



Air Traffic Control Centers Deploy Emerald® KVM over IP to Unify Their Extension Systems

Industry	: Air Traffic
Solution	: KVM-over-IP
Application	: ATCC Control Rooms
Product	: Emerald® SE, Boxilla Manager, Freedom, Central Power Hub

THE CHALLENGE

A customer was tasked with updating and unifying remote system access (KVM extension) in two Air Traffic Control Centers (ATCCs) that monitor the air space of a European country.

The ATCCs had a variety of legacy systems installed that must operate side-by-side with the new system. In order to ensure secure hosting, the ATCC systems were housed in a dedicated server room away from the control room. By relocating the systems from the control room, the operators were provided with a more quiet and focused work environment. Consequently, reliable 24/7 fail-safe remote access was required for control room operators to manage the variety of systems.

The customer's previous extension system was a hodgepodge of equipment sourced from different manufacturers, all of which were not necessarily compatible with each other. It was a challenge for service personnel to maintain and secure the non-standardized KVM extenders and other IT equipment. The client also wanted to simplify the training of operators and service technicians on the complete system. Ensuring a standardized solution became a top priority for him.

THE SOLUTION

Black Box's Proof of Concept, expert consultancy, and live demos with the Emerald KVM-over-IP system won over other concepts. All systems are located away from the control room in a safe data center. Emerald® SE transmitters, and 1G and 10G Emerald Ethernet Switches connect the back-racked systems with the control rooms. Central power hubs replace multiple power supplies to save rack space and provide remote power management. Old and new systems are combined under one platform and can be easily accessed by the operators.

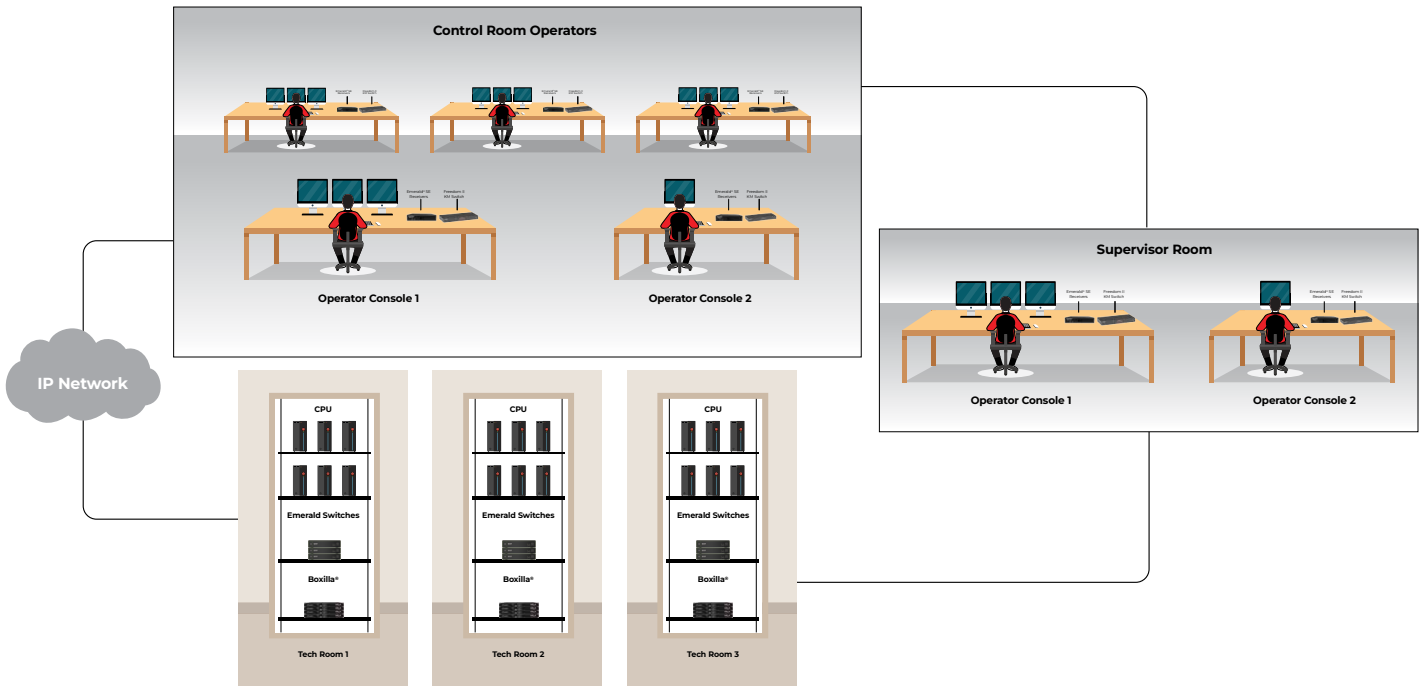
Boxilla managers are installed in a redundant setup within the data center to monitor and control the complete system. Administrators can configure and manage the system either from their workspace or using their laptop and the Emerald Remote App from anywhere. Boxilla provides clear and easy-to-understand dashboards for monitoring the system and executing predictive activities to maintain a stable operation. The customer likes the fact that even in the unlikely event that both Boxilla managers fail, access via the Emerald units continues to function without interruption and without restrictions.

The ATCC control room features an open office design with multiple desks featuring multiple monitors. Each operator desk is connected to the remote system through Emerald SE receivers in a redundant configuration. Additional Freedom KM switches allow operators error-free and fast switching simply by moving the mouse to the new target monitor.

Both ATCCs feature the same system architecture, following the client's request for a standardized efficient management, control, and maintenance. The overall application consists of more than 100 endpoints (systems and operator desks) unified under the Emerald IP-platform.



ATCC Control Room



THE RESULT

The resulting system met all of the customer's original stipulations: they now have a standardized, secure, and redundant solution to support the ATCCs. Emerald and Boxilla are easy to understand and use, which also improved the training of operators and administrators across both locations. Trusted Black Box solutions experts accompanied the project from start to finish. The customer appreciated the level of support and invited the Black Box team onsite to see the final deployments in action.

The Black Box account manager commented, "Our key differentiator was an IP-based KVM solution. This is an existing customer with whom we have a great relationship. They had a lot of hesitation regarding redundancy, but we built a redundant solution into our quote. IP-based KVM functionality with security, high redundancy, unified system access, and room for upgrades were their demands and we naturally chose our proven Emerald KVM platform, which could handle their demands. The customer will gain a much smoother workflow and overview of all of their functions with the Emerald KVM solution."

Benefits for Future Expansion

While the Emerald solution fully meets the customer requirements, its IP-based architecture and component choice also allows extra benefits for future expansion.

- An interconnection between both ATCCs over IP/dark fiber will be also supported by Emerald. With this upgrade, each ATCC would be able to monitor the complete air space and take over control from the other ATCC if needed, adding another level of redundancy to our system.
- Full interoperability between 4K and HD videos enables a cost-efficient upgrade to 4K DisplayPort video only where it is needed and without any access limitation for HD users.
- The Emerald DESKVUE receiver allows multi-monitor/multiview setups with instant switching between 16 instead of 4 selected systems. These setups can be custom configured to meet the unique needs of individual operators.
- An implementation of virtual machines does not require any costs for additional Emerald hardware (transmitters). The system comes VM-ready.

ABOUT BLACK BOX

Black Box® is a trusted IT solutions provider delivering cutting-edge technology products and world-class consulting services to businesses across the globe in every industry. The breadth of our global reach and depth of our expertise accelerate customer success by bringing people, ideas, and technology together to solve real-world business problems.

