

Developing Achievable SLAs for 5G Private Networks

April 26, 2023

Sponsored by Spirent

Speakers



Sue Marek
Moderator



Darius Singh
Principal Consultant and
Private Network lead
STL Partners



Marc Cohn
Private Network Lead
Spirent

Agenda

- *Welcome and Introduction*
- *Presentation and poll question from Darius Singh, STL Partners*
- *Presentation and poll question from Marc Cohn, Spirent*
- *Q&A*

Private Network Outlook

- ✓ The number of private LTE/5G network deployments worldwide is growing rapidly and is expected to be an important revenue stream for the mobile industry.
- ✓ Nokia, which is considered one of the early leaders in private wireless, said it has a “strong pipeline of customers” and as of Q1 2023 it had 595 private wireless enterprise customers.
- ✓ However, there are some challenges – awareness of private wireless is still low among enterprises and the ecosystem is complex and difficult to navigate.
- ✓ Service level agreements (SLAs) are recommended for private networks as a way to manage the complex and disaggregated ecosystem as well as ensure critical business services are delivered as intended.

Main Presentation

Darius Singh, STL Partners

Marc Cohn, Spirent

Private Networks market overview

STL – Spirent webinar

April 2023

STL has built a centre of excellence around private networks and slicing, advising businesses on this for over 4 years

Unrivalled expertise and experience...

Supported major blue chip clients to develop their commercial strategy for private networks and slicing

"STL Partners very quickly understood our brief and the scope, delivered in a timely manner and with excellent quality. We're very confident STL's work will help our client's sales teams improve their customer interactions"

Europe sales lead, private networks – Global NEP

"I can rely on STL Partners whenever I need unique and compelling points of view on the current state of the industry, technology, and more importantly about the business aspects."

Director of Portfolio Marketing – Global technology firm

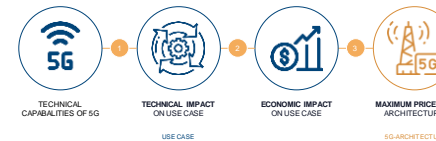
Supported players across the telecoms ecosystem, including major Tier-1 operators, hyperscalers, NEPs & OEMs, and Global SIs

Interviews with over 100 enterprises and solution providers across different industries

Team of experts: leading industry analysts and consultants, private network and slicing SMEs

...and an industry-leading knowledge centre

#	Date of announcement	Year	Country	Region	Lead partner (Hypothesis)
11	May-17	2017	France	Europe & Central Asia	Ericsson
93	May-20	2020	United States	North America	Druid Software
114	Oct-20	2020	United States	North America	TLC Solutions / Quortus
133	Jan-21	2021	United States	North America	Athonet
1	Dec-11	2011	Italy	Europe & Central Asia	Athonet
3	Dec-14	2014	Italy	Europe & Central Asia	Athonet
65	Oct-19	2019	United States	North America	Booz Allen Hamilton
115	Oct-20	2020	United States	North America	Fenix
183	Oct-21	2021	United Kingdom	Europe & Central Asia	Ferrovial
232	Sep-22	2022	United States	North America	AT&T
225	Aug-22	2022	Korea, Rep.	East Asia & Pacific	Samsung
226	Aug-22	2022	Korea, Rep.	East Asia & Pacific	Samsung
106	Aug-20	2020	Netherlands	Europe & Central Asia	Druid Software
107	Aug-20	2020	Norway	Europe & Central Asia	Druid Software
227	Aug-22	2022	Korea, Rep.	East Asia & Pacific	Samsung
172	Nov-20	2020	Taiwan (Rep. China)	East Asia & Pacific	Chunghwa Telecom



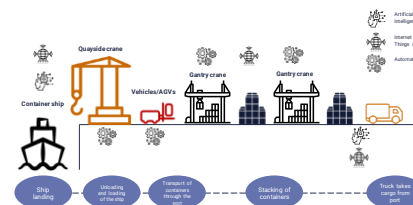
Global insights tool, including 280+ deployments and use cases for private networks and slicing across regions

Interactive tool for modelling the cost and ROI of private network deployments

Extensive catalogue of reports on topics within private networks and slicing



Vertical specific playbooks, exploring case studies, use cases and the business case for private networks



With Spirent, STL conducted primary research with the supply and demand side



Interview programme with 13 individuals across both the supply and demand side

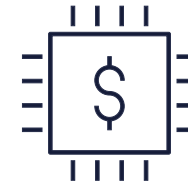
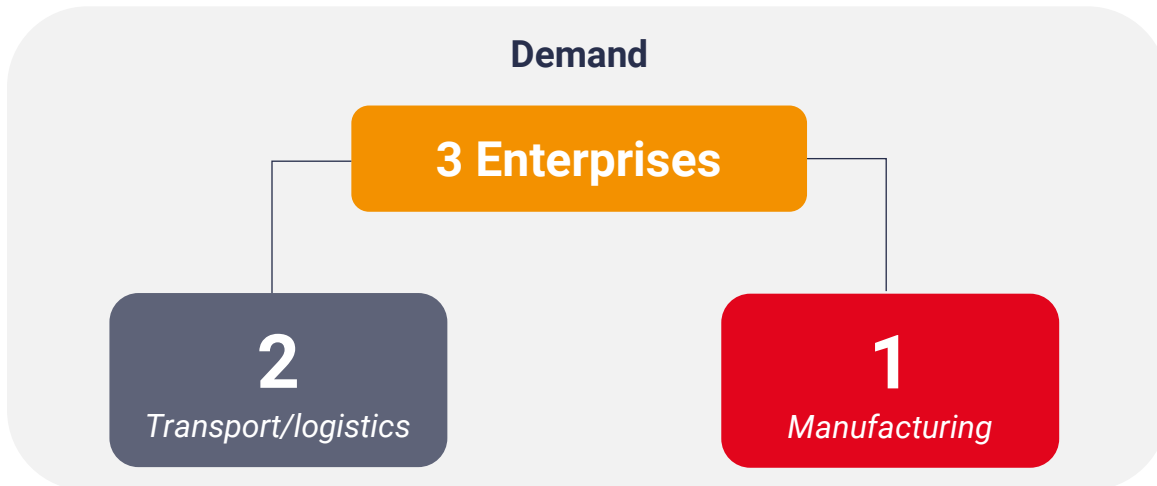


Survey programme with 200 enterprises across North America

Supply



Demand



50

Financial Services



50

Oil, gas and mining



50

Manufacturing



50

Transport and Logistics

This presentation will introduce themes and discussion points around three key questions

What are the drivers and barriers to private 5G adoption?

What does the private networks ecosystem look like?

What are the requirements of the private network?

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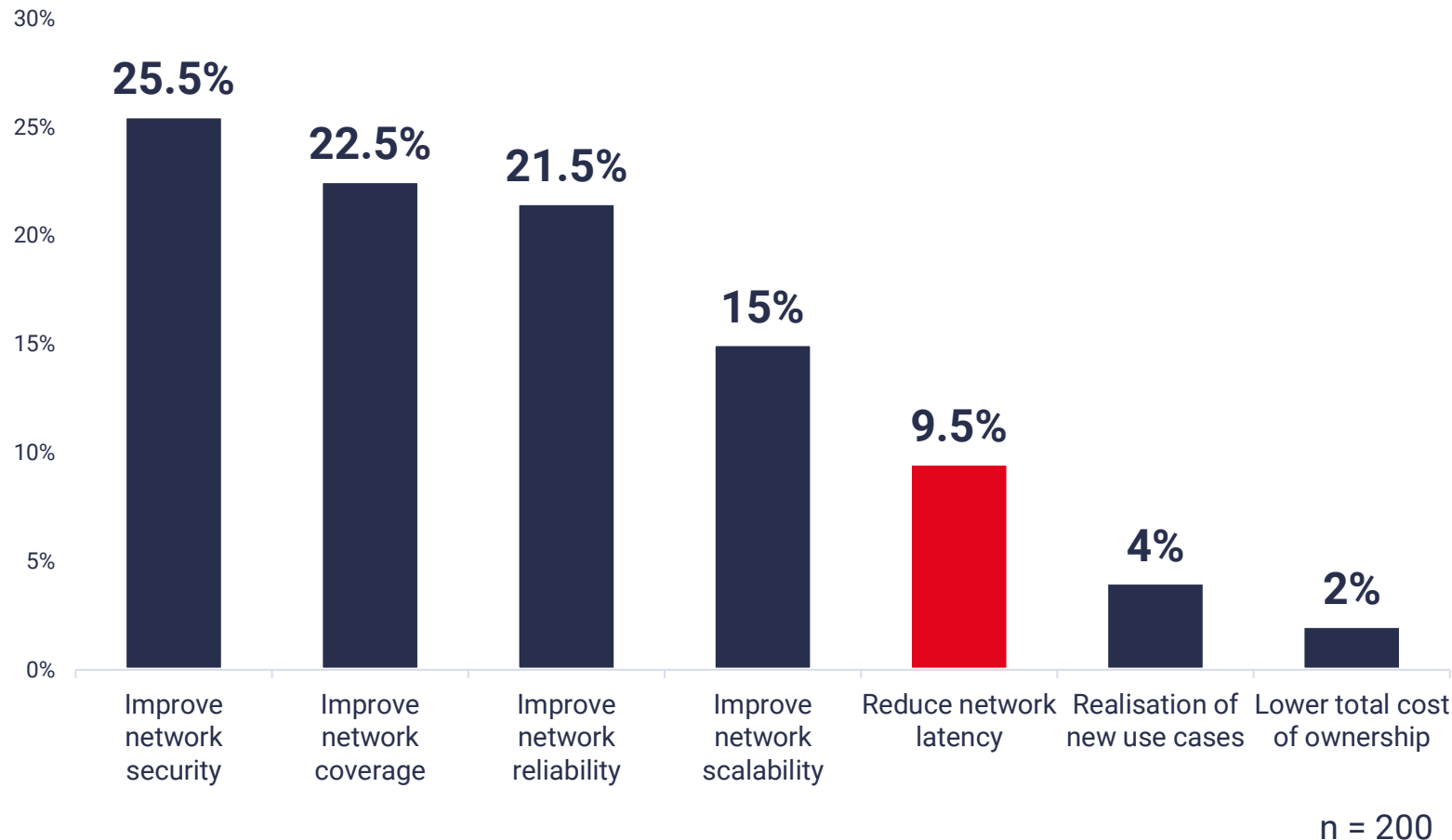
What are the drivers and barriers to private 5G adoption?

What does the private networks ecosystem look like?

What are the requirements of the private network?

Should the industry stop talking about latency?

What are the drivers of deploying private networks over other connectivity solutions?



“As of now, key major factors that would sway someone towards private networks is coverage, control, security, performance and reliability.

- Global Head of Telecom Network, GSI

“Security and reliability freak me, so would pay for protection on that

- COO, Enterprise (manufacturing)

“Private networks have their big quality number one that they are separate networks, especially for those that are highly sensitive about data and information they are sharing within their own campus, which is often let's say main goods or intellectual property.

- Head of Campus Networks, CSP

“We have seen major security breaches in massive corporations which is really jeopardising the businesses

- 5G Solutions Engineer, CSP

Private 5G augments the capabilities of edge computing in delivering next-gen operational use cases to enterprises

Edge is often seen as the primary driver for use case adoption

- Enterprises have been on a separate cloud (and edge) journey
- Edge as an evolution of their existing compute and storage
- Some enterprises may therefore consider edge and private networks under separate initiatives
- Edge provides the major capabilities required to deliver next-gen use cases (e.g. low latency, data localisation)

- Some are looking at private networks in isolation from edge (e.g. mining) due to remote coverage issues
- However, most that look at PN look at it together with edge
- The private network provides an additional layer of control, customisability, security, and most importantly, reliability
- This is essential for mission critical use cases or environments with stringent requirements

Private 5G then provides additional benefits for cases with more stringent requirements

“ Edge is what is critical for video analytics use cases. The ROI often doesn't make sense for private 5G and 4G is enough.

- Global Head of Business Development, GSI

“ Private 5G may be justified in certain cases such as for remote applications i.e. mining or desert locations, or for those cases requiring ultra low latency, i.e. quality control in manufacturing.

- Global Head Technology Alliances, AR/VR Developer

“ Edge is essential whereas the need for 5G or private networks differ from case to case. In some cases, where the application is at some large campus the 5G is necessary.

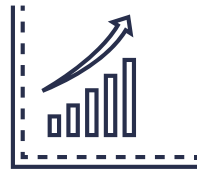
- Global Director of Business Development, GSI

Private 5G edge use cases must address enterprise business objectives, such as increasing cost pressures and compliance



Cost pressure

- Managing increased cost of raw materials and labour



Global trade / demand

- Growing capacity and increasing throughput in order to meet rises in demand for raw materials, goods and their transport



Sustainability

- Aligning operations with regional, global climate goals



Safety / security

- Ensuring data is stored and managed securely
- Improving working conditions



Skills availability

- Not enough technical / digital skills within current workforce
- Increasingly difficult to recruit for low-skilled/high risk jobs

In order to capture the opportunity, operators and their partners must overcome the following barriers to adoption



Customer knowledge

- *Define the ROI in the enterprise's language*
- *Identify what can be achieved with different models*
- *Leverage telco strengths to take a role as "trusted advisor"*



Fragmentation

- *Too many "ecosystems" for customers, vendors, developers to manage*
- *Need to drive standardisation, abstraction, or co-innovation*



Cost

- *Absolute cost of:*
 - *Devices*
 - *Infrastructure*
- *Cost model – move to opex or "as a service"*

This presentation will introduce themes and discussion points around three key questions

What are the drivers and barriers to private 5G adoption?

What does the private networks ecosystem look like?

What are the requirements of the private network?

The private 5G edge ecosystem is complex – vendors looking to build holistic solutions must work across it

Key GTM players



Key technology enablers

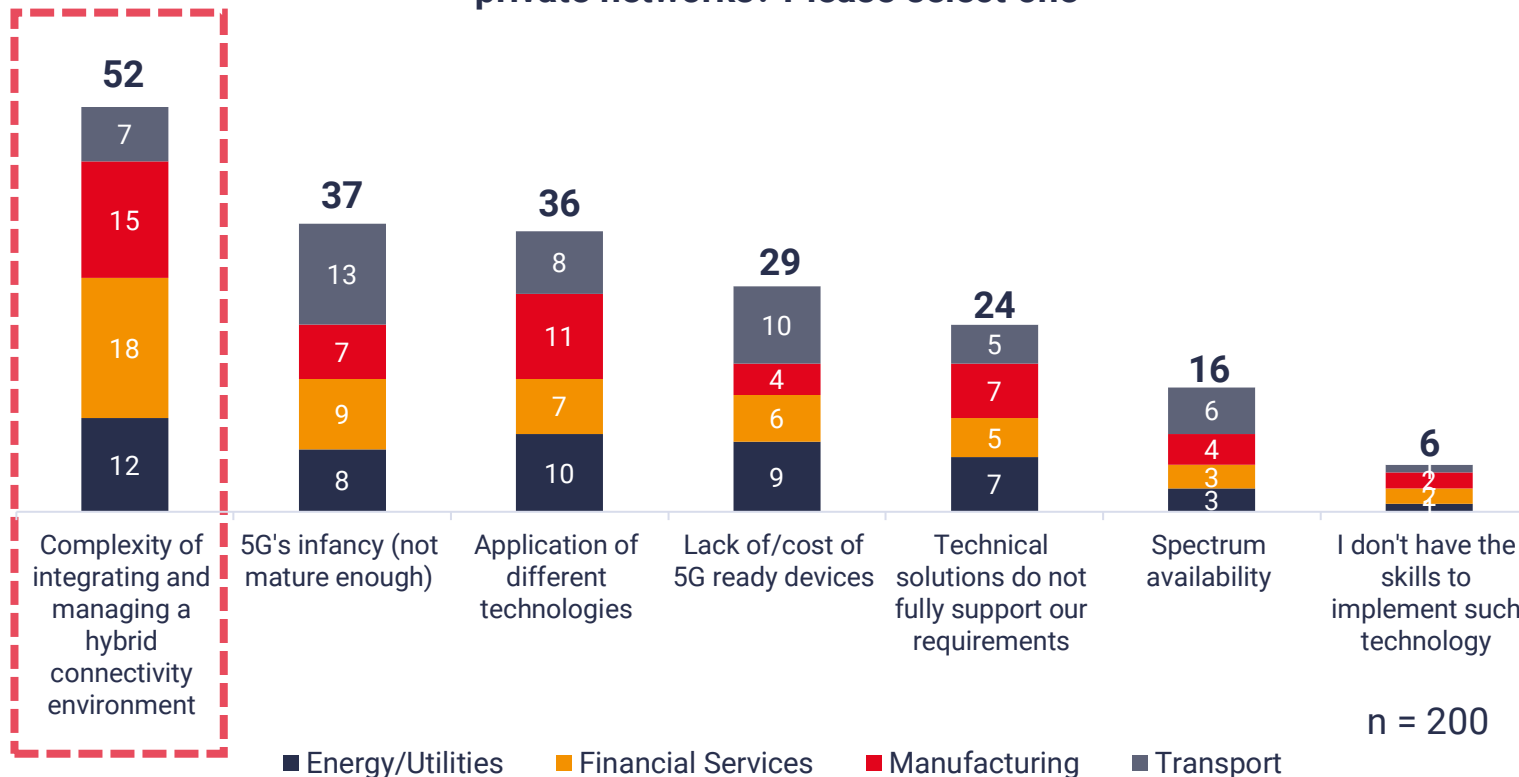


Poll: Who will lead the GTM for private networks?

- Global SIs
- Hyperscalers
- Telecoms operators
- Industry solution providers
- Network equipment providers

Vendors in the space must also consider simplicity as a key differentiator – this provides GSIs an advantage in the space...

What is the primary technical challenge when selecting and deploying private networks? Please select one



Enterprises expect the applications to work so **need someone that understands the full stack** and takes a long time to pull a team that understands the whole ecosystem

- VP and KAM with HCP, NEP

Other barriers include spectrum in some countries, **availability of licensed spectrum is not so easy** and not so cheap, not as easy Wi-fi and a bit difficult to obtain

- 5G Global Practice Manager, NEP

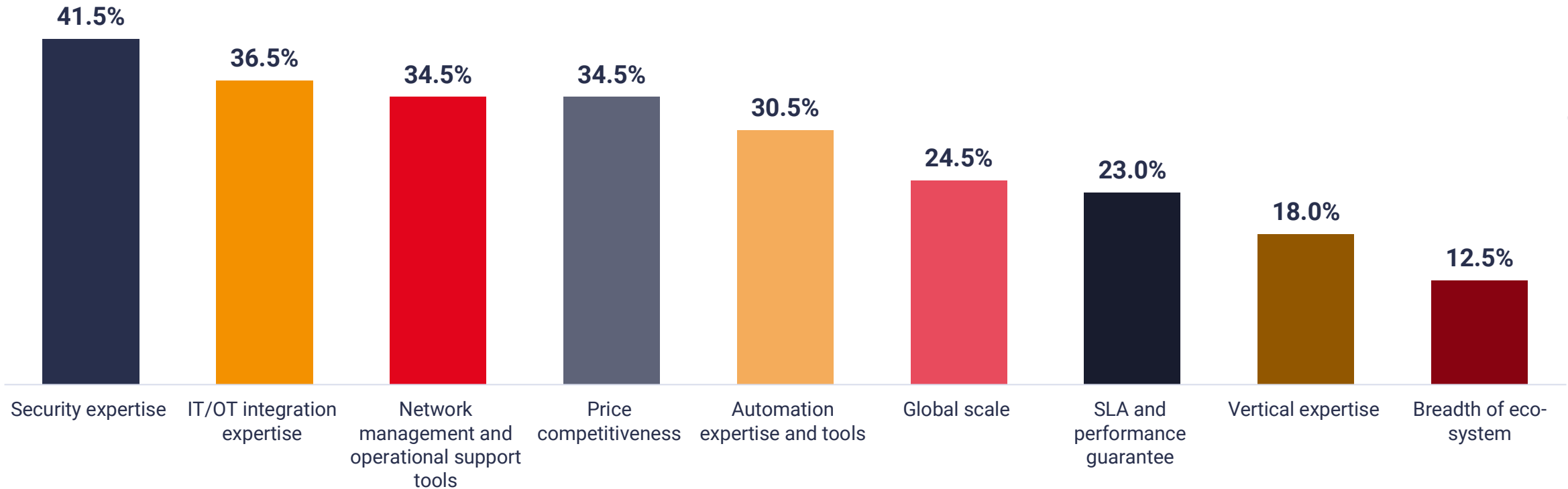
There is still a lack of clarity today as to what the government will decide with regards to spectrum licenses **and whether spectrum will be available for industry**

- VP, 5G and Digital Solutions, CSP

5G/device infancy seen as key for transport industry as 5G required in areas of limited coverage i.e. ports and 5G ready-devices required for use cases such as traffic management etc.

...as well as their security expertise and knowledge of both IT and OT for the customer

What are the most important attributes when choosing a partner? Please select up to three options.



We see a **good match with global SIs** as in many cases they have an IT contract with one company which is a good channel, have the good customer, use case and bring the technology which is a win win

- 5G Global Practice Manager, NEP



They are **already in enterprises and understand the challenges as they already supply the enterprise application** which isn't a core Telco function – it is a natural extension of their current offering

- Global Head of Telecom Network, GSI

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What are the drivers and barriers to private 5G adoption?

What does the private networks ecosystem look like?

What are the SLA requirements of the private network?

SLA demand is still nascent but will be focused across more engineering based use cases

Use cases for SLAs are still evolving

“ Enterprises have been using the applications over a best effort network and hence, do not have a baseline to compare ... so they are asking an SLA to be committed after baselining the network using a trial setup

- VP, 5G and Digital Solutions, CSP

“ SLAs are not yet stringent as still very early days and dependent on a customer to customer basis

- Global Head of Telecom Network, GSI

“ We haven't had a customer talk about SLAs yet but its early days

- Private 5G principal manager, HCP

Customers lack understanding around SLA requirements

“ Sometimes they take insights from Ericsson, AWS etc. and put macro requirements or latency requirements that they can't actually do and then it takes time to actually explain how the private network will run

- Global Head of Telecom Network, GSI

“ Typically the customers have some consulting companies helping them draft their RFQs yet the customer has no idea if the latency is sufficient for them

- Head of Campus Networks, CSP

Greatest demand seen in more engineering based use cases

“ On the manufacturing and the maintenance side the SLAs are much more stringent than with passive use cases such as drone analysis as then the SLAs are different as it doesn't hit business as usual

- Global Head of Telecom Network, GSI

“ There are two groups, one has high requirements e.g. 15 ms (latency) and are quite engineering focused and understand what they want to realise. The other group is completely satisfied with 30ms and is normally specific for one use case.

- Head of Campus Networks, CSP

“ Healthcare/military industries as they mature may see a greater need for super high SLAs

- Client Partner with NEP, GSI

Enterprises will pay a premium for more stringent SLAs if necessary, but this comes at greater cost to the operator

Enterprises are willing to pay a premium for more stringent SLAs

- Enterprises will pay for a “non-best-efforts” network
- This is not a “nice to have” capability
- Enterprises will only pay if more stringent requirements are essential

Stringent SLAs can come at a cost to the operator

- Five 9’s at the enterprise site requires additional resource from the operator
- Different management required to public network
- Only some telcos will have the capabilities to monetise...

Managing these requirements most likely done by CSP but need capabilities from 3rd party

- ...Others will require support from partners to deliver
- Operators need to provide visibility/reporting tools to customers on their network
- Helps build the private networks business case



SPIRENT WEBINAR

Making Private Networks Work

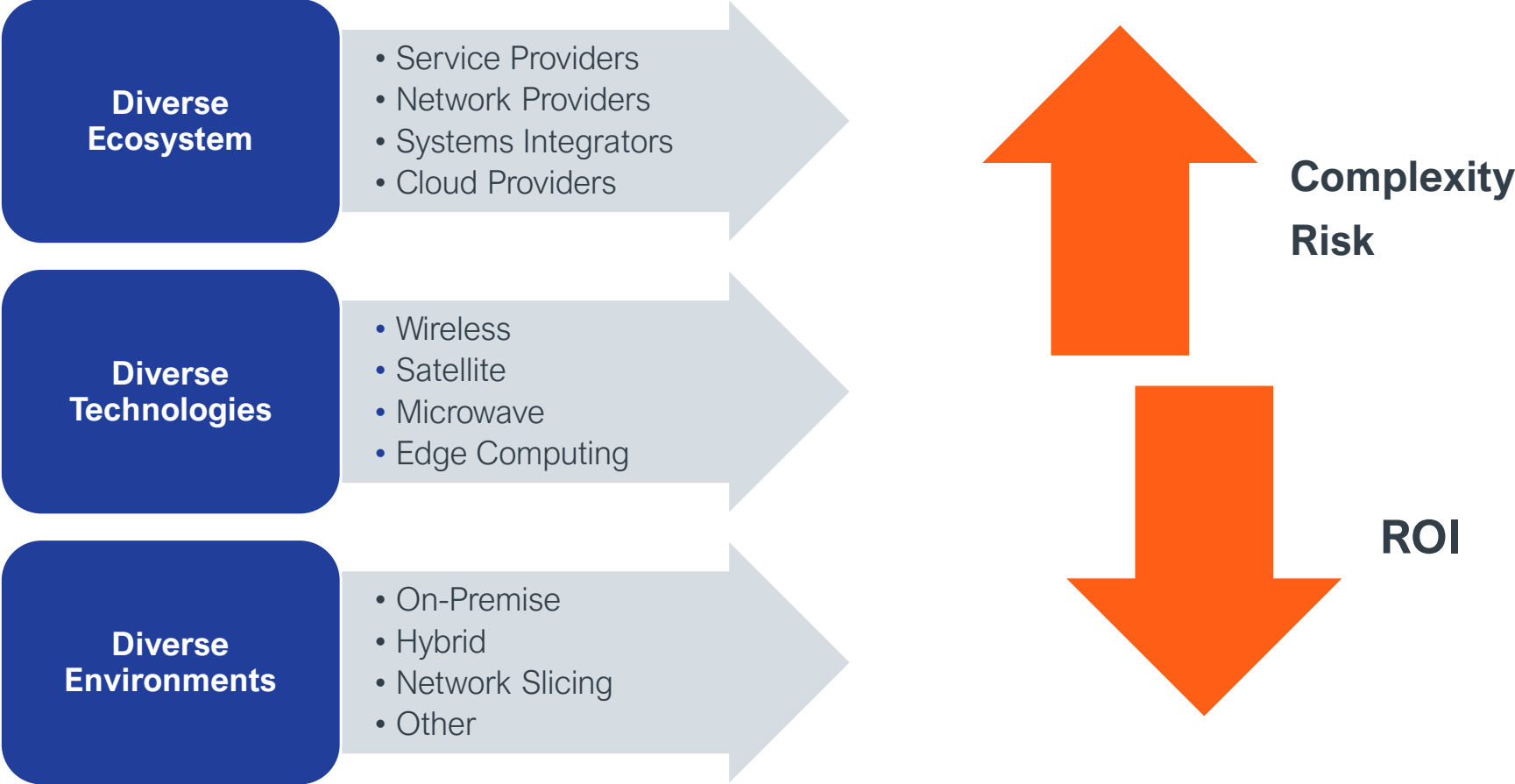
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Private Networks Drive Business Outcomes



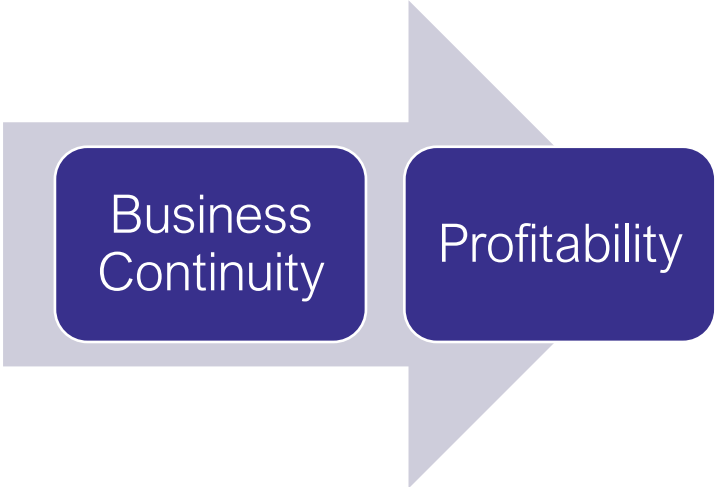
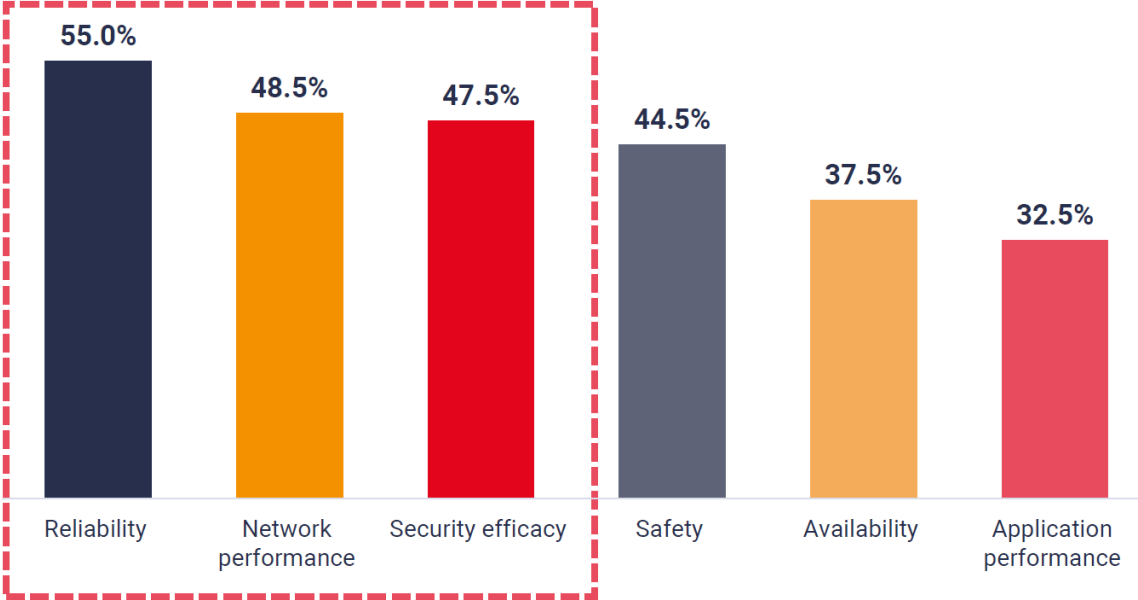
Service Level Management Is Essential



What SLAs/KPIs Must Network Partners Offer?

STL Partners Private Networking Market Investigation

What type of SLAs/KPIs would you require your network partner to meet?
Please select up to three options



Source: STL Partners Private Networking Market Investigation | Dec'2022

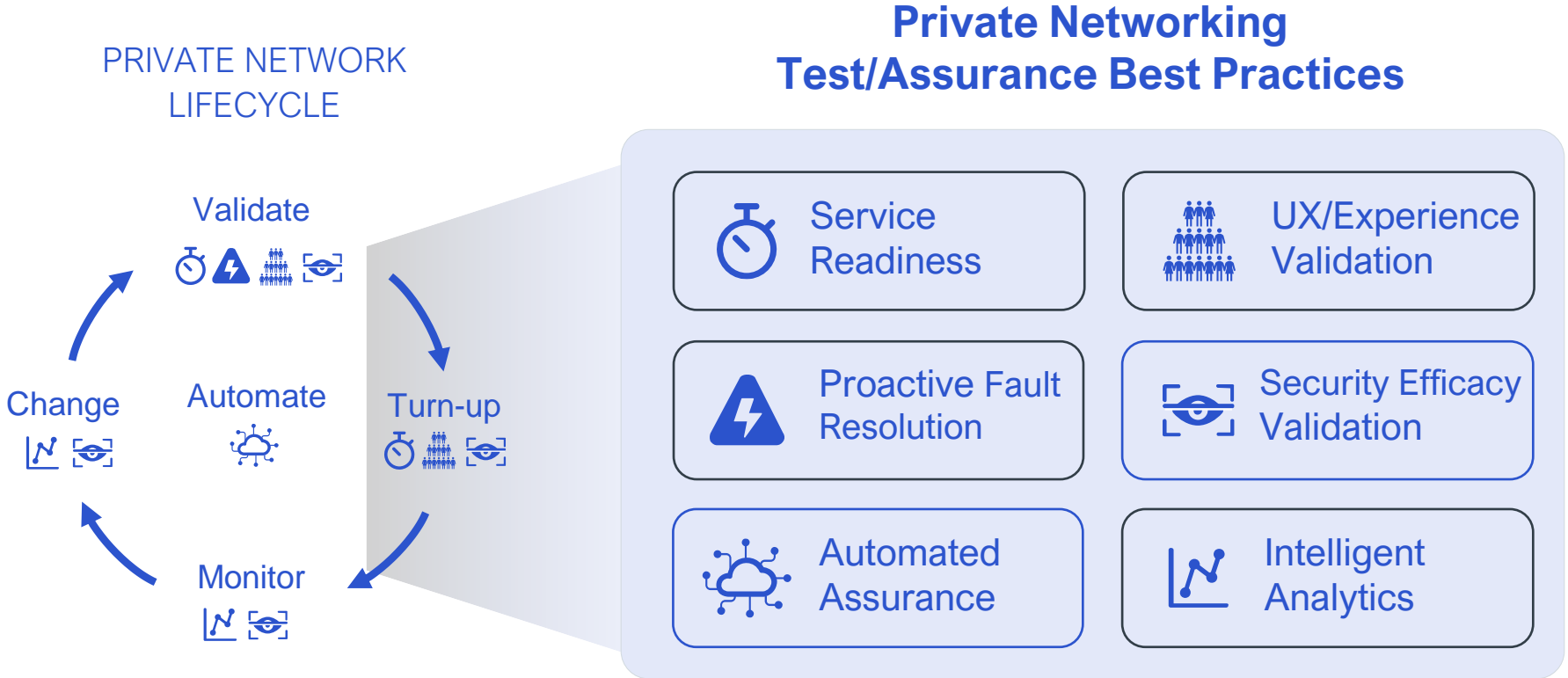
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Private Network KPIs Assure Success



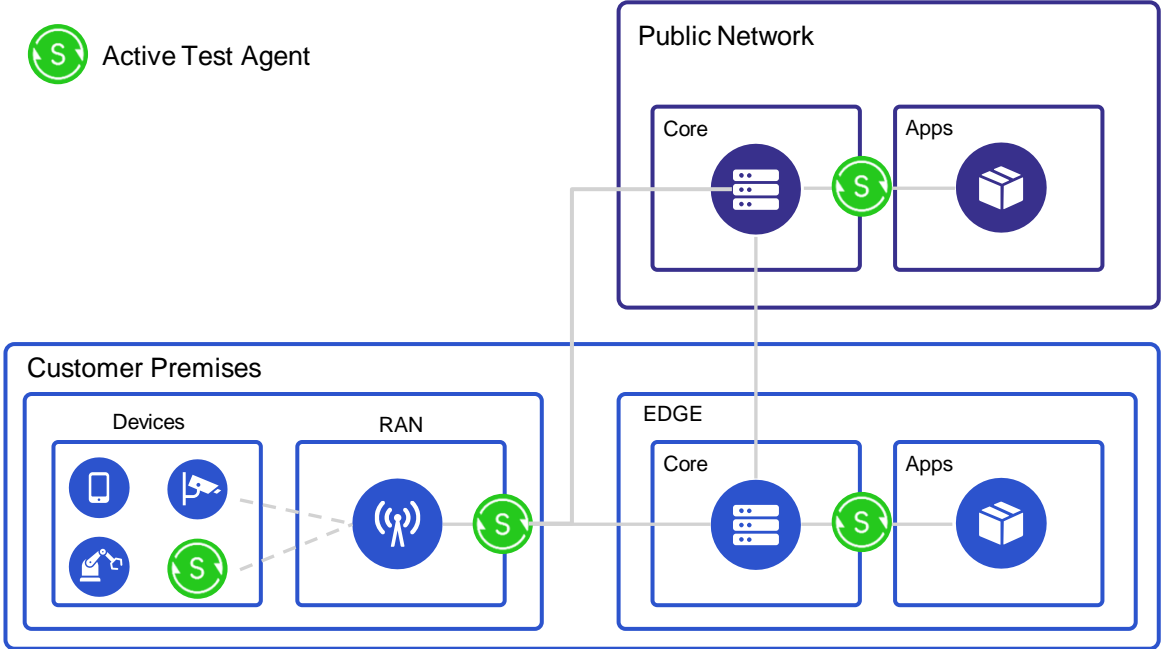
Private Network Testing Best Practices

Multi-domain, multi-technology, multi-vendor



Proactive SLA Management Case Study

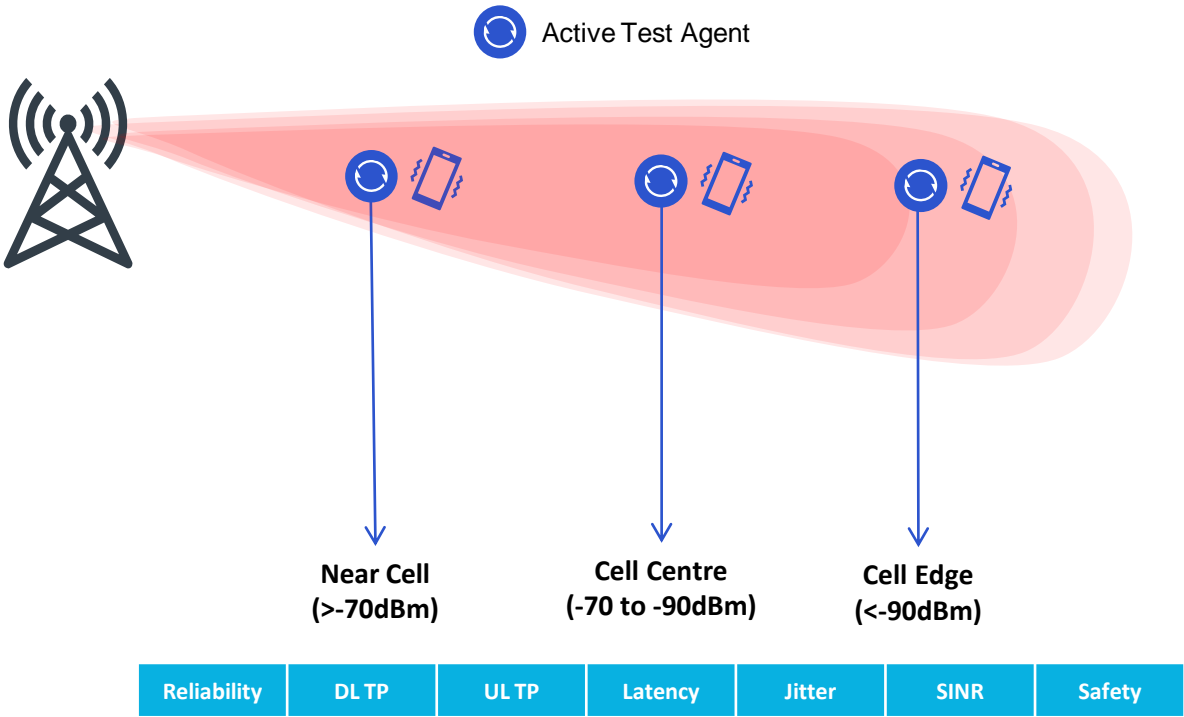
Tier 1 CSP: Validate service readiness, multi-domain SLM and fault isolation



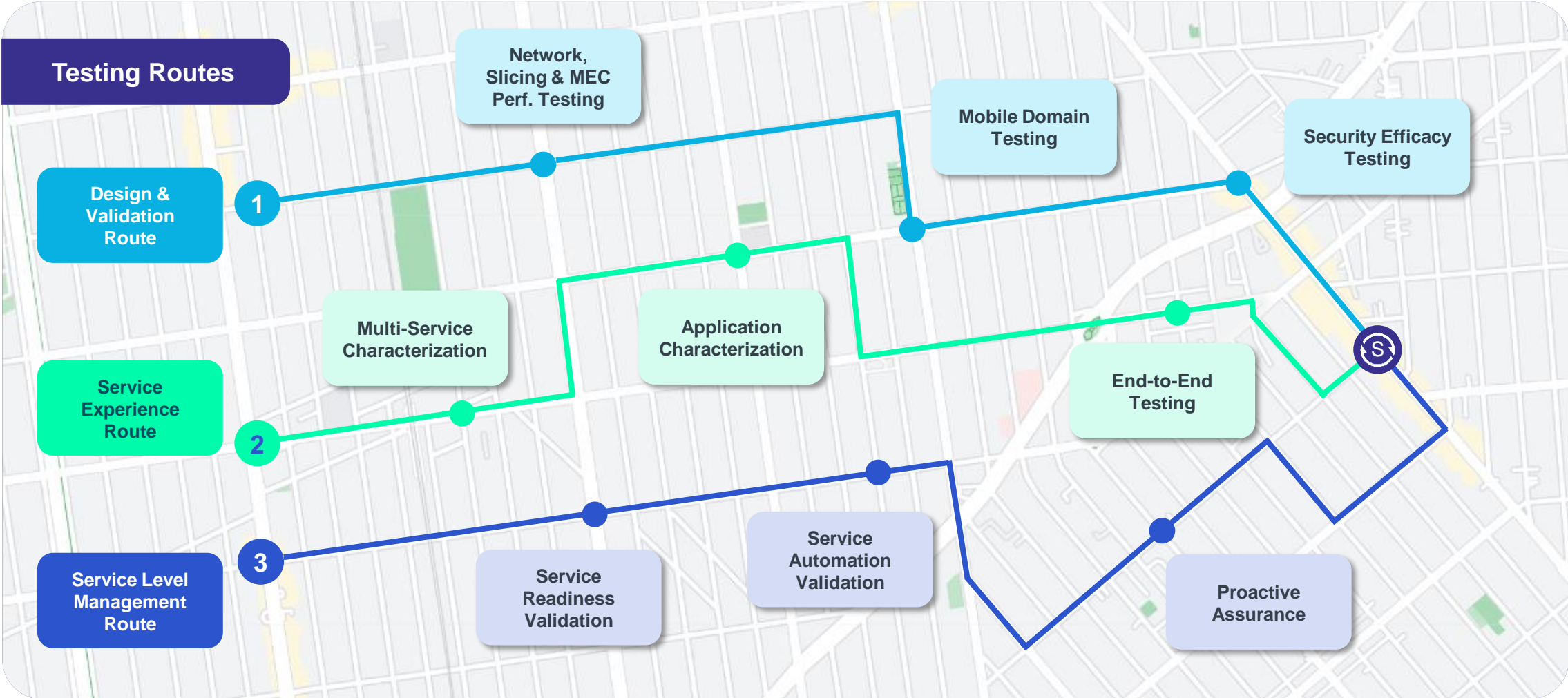
- Activation Testing**
- Proactive SLA Management**
- Automated Troubleshooting**

Customer Confidence & SLA Management

Contrast RAN performance over 4G / 5G bands



Role of Testing in Private Networking





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Audience Q&A

Submit questions using the “Q&A” tab on your screen