Solution Brief

Deliver 5G access performance and assure customer experience where it matters

Enabling efficient 5G upgrades and automated service launches

With more than 100 5G non-standalone (NSA) networks launched globally, the strategic direction, technical challenges, and performance characteristics of the primary 5G use cases and services are becoming clearer. Current 5G networks are largely built on existing 4G backhaul and an adapted evolved packet core (ePC), which serves both 4G and 5G sites.

The access network is at the front-end of customer experience and one of the most important parts of the mobile network in terms of impact on service quality. Operators are now working towards the next phase of 5G standalone networks that will enable advanced 5G ultra-reliable, massive IoT services and low-latency multi-access edge computing (MEC) services. As networks cloudify and move to open architectures, monitoring and virtualization must adapt to the new environments.

5G's service-based and distributed network architecture will require new levels of performance control and end-to-end visibility of services in order to meet strict performance SLAs. The additional complexity of managing virtualized network functions in distributed cell sites, small cell densification and automated service lifecycle management will present new granular requirements for monitoring, analytics and event correlation.

Challenges

5G is an exciting prospect for businesses, consumers and developers alike, if operators can create value for customers, innovate with partners, and deliver new services experiences and performance levels beyond just speed.

The new access model in 5G and the split of the baseband unit (BBU) to a more open and distributed RAN and access network architecture bring benefits as well as new challenges. From a high level view the new RAN and access network architecture and standards help to:

- introduce new market competition
- improve network and service performance
- optimize hardware and cost of ownership expenditures

5G access challenges:

- Even though there is a definition of how to implement the new 5G access modes, these are not currently widely adopted
- The new distributed access network and open multi-vendor approach introduce greater network complexity and challenges in managing the performance of diverse services
- From a cell site densification and transport perspective, there are more links to monitor and correlate with the service and architectural mesh

Having full visibility of the mobile access network is needed to understand performance bottlenecks that would hamper 5G roll-outs and the ability to meet strict SLAs. 4G networks are not going away, so having performance tools that work within existing operations and provide integrated visibility and control of 4G and 5G performance is important.

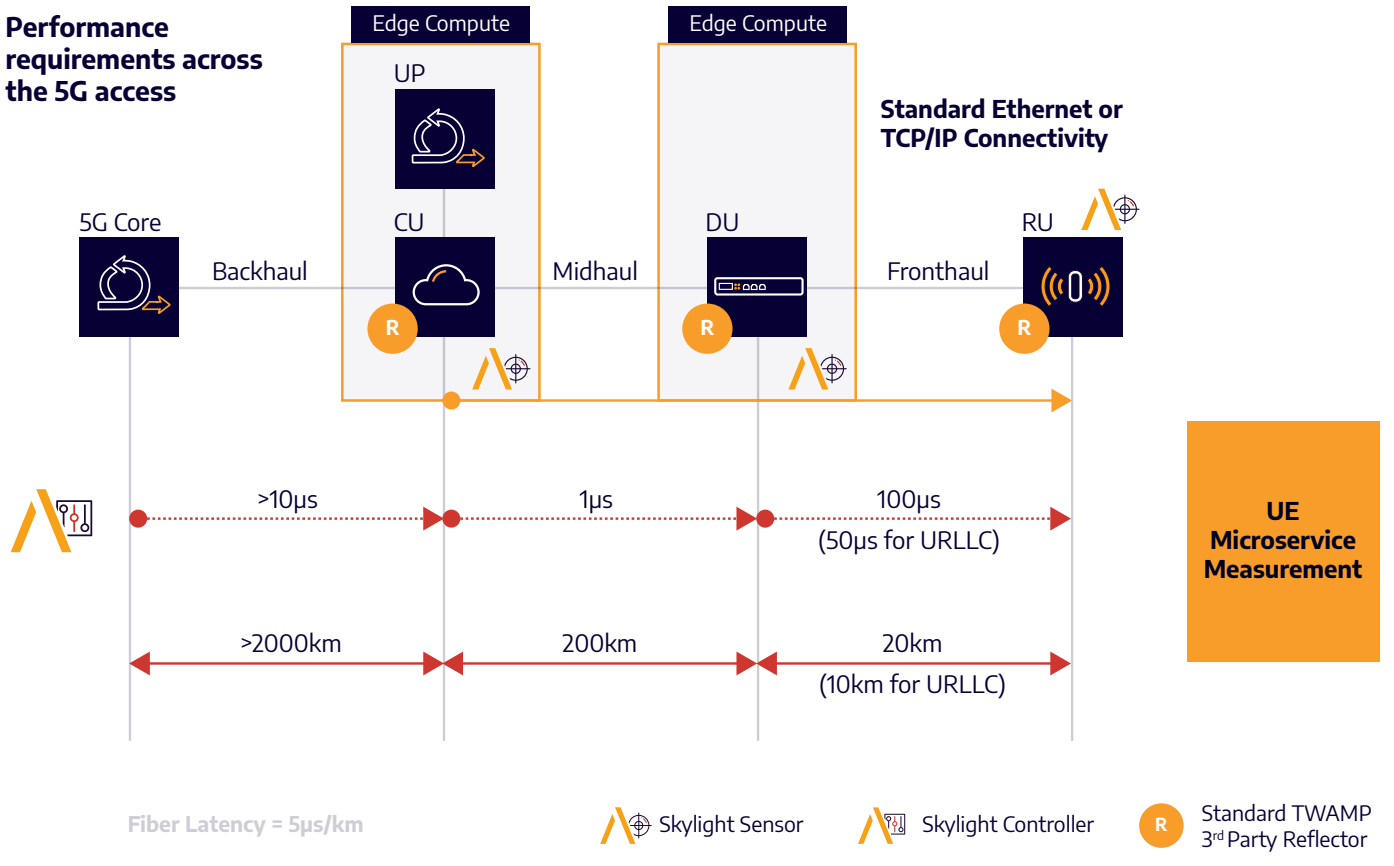
Deliver on 5G performance and customer experience with Accedian Skylight

Accedian Skylight provides fully automated discovery and deployment, initial service activation testing and highly granular in-life performance monitoring of new 5G services. The Skylight solution supports in-life monitoring for 3G, 4G and 5G services and fits seamlessly into existing operations for ease of management and operational cost savings.

With end-to-end 5G service monitoring of the access network, including third-party providers, you can be confident to offer advanced services and meet strict business SLAs. Operators that deliver on performance have a huge opportunity to take a lead on 5G services—differentiating on customer experience and winning trust from new enterprise customers. Cloud hyperscalers and application software developers will also play a role in the 5G services ecosystem and will require access and MEC-related SLAs from service providers.

Business benefits

- Deploy new 5G services faster and with confidence
- Reduce risk of new services fail and brand impact
- Differentiate on service quality with granular monitoring of KPIs
- Gain the confidence to meet strict SLAs with business customers
- Detect service degradations before customers are impacted
- Optimize capacity, deployment planning and mobile backhaul



Skylight offers a multi-layered approach to performance monitoring.

A flexible combination of software agents, hardware-assisted components, virtualized functions and smart SFP hardware that comprise its lightweight sensor layer. Unique and truly industry-first, 10Gbps compact SFP devices can be installed at cell sites to enable turn-up testing, bandwidth monitoring and 24/7 performance monitoring, all on a per-service basis.

A virtualized orchestration layer centralizes management and orchestration of the sensors, leveraging local controls and REST API automation. It can also feed data into third-party platforms for planning and troubleshooting. Skylight orchestrator automates the configuration and service provisioning and testing for fast service turn-up.

Skylight performance analytics combines data from all Skylight sensors and third-party sources into a single pane of glass. It offers machine learning-powered alerts and rapid troubleshooting for network and application performance issues. Real-time intelligent monitoring also helps to predict and automate fixes.

Skylight benefits for the 5G access network

Fast 5G service roll-out

- Seamlessly integrates with existing infrastructure and operations
- Fully automates discovery and deployment, fast turn-up and initial service activation testing, minimizing the number of site visits
- Transport issues can be detected and corrected to an optimal level before enabling live services

Unsurpassed performance

- Data granularity to 1 millisecond sampling and the ability to detect performance issues before and after network changes
- Lowest sample rate and highest accuracy in the industry for time-based KPIs
- End-to-end monitoring of Ethernet backhaul and AAVs and SLA validation, baseline performance of primary and secondary paths
- Supports eCPRI/CPRI/OBSAI protocol analysis & assurance/validation

Scale & performance

- A single SFP compute device can monitor thousands of destinations including physical and virtual infrastructure
- Supports billions of performance measurements every day

Automated provisioning and deployment

- Skylight orchestrator centrally manages all configurations, as well as intelligent auto-discovery and auto-provisioning

Machine learning and analytics

- Single pane of glass for visualization, reporting and analytics of all Accedian active and passive data plus third-party data
- Real-time telemetry feed of performance KPIs to SDN controllers and slice orchestrators can support closed-loop automation use cases

"Accedian Skylight has helped to reduce 5G site visits by 60% and accelerated 5G roll-outs in the process, increasing the number of sites that can be rolled-out in a day by 88%."

- Tier 1 mobile network operator

About Accedian

Accedian is the leader in performance analytics, cybersecurity threat detection and end user experience solutions, dedicated to providing our customers with the ability to assure and secure their digital infrastructure, while helping them to unlock the full productivity of their users.

Learn more at accedian.com

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