NITRO Wireless
Digital Twin Solutions

Simplifying Testing in an Increasingly Complex Network

The Challenge Facing Operators

New architectures, growing network complexity, frequent software updates and managing cybersecurity are just some of the challenges that operators need to manage. Not to mention how best to utilize AI/ML and maximize the returns from open and virtualized architectures, edge computing and cloud offload. With so many variables, testing this effectively and making sense of the large amounts of performance data that the network generates is a major headache.

The VIAVI Solution

VIAVI TM500 and TeraVM solutions emulate base stations, core networks and real-world traffic. These can be used to simulate, predict and forecast the behavior of its real-world counterpart. The VIAVI Digital Twins combine tools such as RAN and Core emulators, assurance solutions, realistic traffic scenarios, and cyber threats to mirror an operator's network in the lab, allowing network changes and challenges to be planned and implemented and results analyzed before action is taken on the live network.

Business Impact

Using Digital Twins can reduce business risk in multiple ways. Test software updates and new services in a safe environment pre-empt failures when deployed in the live network. Run 'what if' analysis without the risks of experimenting using real subscribers. War game cyber-attacks and mitigation strategies to understand the exact consequences on the network and subscribers. Test automation of network operations, while driving intelligent and business-based decision-making to maximize ROI.

Sample Use Cases

Use Case 1: SW patch roll out. Prior to rolling out a SW patch in a network, run automated scenarios over a weekend on a digital twin of the network. Run realistic traffic volumes, RAN scenarios reflective of the live network and ensure no issues arise.

Use Case 2: Cyberthreat detection. New cyberthreats are uncovered daily with many directly related to SW running in a telco network. Use the Digital Twin to add cyber malware and threats in with real traffic to ensure the firewalls continue to protect.

VIAVI Benefits

✓ **Be Confident that the Digital Twin is Realistic**
TM500 is the de facto Base Station test tool that has been proven against almost all manufacturers.

✓ **Prove AI/ML Algorithms and Network Performance Applications**
VIAVI RAN Scenario Generator allows creation of large amounts of real-world traffic models to train and validate app vendors, operators and labs.

✓ **Comprehensive Emulation of All Network Elements**
VIAVI emulates UE, BTS, RAN, Core, Core Elements, O-DU, O-CU, O-RU and RIC.

✓ **Real Traffic Generation and Cyberthreats**
Scale to millions of users with tailored traffic mix and add cyber threats from up-to-date database.

VIAVI Solutions

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