

THE CONTROLLER

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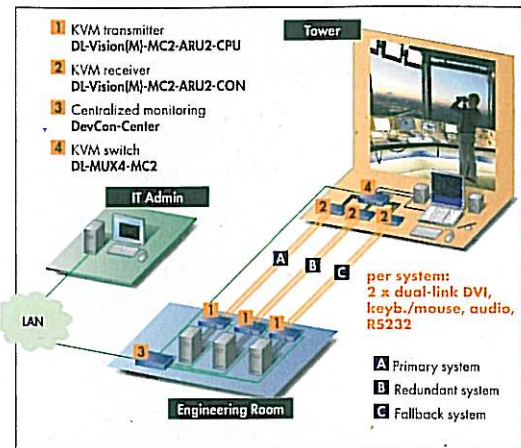
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Controllers hidden friend: KVM

By Annette Haebel, Guntermann & Drunk
ATC staff and IT play a crucial role for smoothly and safely running processes within air traffic management. Guntermann & Drunk, a leading manufacturer of KVM products, provide access tools for mission-critical applications within the Air Traffic Control. KVM adapts to the needs of different ATC requirements and offers on top certain safety functions to ensure high availability for ATCO's IT tools.



What is KVM about?

Originally, the acronym 'KVM' described a technology for extending and switching a computer's Keyboard, Video, and Mouse signals. Nowadays, KVM switches extend multiple signals: DVI dual-link up to 4k resolution, single-link DVI and analogue video, bidirectional audio, RS232 as well as USB transparently.

Three main categories of KVM devices improve the working environment of controllers and computers.

1. KVM extenders: separate computers from controllers
2. KVM switches: operate multiple computers cross-platform with only one keyboard, video, and mouse
3. KVM matrix switches: combine extender and switch functions in one system

Advantages for ATCO's

KVM products offer the following advantages over other technologies:

- simple one-to-one connection with real time transmission*
- clear up controller's desks by peripherals savings*
- reduce noise and heat in working environment*
- simple, intuitive use by push-buttons or on-screen-displays*
- enable computer administration without disturbing the ATCO's work*

KVM extenders bridge the distance between air traffic controllers and the computers in the engineering room. The computers' external interfaces are

connected to the extenders' transmitter units – keyboard, video and mouse interfaces. Those are extended to the receiver unit located in the tower or control centre. Keyboard, monitor and mouse are then connected to the receiver. By this the controller is able to access and operate the remote computer in real time regardless of the distance. Extenders carry out the setup independently and automatically.

Without disturbing the ATC staff, the IT administrator can easily access the computers from inside the engineering room at any time.

In combination with KVM switches or matrix switches the efficiency of KVM installations can be increased further. Instead of having a dedicated local console for each transmitter, all transmitters can be connected to one KVM switch thus enabling centralised control by a single console.

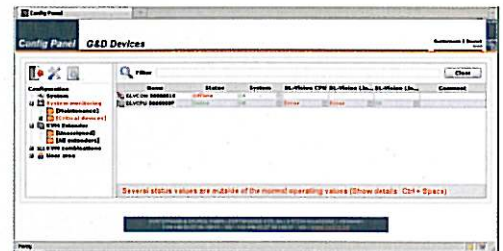
Safety within the operation

KVM products from Guntermann & Drunk support mission-critical applications by preventive monitoring of the status of devices. They distribute event messages via network and enable to create multiple redundancies.

Since safety is paramount in the aviation industry G&D's safety features for ATC extenders and switches include:

- event reporting functions (for example for interferences, temperature, operating condition)*
- permanent monitoring of the computer video signal with reporting function*
- simple network management protocol (SNMP) and Syslog messages*
- integrated self-monitoring power packs*

Screen-Freeze function (capturing video information in case of failure of video signal)



Living example of the ATC practice

By combining several KVM extenders with a KVM switch, multiple redundancies can be built on the line between computer and air traffic controller and simply switched via just one keystroke. So if one computer line fails, the controller can continue his work independently, safely, easily, immediately and intuitively on the other line.

In the above figure, a primary, redundant and back-up system are deployed, each consisting of a computer and KVM extender line. The controller can switch between these three systems by simply pressing a button at the KVM switch. The switch, which is installed next to the controller's desk, is connected to each of the three lines.

More to come

25 years of experience in extending and switching technology makes G&D one of the leading KVM manufacturers. Air traffic control professionals and leading system integrators from more than 20 countries trust in the company's experience.

G&D – your KVM wingman

For further information visit <http://www.gdsys.de> or <http://atc.gdsys.de>

Web interface of DL-Vision KVM extender showing critical device status.

Photo: G&D