



KVM switches and extenders bring flexibility and adaptability to the new generation of remote and virtual towers

# REAL-TIME DATA DISTRIBUTION DURING TIMES OF CHANGE

Keyboard, Video and Mouse systems deliver critical data to control towers, aid ground and air personnel training, assist with baggage handling and inform passengers through terminal information and signage

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Even before the Covid-19 crisis disrupted world health, economies and activities, the air traffic management industry had been actively investigating new and enhanced methods to improve the operational resilience and effectiveness of air transport and airport operations. This was focused on meeting increasing transport demands of traveller numbers and ever-more congested skies. As global threats highlight the need for even greater robustness, adaptability and performance in critical systems has become even more important.

Whilst the operational environment has changed radically, the need to provide solutions that maintain the absolute integrity of operation remains paramount. An ongoing requirement for flexibility is

essential so that air traffic management systems can respond to external situations that change suddenly and to be able to adapt as the industry itself evolves.

New technology and initiatives introduced by airports, manufacturers and research programmes such as SESAR necessitate flexibility in system deployment and solutions. This flexibility is being delivered widely: ANSPs and service delivery organisations and system integrators have created new designs for local and remote ATC towers, control centres and backup facilities. In addition to implementing remote tower designs capable of managing multiple airfields from a single point.

KVM (Keyboard, Video, Mouse) technology has greatly aided the implementation of many of these solutions

and is a technology that has come of age over the years to offer worthwhile and highly beneficial features to the air traffic management industry.

It is already an essential component in the infrastructure of many traditional towers, including those at Schipol, Heathrow, Changi and Sofia airports. KVM is used to distribute signals and data between controller workstations in the control rooms at the top of the towers and computers and equipment located in secure, air-conditioned equipment rooms further below. In addition to separating controllers from noisy, heat-generating equipment to create a better environment, it allows sensitive, crucial equipment to be maintained and serviced in the best possible environment. KVM technology also provides long distance signal

distribution to off-site back-up towers, in some instances these can be placed several kilometres away.

KVM extenders and switches are used in other airport locations: for ground operations, controlling vehicle and essential services, runway lighting systems, training facilities, security operations and concourse information and signage. In all cases the flexibility, reliability and capability of KVM technology ensures the best operating efficiency and security within the airport.

New installations, such as that at King Abdulaziz airport in Saudi Arabia, deploy large KVM switches within the tower infrastructure enabling individual controller workstations to be configured with an individual mix of ATC devices and duplicating them as required onto supervisory positions. The connection regime can be instantly changed to alternative layouts so that the workstation locations can serve other purposes; highly useful in response to unforeseen situations, such as virus infection.

IHSE KVM extenders and switches offer a range of security and redundancy features that make them eminently suitable for

deployment in installations that demand full continuity of operation and reliability. Systems can be backed up and duplicated to various levels to meet any required scheme with automatic changeover that ensures controllers are not inhibited in any way. Redundancy and hot-swapping of devices further ensures that essential services and equipment is constantly available, whenever and wherever it is required.

Naturally, visual images and operator response are of sufficient quality and speed that there is no possibility of false information transmission, corruption or delay that may impinge upon the operation and safety of the installation: whether that is within an ATC tower, on ground operations or in an airport concourse.

As the industry moves into the future, new concepts and equipment will be developed to enhance operational procedures and streamline the industry. The flexibility and

performance, including long distance and IP-based network connectivity, offered by the latest generation of KVM technology will keep pace with this evolution.

As installations expand or change the KVM system can adapt to encompass new control and information devices without restricting operators. It offers a route to select specific devices from a bouquet of systems to ensure that the most appropriate, latest and up-to-date information is presented to controllers. ❖

**Right:** An extensive range of KVM switches and extenders provides solutions for all applications, from take off to landing and beyond



## KVM IN AIR TRAFFIC CONTROL



Photo courtesy of NATS

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



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