



Allied Telesis Provides High Availability for Urban Monorail

Kitakyushu Urban Monorail Co., Ltd., in Japan, selects a new high-performing Allied Telesis solution.

Summary

Kitakyushu Urban Monorail Co., Ltd.

Industry: Transport
Location: Kitakyushu City, Japan
Established: 1976

Challenge

The urban monorail required a new network to run their new generation ticketing system, and improve the customer experience.

Solution

Allied Telesis provided a brand new, centrally-managed network solution utilizing leading-edge technology.

Success

Kitakyushu Monorail's new network fully supports the new ticketing system. The monorail now enjoys simplified management, and commuting is easier and more efficient for their customers.

Challenge: improving the customer experience

Kitakyushu Urban Monorail connects 13 stations across a distance of 8.8km, from Kokura station to Kikugaoka station in Kitakyushu City, Fukuoka, Japan. It was the first urban monorail in Japan. An average of 31,000 people use the monorail daily, including students, office workers, and visitors to the Kokura Racecourse.

The company acknowledges its responsibility as an infrastructure provider serving many users, and operates under the motto "Safety, Punctuality, and Comfort". Kitakyushu Monorail has a very low occurrence of accidents, as it runs above ground, and has no railway crossings. In fact, the monorail has never had a major accident. It is also very reliable—it can continue to operate under extreme weather conditions such as severe snow, when other transportation services become paralyzed.

When the monorail first opened, all of its service equipment, including automatic ticket gates, ticket machines, and equipment at ticket counters, was connected via an online network. However, this later developed issues, and data from service equipment was then carried using portable media devices. Later, the company adapted their stations' security monitoring network to transmit data, but this was also problematic.



"Everything including the service equipment on each station, the PCs, the network, and the PC in headquarters used for aggregating data, came from different vendors. When a failure occurred, it was difficult to analyze and resolve."

Mr. Tsutomu Yanase, General Manager of the Facilities Division at Kitakyushu Urban Monorail Co., Ltd.

To improve the customer experience, the company introduced rechargeable smart cards and Quick Response (QR) tickets in October of 2015. With smart cards, a simple swipe at the gate is all that is required to pay and board the monorail system. "Unlike magnetic tickets, QR tickets allow passengers to pass the gate just by touching the printed QR code on the gate. We are the first in Japan to introduce the combination of rechargeable smart cards and QR tickets, which have nationwide compatibility." said Mr. Yanase.

Partner profile

OMRON Field Engineering Kyushu Co., Ltd.

Main office: 4th Floor, R&F Center
Building, 1-2-12
Higashihiie, Hakata-ku,
Fukuoka City, Japan
Established: November 11th, 1975
Capital: 40 million yen
(March 2015)

Overview

A member of the OFE Group with 140 branches nationwide and 1,200 engineers, the company provides engineering/field/call center services to Kyushu area clients 24 hours a day, 365 days a year.

<http://www.omron-fe.co.jp/kyushu/>

All of Kitakyushu Monorail's service equipment had to be redesigned and replaced in order to support smart cards and QR tickets. In addition, a new network was required to connect the new equipment at each station to headquarters, and facilitate highly reliable communication of ticketing data.

The monorail also wanted to centrally manage its new network, as it would be distributed across the 8.8kms and 13 stations that make up the monorail system.

Solution: Allied Telesis products provide high availability and reliability

To meet their requirements, Mr. Yanase consulted OMRON Field Engineering Kyushu Co., Ltd. (OFE Kyushu). The monorail had chosen OMRON to provide their new service and network equipment.

For the core, distribution and edge switches, OFE Kyushu proposed Allied Telesis network products. Mr. Yusuke Nakahara of OFE Kyushu explains, "In a transportation network infrastructure, there is no room for failure – and if a failure does occur, it must be immediately fixed. Prompt failure response and excellent network service were our main requirements. We proposed Allied Telesis products since we had partnered with them many times for network construction, and felt they were extremely reliable."

A highly resilient network design was employed to ensure that the electronic ticketing equipment and gates would support the thousands of daily passengers.

An Allied Telesis SwitchBlade® x908 modular core switch and x610 Series distribution switches use Virtual Chassis Stacking™ (VCStack) to form a single virtual device out of multiple units. This provides high performance data transfer, and when partnered with multiple fiber connections between devices, means the network has no single point of failure for maximum uptime. Allied Telesis x210 Series switches at the edge of the network connect gate, ticketing and other system infrastructure.

The AlliedView™ Network Management System (NMS) has been employed to centrally manage the entire network.

Success: Kitakyushu Monorail enjoys peace of mind with new network

The network construction work led by OFE Kyushu went very well, including the installation of network equipment. In March 2015, new service equipment was installed at the Heiwa-dori station to create a training and test environment. The site was used



“Allied Telesis have met all of our needs and more. They were also very flexible in terms of maintenance and support. We are more than happy with the service and products Allied Telesis provided.”

Mr. Yanase

for orientation and staff training, as well as for network performance tests and changes in configuration ahead of the official launch.

“For the Heiwa-dori station test environment, we set up a virtual station on the network. The products from Allied Telesis were very easy to use, and we had no trouble configuring the equipment to meet our needs.” said Ms. Kanae Hamawaki of OFE Kyushu.

The new ticket machines, automatic gates, and network equipment were all installed at the end of September 2015. In total, 40 ticket machines and 52 ticket gates were replaced across the 13 monorail stations.

Allied Telesis supported the new equipment rollout with additional backup equipment onsite, to ensure no downtime would be experienced during the changeover. However, the backup equipment was not needed as the switchover went extremely smoothly. Mr. Yanase praised Allied Telesis, and said “An equipment failure right after the launch would have been critical. Everything went well, but the fact that Allied Telesis had prepared backup equipment was greatly reassuring for us, as we moved to the new system which needed to instantly support many thousands of daily passengers. It alleviated our worries, and gave us great security.”

Easy to manage new network with smart cards in widespread use

Kitakyushu Monorail successfully introduced the new equipment and the shift to smart cards. On the first day of the new system, the use of smart cards was around 40%, and after only 2 weeks had already increased to 70%, making commuting on the monorail system an even easier experience.

Both the station equipment and network have been operating smoothly since the official launch on October 1st. OFE Kyushu centrally monitor and manage the network with ease thanks to Alliedview NMS. Mr. Nakahara said, “We can see visually whether there are any issues at all. NMS alerts us when it detects a fault, which is very helpful.”

About Allied Telesis

For nearly 30 years, Allied Telesis has been delivering reliable, intelligent connectivity for everything from enterprise organizations to complex, critical infrastructure projects around the globe.

In a world moving toward Smart Cities and the Internet of Things, networks must evolve rapidly to meet new challenges. Allied Telesis smart technologies, such as Allied Telesis Management Framework™ (AMF) and Enterprise SDN, ensure that network evolution can keep pace, and deliver efficient and secure solutions for people, organizations, and “things”—both now and into the future.

Allied Telesis is recognized for innovating the way in which services and applications are delivered and managed, resulting in increased value and lower operating costs.

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