

DEOS case study – Largest cinema in Cologne air-conditioned auditoriums with DEOS

Up to 12,000 visitors can expect good entertainment and an optimal indoor climate every day



CINEDOM in Cologne operates 14 state-of-the-art cinema halls under an imposing glass dome, with the highest standards of comfort and experience for visitors.

Film producer Bernd Eichinger had acquired the property in 1988. The cinema opened in December 1991 and was the first building in the Mediapark Cologne. It offers 3,300 seats, making it one of the largest German cinemas.

The operator attaches great importance to optimal air conditioning of all cinema halls, the foyer but also of the catering establishments such as Hans im Glück or Vapiano.

Hollywood greats such as Tom Cruise, Harrison Ford, Britney Spears, Angelina Jolie, Michael Douglas, Brad Pitt and Hugh Grant, among others, have presented their films in person at premieres in Cologne at CINEDOM – which underlines the high level of comfort of the operators.

This imposing large cinema building in the centre of Cologne has been providing a fascinating setting for the premieres taking place for over 30 years. But like any good movie, this building needs a remake every now and then.

Conversion of old Honeywell systems to DEOS during operation: more energy savings and optimized operation

In August 2024, for example, the renovation of the I&C systems at CINEDOM Cologne began. The special feature: the step-by-step renovation of the heart of the business during ongoing cinema operations – the I&C control of all HVAC systems in the cinema halls.

The conversion aimed to create a more comfortable indoor climate with well-regulated CO2 levels. For the visitors, this created a noticeably fresher room air in the halls, including optimal pressure conditions. Because before the renovation, visitor complaints about precisely this lack of air quality increased.

There were several challenges as part of the modernization of the technical facilities. Initially, the required spare parts of the old manufacturer were no longer available, as they were discontinued. In addition, the CINEDOM operator felt that the costs for the technical expansion of the old service provider were disproportionate. For these reasons, the search began for an open I&C system that could offer more flexibility and future-proofing.

The search for a new central I&C system began, with the aim of being able to connect the prospective technical systems such as fire damper control or emergency battery monitoring in the future. This also includes the desire for central alarm management of these systems.

Each of the 14 cinema halls has its own ventilation system with separate I&C control. The compact design of the DEOS IO modules and DDC controllers proved to be an advantage, as the existing control cabinets were to continue to be used. This limited the space required in the cabinets.

INSTATEC used the DEOS BACnet workflow (EBE) and the BACnet libraries for programming. The BACnet function can be activated later for system expansion if desired.

Concept

The operator wanted to be able to view and change the status of the system not only in front of the control cabinet, but also directly in the cinema halls. As a result, a mobile operating concept was developed using DEOS tablets. Each control cabinet was equipped with a WLAN router so that the tablets can connect to the onboard building management system (BMS) of the DEOS controllers (OPENweb) and display the system status in HD graphics – from anywhere in the building.



This solution also reduced the commissioning effort and simplifies maintenance work in plant operation. The rights-based operating concept offers various graphic interfaces and distinguishes between the reduced view for the caretaker and the detailed view for the building technician, which enables user-friendly handling of the HVAC system.

In addition, remote access to the operating data of the system is enabled via a centrally installed building management system (BMS) – the BACnet/SC-certified OPENweb from DEOS – which makes monitoring and setting the optimal control system much easier and faster.

Technology at a glance

- **GLT (BMS) OPENweb**
over 3,000 data points
- **DDC / OPEN 710 EMS**
21x DEOS controllers take over the control of the total of 21x HVAC systems.
- **IO Modules / CAN Bus**
227x different DEOS IO modules (analogue/digital) with CAN bus connection
- **Remote maintenance / DEOS Connect Box**
1x Connect Box for IT-secure remote access to all system components

Conclusion – the key to success

An important feature of this retrofit project is the partnership between the end customer CINEDOM, the executing company INSTATEC and the manufacturer DEOS. This cooperation was a key to success and enabled the integration of new ideas and solutions.

The completion of the renovation work in the first quarter of 2025 is awaited with great expectation. In addition to the energy savings achieved, the new operating concept in particular helps to make plant service processes more efficient and user-friendly.



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