NITRO Wireless
5G SA Core Test

A TeraVM Core Test Application for
Optional SBA Components Emulation

The Challenge

5G SA is rapidly gaining momentum with 60 networks in place as of September 2023. And although the major 5G SA core components of AMF, SMF and UPF are functionally stable questions of capacity, overall throughput and interworking of 4G and 5G components still need to be addressed to support widescale commercial deployment.

The VIAVI Solution

TeraVM Core Test for 5G SA provides end-to-end node wraparound and node emulation to support a wide range of functional and performance testing of either complete or partial 5G SA Core during development and pre-deployment phases. For example, for performance and end-to-end testing some nodes may not be available so TeraVM can emulate the remaining nodes to avoid delays in testing.

TeraVM Core Test gives engineers a controllable and repeatable test environment that helps ensure that performance specifications are met and that 5G interoperates smoothly with the legacy LTE network. TeraVM can be used from early development testing through to pre-deployment testing using the same test cases to ensure consistency over the project lifecycle.

Business Impact

5G SA underpins new revenue streams targeting different business verticals including Private 5G. 44% of existing Private 5G deployments are for smart manufacturing which typically requires signing up to strict SLAs. To ensure no disruption of revenue, testing is needed to ensure that customer commitments can be met. Additionally, a new architecture may create unforeseen problems that could lead to core network failures. Comprehensive testing is important to mitigate these risks.
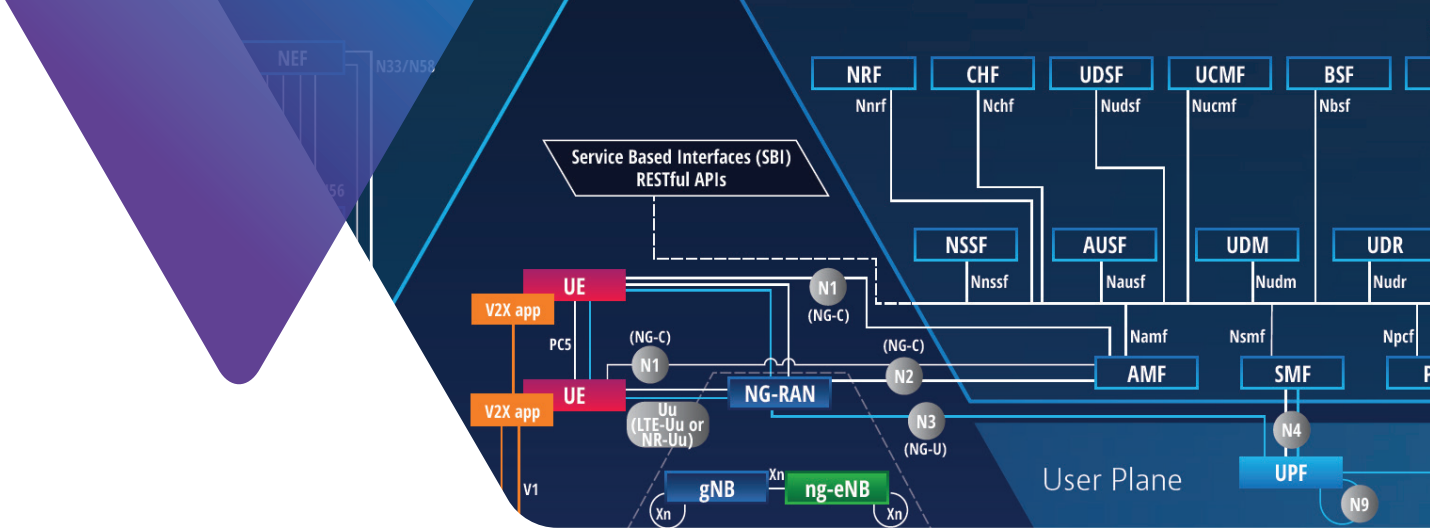
Sample Use Cases

Use Case 1: Performance testing with network slicing. Emulate the Core Network and RAN to stress test individual slices to ensure they will meet performance and latency conditions defined by customer SLAs.

Use Case 2: LTE and NR interworking. Many SBA components also have a legacy LTE equivalent, for example, PCF and PCRF. Ensure that the two components do not cause a conflict in network management which then disrupts end the user experience.

VIAVI Benefits

✓ **Optional Core Component Emulators**

Testing and project deadlines are not contingent on the entire SA Core being immediately available, reducing risk of missing deadlines.

✓ **Cloud-based Testing**

Many operators are deploying 5G SA in hybrid private/public clouds. Measuring the performance as the load shifts allows the network performance and cloud opex to be optimized.

✓ **Highly Scalable**

Core test can rack and stack to scale to achieve millions of UEs and thousands of gNB emulation to test against both current and future network load.

✓ **Not Constrained by Physical Location of Test Assets**

TeraVM Core Tester is licensed for cloud or virtualized deployment over multiple locations meaning that test architectures align to network architectures to maximize test efficiency.

Get started with VIAVI 5G Core Test

Visit: viavisolutions.com/products/teravm-core-test

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Contact Us   **+1 844 GO VIAVI**
                        (+1 844 468 4284)

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