Simplified Commuting and Superior Passenger Experience with Smart Payment System at Santa Clara VTA

Santa Clara Valley Transportation Authority (VTA) gets a future-proof and efficient Allied Telesis solution to enable its new smart fare system.

Customer: Santa Clara Valley Transportation Authority (VTA)

Industry: Transportation
Location: Santa Clara, USA

Challenge

When the Santa Clara VTA launched the use of Clipper® smart cards on its bus and light rail systems, it was time to update their network. Clipper is a reloadable, contactless card for electronic fare payment in the San Francisco Bay Area. The system makes commuting easy by allowing passengers to board and transfer with the mere swipe of a card.

This new technology required a new, streamlined and highly-reliable network solution, capable of connecting Clipper kiosks and card-scanning devices across 42.2 miles of VTA railway tracks connecting the Bay Area Rapid Transit (BART), Caltrain, Amtrak and Altamont Corridor Express (ACE) services.

VTA's legacy network had numerous issues. Over time, numerous stopgap fixes and adhoc hardware additions had resulted in a network comprised of disparate equipment types from numerous vendors. Plus, there was little documentation, increasing the time needed to troubleshoot.

Unmanaged media converters were used in lieu of switched infrastructure, which restricted visibility and growth and prevented VTA from both fixing problems and expanding its network. With no ability to predict or prevent network failures, the network had become extremely time consuming and expensive to run. It was time for a complete overhaul.

VTA needed a reliable and scalable core-to-edge network solution—to both support the new payment system and accommodate projected increases in ridership.

> "Train platforms present an extremely challenging environment—vibration and other environmental factors require highly-ruggedized products. Only Allied Telesis was able to work with us to deliver modern, customized switch products that were form-fitted to the Clipper card pole, and met our stringent drop, kick and bump criteria."
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> **Richard Bertalan**
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> *Technology Manager, Santa Clara Valley Transportation Authority*

Solution

VTA selected a cutting-edge Allied Telesis solution. From initial design to final deployment, VTA entrusted Allied Telesis to implement a new network that could eaily handle the demands of the Clipper system, meeting its rigorous requirements both now and well into the future.

Why Allied Telesis?

Allied Telesis offered a unique solution, which:

- understood the challenges and accommodated VTA's technical requirements, budget, and project timeline
- was ruggedized and resilient to meet the rigorous requirements of outdoor installations
- offered superior support, with staff working alongside VTA technical team to provide training and meet critical deadlines

Allied Telesis worked in close collaboration with VTA to complete a network health assessment, provide a set of recommendations, and deliver an implementation plan that limited outages to a single machine at any given time. The result: a resilient, efficient and scalable network solution servicing 62 light rail stations.

The new network

The resilient new network incorporates Gigabit Ethernet switches at the stations using Virtual Chassis Stacking (VCStack™) to make a single virtual device out of multiple units, ensuring device and path redundancy. These are connected to the ticket machines through industrial edge switches, with extended temperature operation for high reliability. Fiber cabling provides high-speed connectivity between the various train station platforms.

The Allied Telesis team provided hands-on training as part of the initial network deployment, and supported VTA personnel to complete the remaining installation. The complete network changeover minimized disruption to VTA passengers by keeping the ticketing system fully operational.

Success

With the Clipper system successfully implemented, VTA now meets today's consumer expectations around electronic and mobile payment options, and provides a superior passenger experience.

The Allied Telesis network at the heart of the Clipper card system is both high performing and future-proof. VTA can easily expand as required to add services to further enhance customer satisfaction—such as additional Clipper card kiosks, Wi-Fi on moving trains, VoIP emergency phones, and digital real-time information signage and/or advertising.

VTA no longer needs to dispatch a crew of technicians every time an issue arises. With modern, managed network products and ongoing training and support from Allied Telesis, staff can troubleshoot issues remotely. VTA can deploy its valuable personnel and resources more efficiently, which has substantially increased the operational efficiency of this critical network.

Customer

Santa Clara Valley Transit Authority Serving the high-tech capital of Silicon Valley, VTA's mission is to provide sustainable and accessible transportation, including bus, light rail and paratransit services, to more than 42 million passengers a year. VTA is also responsible for transportation planning, congestion management and designing and constructing new highway, pedestrian and cycle-way projects throughout Santa Clara.

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