

Transforming Network Rollouts

How a Tier-1 CSP Streamlined Activation and Assurance with VisionWorks

Introduction

This North American commercial service provider (CSP) has long been at the forefront of leveraging technology to streamline and automate cell tower and service activation. The company initially faced high costs due to manual testing, which required specialized equipment and extensive technician time. This process often led to errors in certification and frequent unplanned truck rolls to resolve outstanding issues. To address these challenges, the CSP implemented Keysight VisionWorks, transforming its service activation process. This solution reduced activation testing times by more than 70 percent, minimized certification errors, and significantly reduced unplanned expenses.

Manual Testing Challenges

In its automation journey, the CSP has relied on the VisionWorks service assurance solution for more than 20 years to optimize its network deployment processes. Prior to using VisionWorks, they handled activation and troubleshooting of cell towers and services like most CSPs with technicians being deployed and manually testing to certify and troubleshoot activation and performance.

As part of activating the cell tower, the field technician conducted a service activation test, which required them to test to verify the circuit was correctly installed, functioned, and worked at line rate. This process was manual and required specialized physical equipment to be purchased for conducting these specific tests.

With field technicians under constant pressure to conduct multiple activations daily across various locations, spending excessive time conducting and waiting for test results wasn't practical or sustainable. The biggest challenge was that manual inefficiencies and time pressures led to setup issues, which impacted service performance. These issues often led to instances where another technician was dispatched to return to the site to diagnose and fix unresolved problems. These retrijs, also known as repair dispatches, cost the carrier millions of dollars in unplanned truck rolls and hours technicians spent manually testing, uploading and analyzing results.

The CSP needed a solution that could streamline the activation process, eliminate retrijs, and enhance overall activation efficiency.

Highlights

- Millions in CapEx savings from reduced field test equipment use
- Reduces installation times by automating service activation and executing tests seven to 10 times faster
- 80 percent of tickets diagnosed via automated testing
- Fewer repair dispatches and repeat visits

Smarter, Faster Activations

The CSP implemented Keysight VisionWorks and its test agents as a comprehensive solution for automating and optimizing network activation and testing across all deployments, including backhaul, fronthaul, and fiber for enterprise business customers.

VisionWorks enabled the CSP to conduct automated service activation tests at line rate, generating a network birth certificate that verified all parameters were met and the circuit was functioning optimally. These certificates were stored in the CSP's inventory database, providing a permanent record of installation quality and compliance. The seamless integration of VisionWorks into existing testing systems and processes allowed field technicians to access test results and troubleshooting insights directly, without requiring additional interfaces, streamlining adoption and minimizing complexity.

The automated testing process could be initiated with a simple text message from a field technician, enabling VisionWorks to run service activation tests in the background while technicians attended to other critical tasks, such as onsite construction cleanup. Running these steps concurrently significantly reduced activation times. The reliable, automated, and consistent testing conducted by VisionWorks ensured that towers and circuits came online without issues. This dramatically reduced retriptions, saving the CSP millions of dollars, and enabled the company to execute network activation testing seven to 10 times faster.

As a result of the time and cost savings, the CSP has integrated VisionWorks into their standard bill of materials (BOM) for any fiber build, whether it's additional backhaul, fronthaul, or fiber for enterprise business. As a key component of the BOM, VisionWorks is seamlessly incorporated into the CSP's network expansion projects.

Automating Assurance End-to-End

The CSP's use of VisionWorks has expanded from activating cell sites and networks to supporting all stages of the services assurance lifecycle, including performance monitoring. The solution is used to continuously assess and manage the real-time performance of the network. This is achieved through ongoing tests — such as pinging, Two-Way Active Measurement Protocol (TWAMP), and the transmission of various messaging types — to all the CSP's cell site towers, baseband units (BBUs), and even infrastructure located behind the Service Interworking and Demarcation (SIAD) device. The resulting performance metrics are collected as data points across different classes of service and fed into the VisionWorks platform, enabling the CSP to monitor the health of every tower across the United States — and beyond.

In addition to activation and performance monitoring, VisionWorks supports routine performance checks to ensure continued optimal operation, provides detailed service quality insights, and facilitates faster troubleshooting as issues arise.

Before implementing VisionWorks, when business customers complained service-level agreements (SLAs) were not being met or service was down, a ticket was created and a service technician deployed to manually test the circuit with a handset, upload results, and analyze the issue. Now, as soon as tickets are received by the Network Operation Center, VisionWorks is triggered to automatically test and validate whether the circuit is down. The test analysis and results are nearly instantaneous, with 80 percent of tickets being validated and diagnosed by VisionWorks automated testing. With the results in hand, the technician can quickly and confidently call the customer and immediately work on the next steps to resolve the issue, if necessary. The automation and centralization of network troubleshooting allows the CSP to resolve issues days to hours sooner at a fraction of the cost.

Conclusion

Through the deployment of Keysight VisionWorks, the CSP overcame the inefficiencies and costs associated with its manual cell tower activation process. By automating service activation tests and integrating them seamlessly into existing network management workflows, VisionWorks reduced activation times, eliminated costly retrips, and ensured consistent network quality. This transformative solution not only accelerated the CSP's network rollouts but also set a new standard for operational efficiency and reliability. With VisionWorks supporting the entire service assurance lifecycle, the CSP is well-positioned to deliver faster, more dependable services to meet the growing demands of its customers.

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