

'Lab-to-live' testing is critical for new 5G services

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Mobile operators must innovate more rapidly in order to take full advantage of what 5G offers

It is widely known that 5G is driving innovation on many fronts. By design, it addresses a broad market and brings in new service opportunities for both the B2B and B2B2C segments by supporting a diverse range of industry use cases. This is extremely important for mobile operators. The development of 5G technology is still in its early stages, and 5G core networks are only just starting to be deployed. However, expectations for what 5G can deliver are high, and any new services will come with stringent service-level agreements (SLAs). Mobile operators must deal with the complexity of new architecture while developing new services at a rapid pace in order to ensure that the networks and services offered meet customers' expectations.

The complexity and urgency of 5G mean that development cycles must become more agile

5G will also bring a wide array of complexities that should not be overlooked. The diverse range of industry use cases that 5G promises to support represents a significant increase in the complexity of testing required. Moreover, these use cases come with varying demands, such as requirements for a certain quality of service (QoS) or latency, which will inevitably result in specific SLAs.

The new 5G architecture will also increase network complexity. New standards and technology trends such as Open RAN, virtualisation and cloudification will be critical in enabling the next cycle of innovation at both the network and service level. However, these trends require the disaggregation of network functions in order to migrate them to the cloud and push them to the edge of the network. This is a significant departure from legacy networks.

This new complexity and the urgency to take full advantage of what 5G can offer mean that innovation must occur more quickly than for previous network generations. Development cycles must also become more agile. This requires a new approach to testing and validation that is able to support the increased cadence now required using microservices and DevOps approaches. A new paradigm of achieving continuous rapid validation supported by state-of-the-art automation is therefore required. The old model of batch-mode testing and releasing updates every 3–6 months must be replaced in order to support a steady stream of continuous changes and improvements. This requires a complete change in the traditional approach to testing, validation and deployment.

Next-generation testing and assurance solutions will be critical in enabling swift releases, meeting SLAs and ensuring QoE

Meeting stringent SLAs on a more complex and dynamic network while striving to develop new services will challenge operators like never before. Adopting the right testing and assurance strategies will help to mitigate this challenge and ensure a solid foundation for deployment, accelerate the time-to-market and foster a first-mover advantage.

The ability to proactively test services is essential for validating SLAs and guaranteeing a high QoS. Active testing is a critical component of this because it enables the development teams that are adding network functions or new services to assure the entire service lifecycle, from 'lab to live' (that is, from initial design and development through to live operations). Indeed, active testing of the live network will play a major role in supporting swift releases thanks to its ability to emulate real-world traffic to test the service before live traffic is available. Furthermore, active testing is 'always on', which means that it proactively identifies faults, potentially before the user has experienced them.

Service providers will measure factors that have the greatest impact on user experience as user experience monitoring becomes a key indicator of customer satisfaction. Active assurance provides real-time quality of experience (QoE) metrics that are essential for validating SLAs prior to service activation, while maintaining real-time, end-to-end visibility of the network.