

Hong Kong Harbour

The world's most advanced vessel tracking center relies on IHSE KVM matrix system

The Customer

SAAB Technologies, Intronics and IHSE have joined forces together to build Hong Kong's Vessel Tracking Center; the most advanced in the world. In November 2015, IHSE delivered equipment to the center which included the Draco ultra DisplayPort KVM extender, with its unique ability to transfer UHD video at 4K/60 Hz in full color 4:4:4 over a single fiber cable.

The Challenge

In April 2015, Arno Roefs, lead system engineer at SAAB Technologies, was developing a comprehensive solution for the Hong Kong Vessel Tracking Centre. The requirement was to detect maritime activity on radar images and register and follow vessel movements within a completely flexible infrastructure. He contacted Dutch networking and transmission expert, Intronics, for assistance in transmitting UHD images over long distances.

The Solution

Hong Kong Harbor plays an important role in China's international trading activities. Each year about 200,000 ships enter the port, handling 300 million tons of cargo in containers equivalent to 22 million TEU (Twenty Foot Equivalent Unit), making Hong Kong the fourth largest container port in the world. SAAB Technologies was commissioned to harmonize all information facilities between shore and ships in the harbor from a central control station.



KCCS control tower

To achieve this, both the Hong Kong Vessel Tracking Center and the Kwai Chung Marine Traffic Control Station (KCCS) were equipped with IHSE's KVM equipment for the extension and switching of keyboard, video and mouse signals over long distances.

The two locations operate together to monitor all shipping within the busy waters. Each vessel entering the harbor has its own defined route and the VTC controls their movements via radio. The VTC consists of six operator desks and one supervisor desk. Each desk includes three, 32 inch NEC PA322 UHD 10-bit IPS monitors with IGZO technology, capable of 4K, 60Hz operation, two or three 23 inch monitors and a single keyboard and mouse. The KCCS is an imposing 11-floor tower which lies on the opposite side of the harbor, with similarly designed operator workstations located on the 10th floor.



Locations of VTC and KCCS

The mission-critical monitoring and control computers are housed in secure and environmentally-controlled computer equipment rooms, some distance from the operator screens. IHSE Draco compact KVM matrix switches enable direct connection of each workstation to these computers, allowing operators undelayed and uncorrupted video and audio streams and enabling them to instantly switch between tasks as conditions change. Operators interact with the computers as though the devices were alongside their own desks.

“ Together we have created and delivered a flexible infrastructure in which various functions are integrated into one system. Users can switch between sources and displays and view information at a resolution of 4k @ 60Hz.

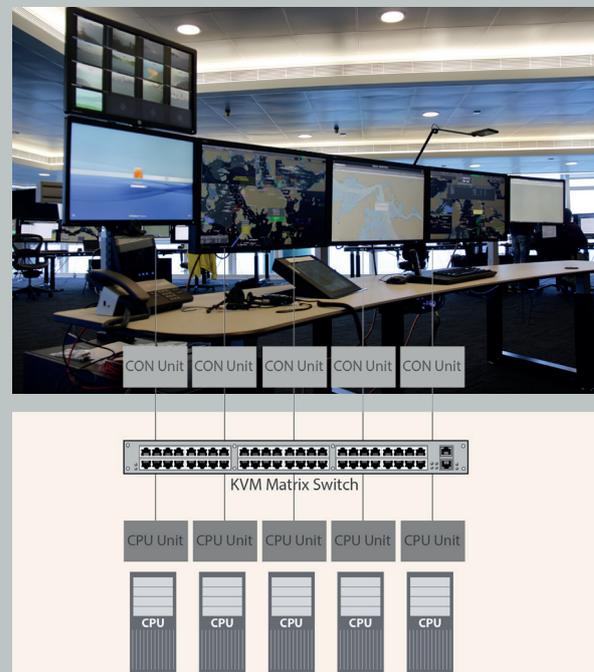
Wim van de Gein, Project Manager at Intronic

A Draco U-switch at each station enables a single mouse and keyboard operation to be used over several independent displays, reducing desk clutter to a minimum and maximizing operator efficiency and responsiveness: in high-stress situations requiring rapid response, operators do not have the time to search for the correct keyboard and mouse amongst many on their desk. Extension of the workstations to the distant server room is achieved over fiber or Cat 6 cabling.

The Benefit

To meet the design specifications for this installation, IHSE developed custom firmware for the Draco U-Switch which allows free configuration of multi-screen monitors. This permits different screen orientations and sizes to be used. Operators can switch and operate applications by single keyboard command or mouse movement across the set of screens.

Functional Diagram



KVM products in use

- > Draco tera compact matrix switches
- > Draco ultra DP1.2 extenders
- > Draco U-Switches

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