ASSURING THE PROMISE OF 5G

Experience from Test, Trials & Deployments

5G Test & Measurement Equipment

Manoharan C P

Director – Sales Development, INDIA and SEA

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spirent
Promise. Assured.
Global Customers
1,500
Spirent Employees
1,444
Countries Served
50
Market Cap (Sept 5 2018)
$990 M
Exchange
LSE
Sales (2017)
$455 M
R&D Investment (2017)
$103 M
Symbol
SPT.L

Different Challenges in 5G Rollout...

Risks:
- ✓ Quality
- Security
- $ Cost

2017
1st standards

2018
1st deployments

2020+
original plans

5G

Market Acceleration

All Things to All Users

New Complexity

New Security Challenges

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Where best to focus....

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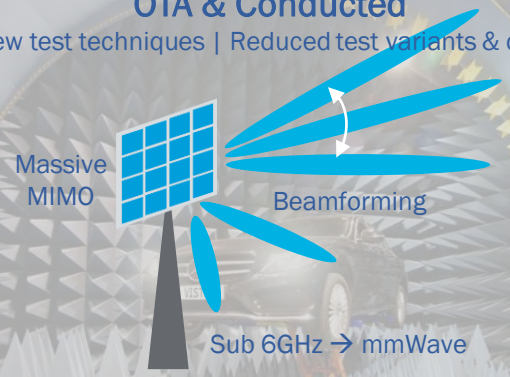
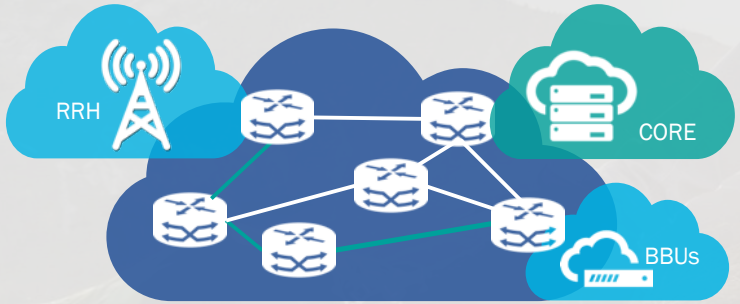
Simplify 5G

OTA & Conducted
New test techniques | Reduced test variants & costs



5G Radio

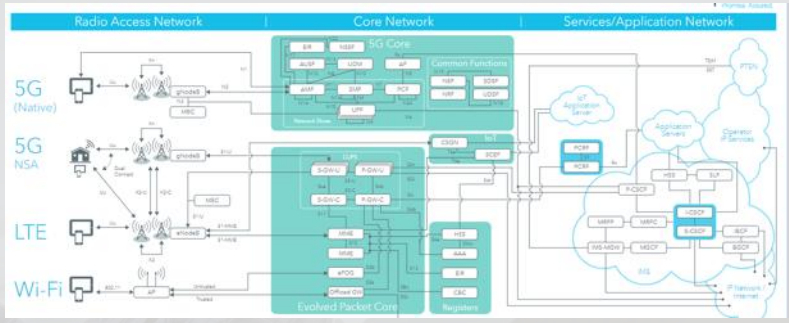
Multi-Speed Ethernet Connectivity
10 to 400G



5G Front & Backhaul

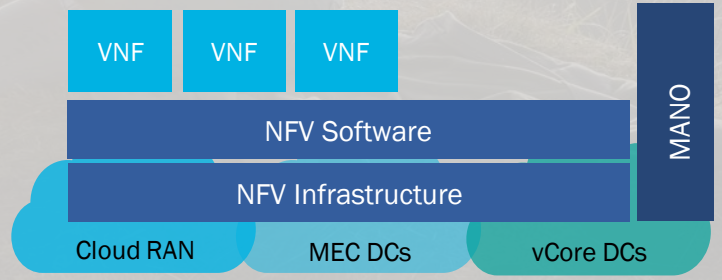
Accelerate 5G

Core Network Evolution
NR | Scale | Edge | Slicing



5G Core

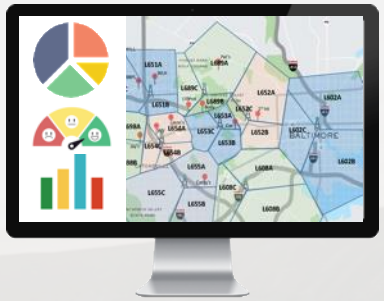
Multi-Vendor
Virtual Infrastructure | Service Chains | Lifecycle Management



5G NFVi

Assure 5G ✓

Perceived User Experience
Throughput | Latency | vMOS



5G User Experience

Performance
Location Accuracy | Handover | Audio & Video Quality

5G Devices

5G exacerbates Security risks

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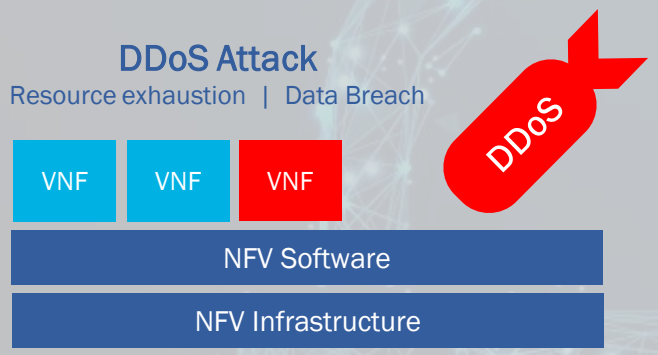
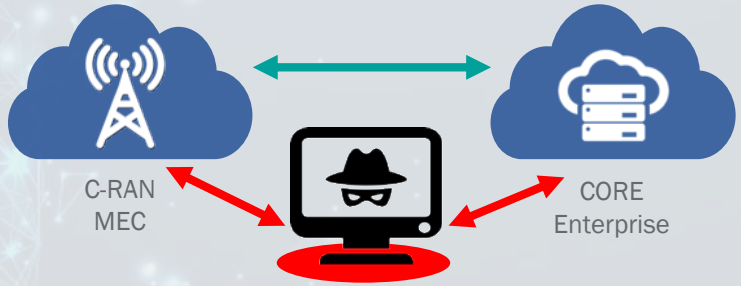
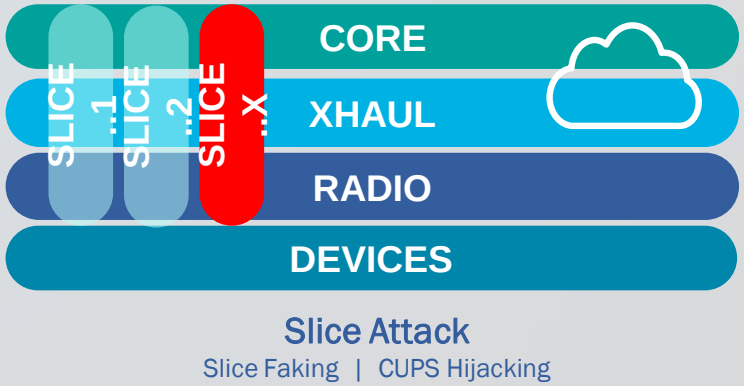


NFVi Attacks

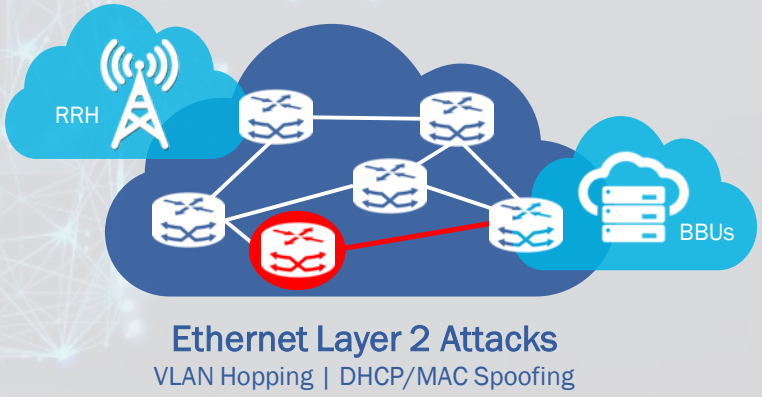


Edge Distribution Attacks



Network Slice Attacks

IoT Attacks



Ethernet Fronthaul Attacks

Security Gateway Attacks

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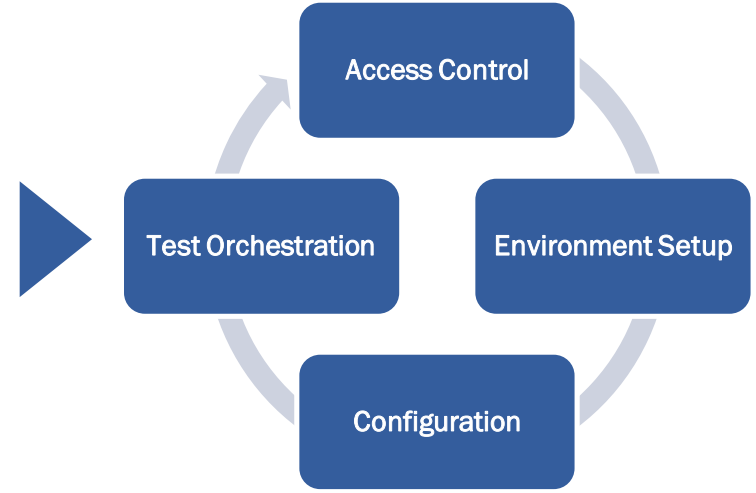
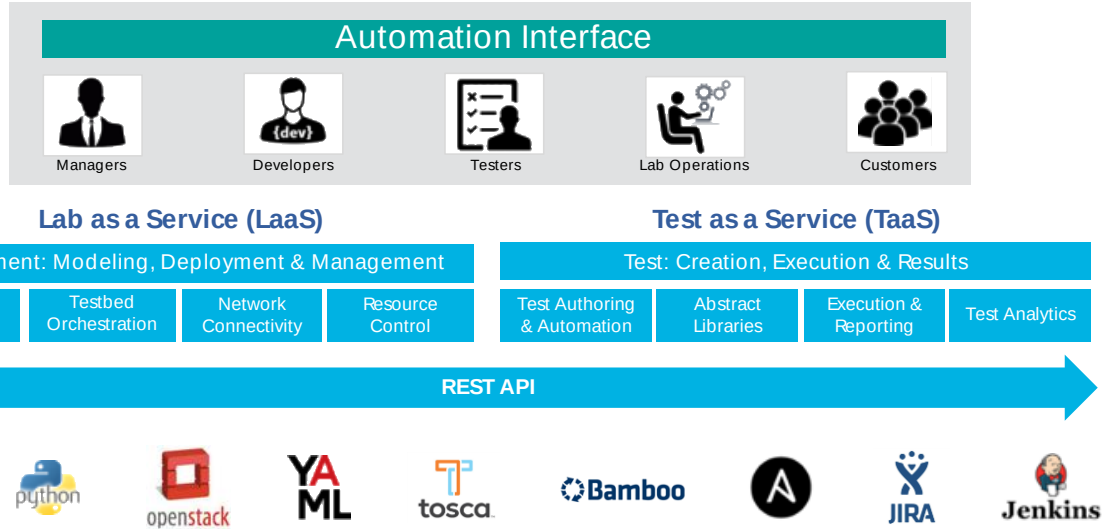
Automate to Accelerate

Lab & Test Automation





Automation of 5G labs

- **Accelerates** 5G product lifecycle
- **Reduces** costs
- **Maximizes** resource utilization
- **Reduces** setup times
- **Increases** collaboration

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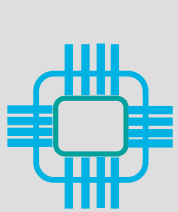
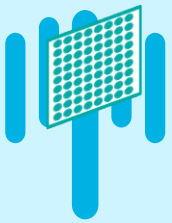
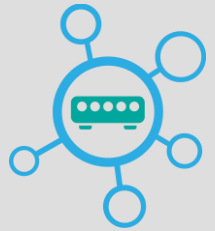
Spirent 5G Portfolio

5G Devices	5G New Radio	5G Fronthaul	5G C-RAN	5G Backhaul	5G Core



Velocity & iTest – 5G Lab & Test Automation with DevOps Continuous Testing

Vertex – 5G New Radio RF Channel Emulation

STC – 5G NG FHaul validation

Spirent TestCenter – 5G Cloud RAN & Distributed Data Center validation

8100 – 5G device perf. testing

UMETRIX – 5G user experience evaluation

GNSS 63x/7x – Positioning perf.

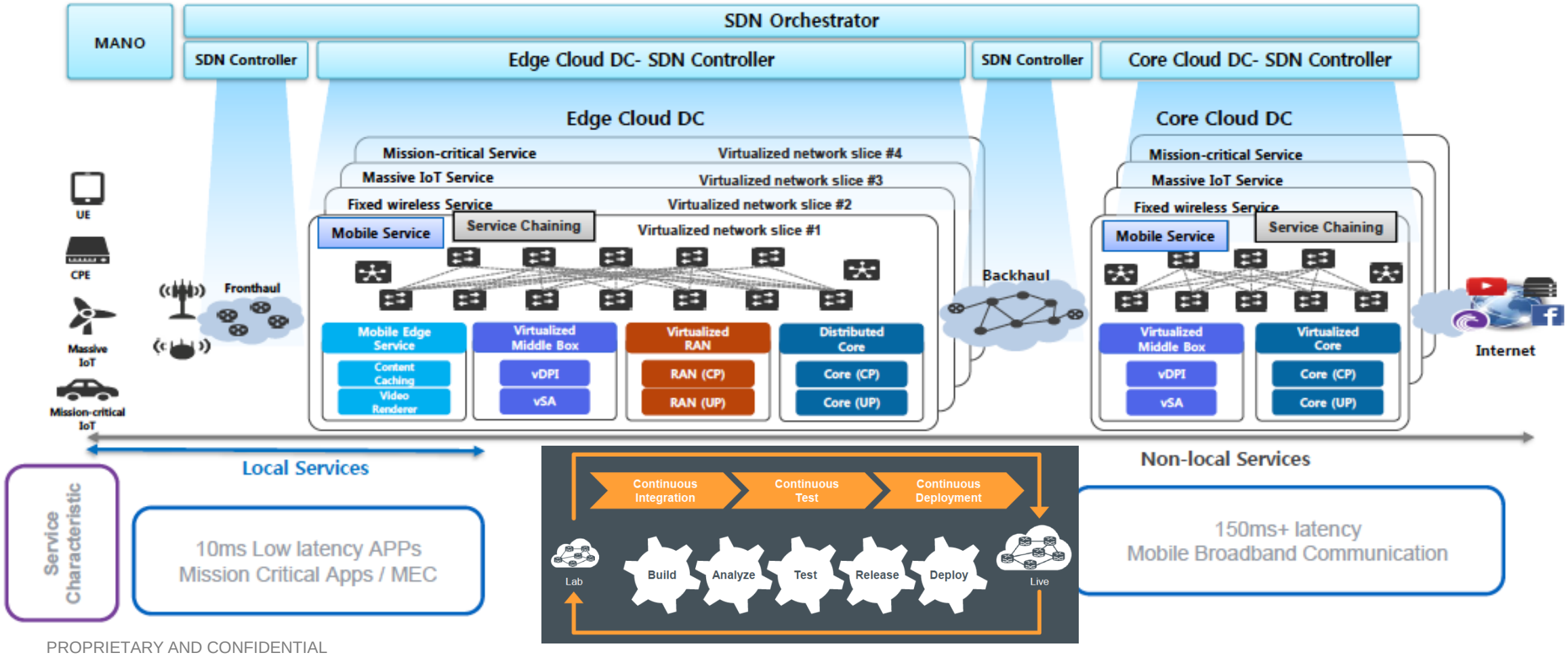
Landslide – 5G Core Network Evolution emulation, test & validation

VisionWorks – 5G **Lifecycle Service Assurance** with Active Test & Intelligent Automation

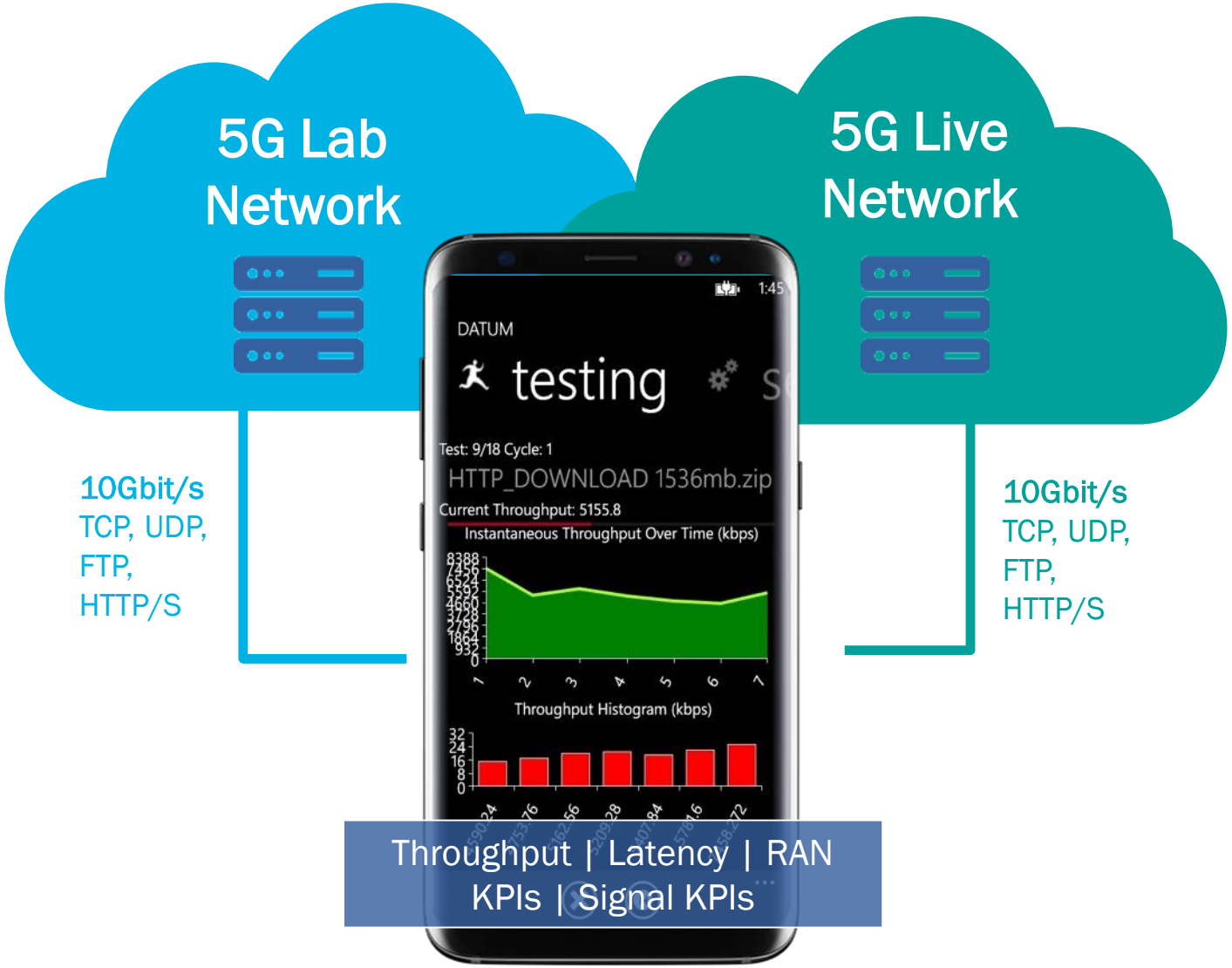
Spirent Security Labs - 5G Cybersecurity testing & auditing

Spirent's Service Delivery

- Distributed Secure Converged Core - Network Slicing end-to-end including the Edge Cloud
- Automated Infra/Network/App/Services Management of NFV through integrated MANO & SDN
- Support of DevOps /Micro Services/Cloud Native to achieve Agility for Faster Service Delivery
- Zero-Touch turn-up/turn-down of NFV Cloud Life Cycle Management.



Best 5G User Experience



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Measure what maters the most

the **User Experience**

5G Consumer Survey (Qualcomm):

- **85%** want faster connectivity
- **48%** want lightning fast browsing
- **37%** want to download content 10x faster
- **27%** want better quality video calls

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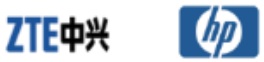
Our Customers

Develop Operate

Wireless & Positioning Device Manufacturers

Network Equipment Manufacturers



Network Operators

Enterprises & Governments

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