, owner of Demont Engineering, whose team has long provided maintenance of control technology at the luxury five-star hotel, when asked for an alternative approach to the hotel's control system.

Solution

The operators looked into visualization and SCADA software **atvise**®, produced by Austrian manufacturer Bachmann Visutec. The company was initially skeptical about how secure and reliable the software would be, as it was developed using pure-web technology. After all, there was no reference project from any other hotel at the time. Other solutions were also considered.

Finally, the decision was made in favor of **atvise**® – partly due to the successful implementation of certified energy data management system ACRON. With this software, energy consumption in the hotel was reduced by 45% within a very short space of time.

Since then, a number of operations have been, and continue to be, converted and integrated into the system to further reduce energy costs.

An important side effect soon became apparent: maintenance costs were significantly reduced.

Detailed operating data can be recorded and monitored over long periods, and a wide range of graphical display options enables the prompt detection of deviations, with faults quickly rectified. In fact, the ACRON system at the Dolder Grand Hotel is currently the largest in Switzerland, with well over 10,000 process variables in building service engineering.

Conversion of live operations controllers and communication with over 320 older Beckhoff controllers posed a great challenge. These controlled all primary systems such as ventilation, refrigeration, sanitary and heating systems, as well as room technology. The controllers, particularly for the latter, were not designed to meet the required performance – such as OPC UA communication. But a smart solution was again identified: The room controllers were simply equipped with a slim **atvise**® web server. This allows guests to conveniently adjust parameters, such as room temperature, to their individual needs using **atvise**® directly.

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OPC UA - The basis of communication

At the **Dolder Grand Hotel**, **atvise**® now processes 1.1 million data points. A total of four server systems were installed. One main server and one independent server per building. Communication to hotel operations, as well as to the external alarm system, is via the future-proof **OPC UA** interface. For the alarm system in particular, this offers the advantage that all alarms have been parameterized in **atvise**® with all required information and text, and then delivered ready-made to the alarm system, reducing duplicated entries.

The Dolder Grand
Tagesbericht Wasserwerte Badewasser
KR1 Innenpool
Mittwoch, 07.07.2021

Zeit	Kreislauf 1					Innenpool	
	Istwert Redox Innenpool KR1	Istwert pH Innenpool KR1	Erfolgreiche Rückspülungen Sandfilter Innenpool KR1	Erfolgreiche Rückspülungen Aktivkohlefilter Innenpool KR1	Frischwasser-Verbrauch Innenpool KR1	Istwert Temperatur Innenpool KR1	Istwert Chlor Innenpool KR1
	mV	ppm	Stk	Stk	m³	°C	mg/l
00:00-01:00	748	7,21	0>	0>	0<	29,7>	0,38>
01:00-02:00	747	7,21	0>	0>	1	29,7>	0,38
02:00-03:00	746	7,21	0>	0>	1	29,7>	0,38
03:00-04:00	749	7,23	0>	0>	0<	29,7>	0,38
04:00-05:00	755>	7,18	0>	0>	1	29,7>	0,38
05:00-06:00	748	7,18	0>	0>	1	29,7>	0,38
06:00-07:00	741	7,20	0>	0>	0<	29,7>	0,37
07:00-08:00	739	7,22	0>	0>	1	29,7>	0,37
08:00-09:00	738<	7,22	0>	0>	0<	29,7>	0,38
09:00-10:00	740	7,21	0>	0>	1	29,7>	0,37
10:00-11:00	743	7,20	0>	0>	1	29,7>	0,37
11:00-12:00	743	7,21	0>	0>	2	29,7>	0,37
12:00-13:00	739	7,22	0>	0>	5>	29,7	0,37<
13:00-14:00	743	7,25>	0>	0>	1	29,6	0,37
14:00-15:00	748	7,23	0>	0>	1	29,6	0,37
15:00-16:00	749	7,22	0>	0>	0<	29,6	0,37
16:00-17:00	748	7,22	0>	0>	1	29,6	0,37
17:00-18:00	747	7,22	0>	0>	1	29,6	0,37
18:00-19:00	749	7,22	0>	0>	0<	29,6	0,37
19:00-20:00	750	7,21	0>	0>	1	29,6	0,37
20:00-21:00	749	7,20	0>	0>	0<	29,6	0,37
21:00-22:00	748	7,22	0>	0>	1	29,5	0,37
22:00-23:00	748	6,90<	0>	0>	0<	29,5<	0,38
23:00-00:00	748	7,22	0>	0>	1	29,5<	0,38
Max	755	7,25	0	0	5	29,7	0,38
Min	738	6,90	0	0	0	29,5	0,37
Tageswert	746	7,20	0	0	21	29,6	0,37

One system for all operations

The wide flexibility and adaptability of **atvise**® allowed controlling practically all hotel management operations. Even the concierge uses the web-based system to monitor all exterior doors. If a guest forgets to close a window or turn off the air conditioning when leaving the room, the concierge can do it from their workstation with a simple click. This in turn saves a great deal of time and energy. The second phase of this project will be based on integrating **atvise**® to manage the entire SPA area (14 pools).

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atvise® SCADA

SCADA SOFTWARE FOR INDUSTRY 4.0

The first HMI SCADA software built on Industry 4.0 fundamental basis: Pure Web Technology and OPC UA.

FREE DOWNLOAD atvise® SCADA

Highest Security

Responsive Design

Pure Web Technology

OPC UA

Multiplatform

atvise®

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