Case Study

Dispatching energy via KVM

When realigning the company in 2013, EnBW committed themselves to the credo "Safe energy turnaround". Since then, Germany's third-largest energy group has been undergoing some changes. As key players in the energy turnaround, EnBW are consistently pursuing their strategy. Their focus is on expanding the generation of renewable energy resources, expanding the stable grid business, providing innovative products and services and implementing comprehensive efficiency measures. Energy dispatching is used to monitor and control the use of power plants and to provide control energy. In the course of a system upgrade, the visualization and operating technology of the control room consoles was upgraded as well.

EnBW is deeply rooted in Baden-Wuerttemberg and has a long history dating back to the beginning of the 20th century. The aim of the company is to successfully implement its strategy with a focus on being close to its customers and, above all, to serve as an „engine room of the energy turnaround". The EnBW Group covers the entire energy value chain and is responsible for energy generation, distribution and transport, trading, sales and energy services. Here, renewable energy generation and decentralized solutions are becoming increasingly important.

Energy dispatching is used to monitor and control the use of power plants and to provide control energy. This task is performed from a control room staffed 24/7. In this control room several screens of different computer types converge and are operated via a KVM system.
The technology used at this time – a CATCenter NEO matrix switch installation – was still VGA-based. And although it was still running perfectly, it was time to replace it with a new digital matrix. Integrating new DVI computers into the analogue matrix had become more and more difficult and could only be done with appropriate adapters, which in turn often led to a loss of quality when displaying images.

Since the control room is staffed 24/7, the new technology needed to be available and run smoothly around the clock. In order to harmonize the heterogeneous computer infrastructure, the new IT landscape also needed to support all common video output signals such as VGA, DVI, DP and HDMI in order to be able to connect a wide variety of machines. Since the computer infrastructure used runs on different operating systems, it was also important that the KVM systems work with all operating systems.

Solution and technical implementation

EnBW opted for a ControlCenter-Digital 160 from Guntermann & Drunck, a powerful matrix switch that uses CAT cabling to make all

G&D
IF IT'S KVM

Overview

Customer

With over 21,000 employees and around 5.5 million customers, **EnBW Energie Baden-Wuerttemberg** is one of Germany's biggest energy supply companies. Its supplied energy consists of around 26 % renewable energies, with this figure set to increase in the future. The company continues to push ahead with the expansion of renewable energies, focusing primarily on wind and hydropower.

Project & Challenges

EnBW's energy dispatching control room at the Karlsruhe site plays an essential role: from here, all power plants and generation units are centrally deployed and monitored. Since the existing VGA-based KVM technology no longer met the requirements of modern workstation computers, the company opted for a digital solution. The main challenges of the project were to harmonize different computer types and to integrate a possibility to flexibly control a video wall.

Equipment

KVM matrix:

- ControlCenter-Digital 160 and I/O-Cards-CAT

Matrix peripherals:

- DP-CPUs, VGA-CPUs, DVI-CPUs, DP-CONs, DVI-CONs

Other KVM devices and functionalities:

- TS function, Push-get function, IP-Control-API

Other hardware

2 x VuWall TP-10D:

- 10" Multi-touch Panel for VuWall Control Panel Interface

1x VuScape video wall controller:

Type VS400-3-VW2-PRO-SMC3-12O-20D-3CLT

- with the following configuration:
- 12 outputs, 20 DVI inputs
- VuWall2 PRO management software:
- 3 client licenses, 1 VuWall Pro server licence

Result & Benefits

- Computer-free control room with a large screen consisting of ten cubes
- Flexible image output of one or multiple sources via one or more video wall cubes as well as the enlargement of image details over several cubes
- Flexibility and better usability

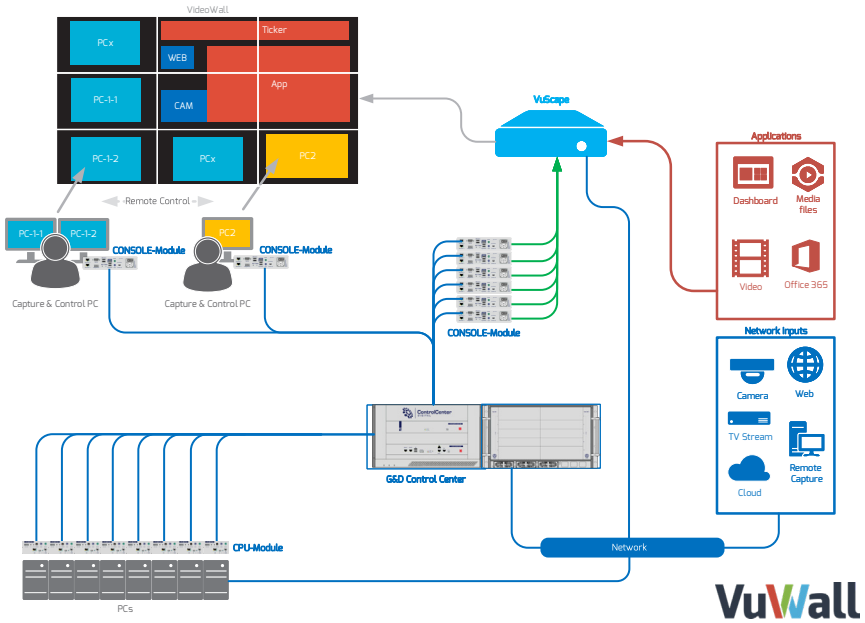
▲ Each computer can be displayed on one or across more cubes.

> „Together with the flexible screen control, the digital matrix is a significant improvement compared to the old VGA-based solution," summarizes the project manager at EnBW.

remote computers available at the consoles. It also offers maximum flexibility with regards to functionality and supported signals.
The matrix switch was combined with VuWall's VuScape video wall controller, which allows flexible control of the large screen so that images can be enlarged over several cubes or only a small part of an image can be displayed.

Especially for the control room, VuWall optimally adapted its software to the project requirements of EnBW and thus developed a highly integrative solution that enables maximum flexibility for the users. They can now load the required template from various predefined layouts saved in a scenario without having to manually select the sources and sinks. The matrix system also auto-follows the complex application process and is switched at the touch of a button.
This greatly increases the user-friendliness for the control room staff.

The VuWall controller bundles all cubes of the video wall into a virtual screen and thus allows complete flexibility in switching and displaying the individual displays on the large screen. The VuWall controller communicates with the matrix using G&D's IP-Control-API and can therefore execute the switching commands via the network. Independent from any location, each computer can access the desired video wall cube or even multiple cubes at once. This ensures that dispatchers always have an overview of the power plants available on the video wall.



EnBW removed all computers used for dispatching from the control room and placed them together with the screen controller in a separate technical room. This room now contains about 20 computers, some of which are equipped with multi-head graphics cards. CAT cables extend the computer signals to the remote consoles in the control room.

When entering the control room, the first thing you notice is the impressive video wall. It consists of ten individual cubes which can show any images. The control room has two consoles, each equipped with 14 monitors, which are arranged in a circle. The individual consoles are divided into three additional sub-console, each of which is connected to the matrix and the remote computer technology via KVM systems and can each be operated via three keyboards. This makes the consoles more flexible and ensures that the control room can be staffed with additional personnel, if necessary.
Would an IT console in dispatching work without applying KVM systems? The project manager points out: "Of course it would be possible in theory, but we'd have to place several computers under a desk, which again would be extremely noisy. On top of that, we'd also

need to equip our computers with much more keyboards and mouse devices. We used to have it that way, but working with these kind of consoles is now out of the question." G&D's KVM systems helped to decisively optimize the IT landscape and simplify its handling for personnel.

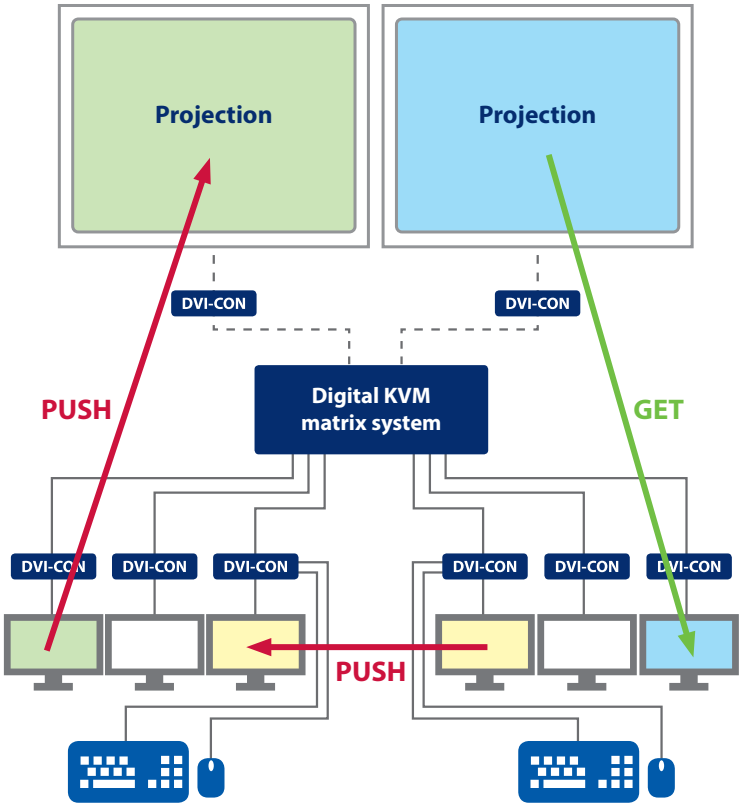
In order to further support the dispatcher's work and to make it more flexible, it was important that keyboard and mouse would work across screens and systems and that the employees would be able to quickly and easily switch to the desired computer-monitor constellation. By using the integrated TS function of the digital matrices, G&D fulfilled these requirements so that every dispatcher can now switch back and forth using hotkeys and operate all 14 monitors flexibly.

Push-get function

The ControlCenter-Digital also comes with the push-get function. With this function, users can move the screen contents of a target to or get it from the display of another console. This display can be a large screen projection, for example. Thus, screen contents can be easily exchanged and edited.

Customer benefit and outlook

EnBW's system was installed in autumn 2017 and has been running day and night without interruption or complications ever since. „Together with the flexible screen control, the digital matrix is a significant improvement compared to the old VGA-based solution," summarizes the project manager.



▲ How the push-get function works

▲ Each dispatcher console is equipped with 14 displays.

EnBW Energie Baden-Württemberg AG
Durlacher Allee 93
76131 Karlsruhe
www.enbw.com
kontakt@enbw.com

VuWall Technology Europe GmbH
Lustnauer Strasse 78
72127 Kusterdingen
Tel. 07071 5499 206
www.vuwall.com
sales.emea@vuwall.com

G&D
IF IT'S KVM
Guntermann & Drunck GmbH
Obere Leimbach 9
57074 Siegen
Tel. 0271/23872-0
www.gdsys.de
sales@gdsys.de