

SWITCHING SYSTEMS IN AIR OPERATIONS

KVM technology offers error-free, dependable and switchable connection to remote computers in ATM, flight planning, airline operations and other key areas

Enno Littmann, CEO of IHSE GmbH

KVM extenders are used at Sofia airport to extend high resolution signals from computers to controllers over a distance of 1 Km using fibre cables.



As European skies become more congested, ANSPs and other organisations responsible for providing efficient and safe passenger movements are using technology to maximise airspace efficiency and ease congestion.

The SESAR (Single European Sky ATM Research) research programmes use electronic and avionic equipment combined with sophisticated software to help move towards this goal. This software aims to make flight planning, air traffic management and ground operations more efficient whilst maximising safety in all areas of operation.

Computer resources

SESAR's solutions focus on high-performing airport operations, advanced air traffic

services, optimised ATM network services and aviation infrastructure. The common thread across these areas is the increased use of computer technology and the need for operators to frequently access many remote computers. Increasingly users need to switch between applications on different computers quickly and easily. The images they see must be perfect and the computers must respond to their actions instantly.

The solution to this requirement is provided by KVM (keyboard, video, mouse) switching and extension technology. KVM switches and extenders enable banks of computer equipment to be connected directly to users at their own workstations with total reliability and data integrity. This allows computing equipment to be located in

a secure and environmentally controlled remote location, improving users' working environments. It also allows individual users to select the devices they wish to use with simple commands.

Operations and remote towers

KVM switching systems have already proven themselves in many ATM applications around the world and are increasingly being deployed in new installations. KVM technology is an essential part of the ATM infrastructure.

The latest techniques and enhancements that combine air traffic services together to create greater efficiency, for example in A-CDM (Airport Collaborative Decision Making), require a much greater amount of



Left: A wide range of KVM matrix switches suits installation requirements of all sized projects.

computing power – some of which is likely to be virtualised and held in the cloud. KVM systems reach those computers and offer enormous potential to controllers, planners and stakeholders, enabling them to deliver the performance increases that will be demanded over the next decade.

Optimised networks and infrastructure

One of SESAR’s goals is to optimise the ATM network. A candidate technology is artificial intelligence, which draws on massive amounts of historical data to teach computer software about past levels of performance, so it can accurately predict future workloads

and requirements to aid airspace management. Researchers and software designers use KVM matrix switches to access the different computers and applications to develop these concepts.

Much of the focus on improving aviation infrastructure is based on data interchange and sharing. The industry is already familiar with system-wide information management that enables data sharing. KVM will play a part in managing and accessing the arrays of computers needed for this. Furthermore, as autonomous and semi-autonomous flight is introduced, the need for accurate and secure data transmission and access will grow, particularly in the control and operation rooms that oversee aviation services. KVM is already a proven technology in this task.

KVM technology comes from a long-established and proven base and has become an essential infrastructure element in many other industries. It has a massive amount to offer aviation as the industry embarks on the next, most challenging phase of its evolution. ❖

KVM IN AIR TRAFFIC CONTROL



Instant access to any ATM device

Secure transmission and instant access with IHSE

IHSE KVM technology transports real-time data throughout the entire air traffic control and management process,

enhancing safety and operational efficiency from take off to landing, and beyond.



Draco tera
KVM systems for total connectivity

Draco tera enterprise and compact switches, 8 to 576 ports

- Designed for 24/7 continuous operation
- Mixed Cat X and fiber interconnection
- Hot swap component capability
- Fully-secure and reliable transmission

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