



Project reference

Dutch Highways

Customer

The Dutch Ministry of Transport, Public Works and Water Management (Netherlands)

Integrators

GTI
Imtech Projects

Technology

IP-based network

Market

Transportation - Traffic

Challenge

Implement a CCTV system over IP for all the highways and waterways in the southwestern region of the Netherlands

Solution

Siqura encoders and decoders

Designing and deploying an infallible system.

Every year more than 400 million tons of cargo go through the Port of Rotterdam, making it one of the world's most dynamic and influential centers of economic activity. It goes without saying then that goods need to be able to pass through this economic axis as smoothly and efficiently as possible. It will therefore come as no surprise that the maritime and vehicular traffic management system in this region was once an item of acute interest to all parties involved; the effectiveness of the Port of Rotterdam relies, namely, on the proficient and fluid transportation of freight.

Five years ago, the Dutch Ministry of Transport, Public Works and Water Management (RWS) solicited for a scalable, future-proof solution with crystal clear, real-time images, and incredibly high service availability capabilities. Siqura, along with two systems integrators, GTI and Imtech Projects, took on this challenge, and a project of nigh unfathomable originality commenced.

An innovative answer

Siqura was asked to design and deploy a multi-service network capable of servicing up to 600 DVD-quality video inputs and outputs, 144 audio connections, LAN data, and an array of telemetry. The availability of each service had to be at least 99.8%, and the network needed to be upgradeable, durable, and, naturally, reasonably priced. The network also needed to be redundant, requiring a complete

recovery of all the other services, such as video, audio, and data streams within a fraction of a second. Siqura became responsible for the design, installation, and commissioning of the complete network system, which ultimately came to include an array of equipment and technology, from encoders, access switches, and routers to virtual matrix software.

To meet the very high video-quality and low-latency requirements, Siqura chose to enlist its Siqura video servers, which convert MPEG-2 video, audio, data, and dry contact signals to individual IP streams. In order to effectively manage the extensive range of streams required, all video, audio, and data streams are sent to a central router inside the traffic management building. By using multicast for the video streams, IGMP snooping in the switches, and PIM in the routers, video switching and routing is executed entirely by the network. This allows the fifteen personalized video walls at the control center to display up to 600 images simultaneously. While this large number of streams initially proved to put an extra strain on the LAN, especially on the central router, careful design was able to balance the load through distributing the bandwidth burden between the switches.





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Ensuring success

From the concept phase of the project through to the writing of the tender documents, RWS always realized the potential risks that were involved in the application of novel technology. Therefore, they insisted on an extensive testing program, spanning every phase of the project, from proof-of-concept testing at the outset through to various integration and integral on-site tests.

Siquira played a proactive role in testing the integration of the third-party equipment and software to ensure trouble-free interoperability. In an extensive proof-of-concept testing program, all the required functionalities were successfully met, including conditions regarding latency, video quality at 8 or 10 Mb/s, compatibility with a Barco video wall, and Siquira's ability to design a GBE network that was optimized for IP video.

A project to be proud of

In one of the busiest and most financially significant regions of the world, RWS needed a reliable, centralized traffic management system that could handle both the nautical and terrestrial transport routes of the area 24/7, 365 days a year. Siquira stepped up to the plate and took on this challenge, inventing a cutting-edge IP video network system that proved itself both in testing and implementation. Since November 1, 2005, the traffic management center has been fully operational to the complete satisfaction of RWS, and this pioneering project continues today to streamline traffic on every road and waterway throughout this highly critical and economically influential corner of the world.

