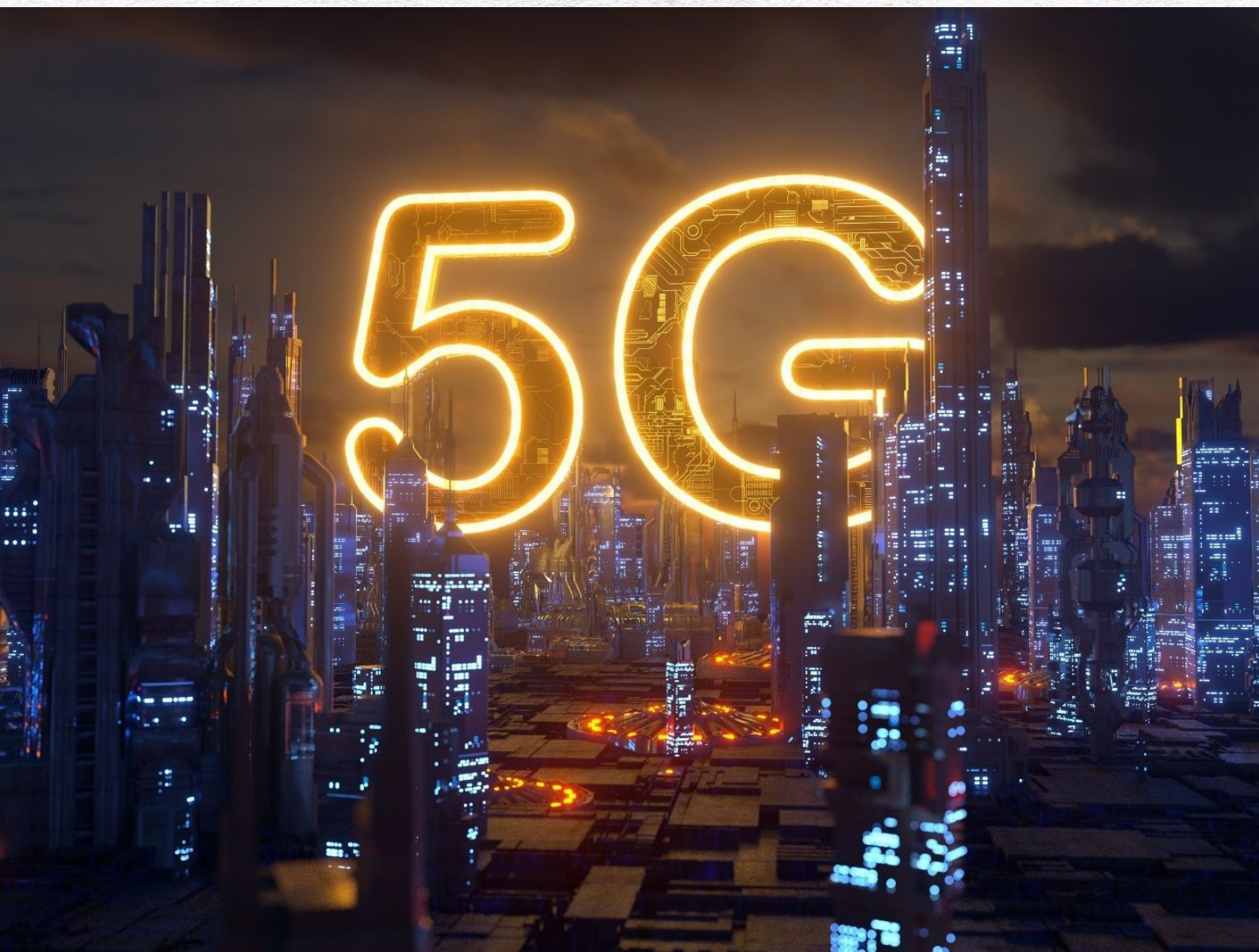# RADCOM

5G ASSURANCE OPERATOR SURVEY

TeckNexus
DIGITAL SERVICE PROVIDER ECOSYSTEM

SURVEY BACKGROUND

The 5G assurance operator survey was conducted on behalf of RADCOM by TeckNexus.

Survey Methodology:

This survey includes 100 validated responses from an online survey conducted by TeckNexus targeting Network and IT personnel working for global network operators who have launched 5G services.

The online survey was conducted between April 26 to May 16, 2021.
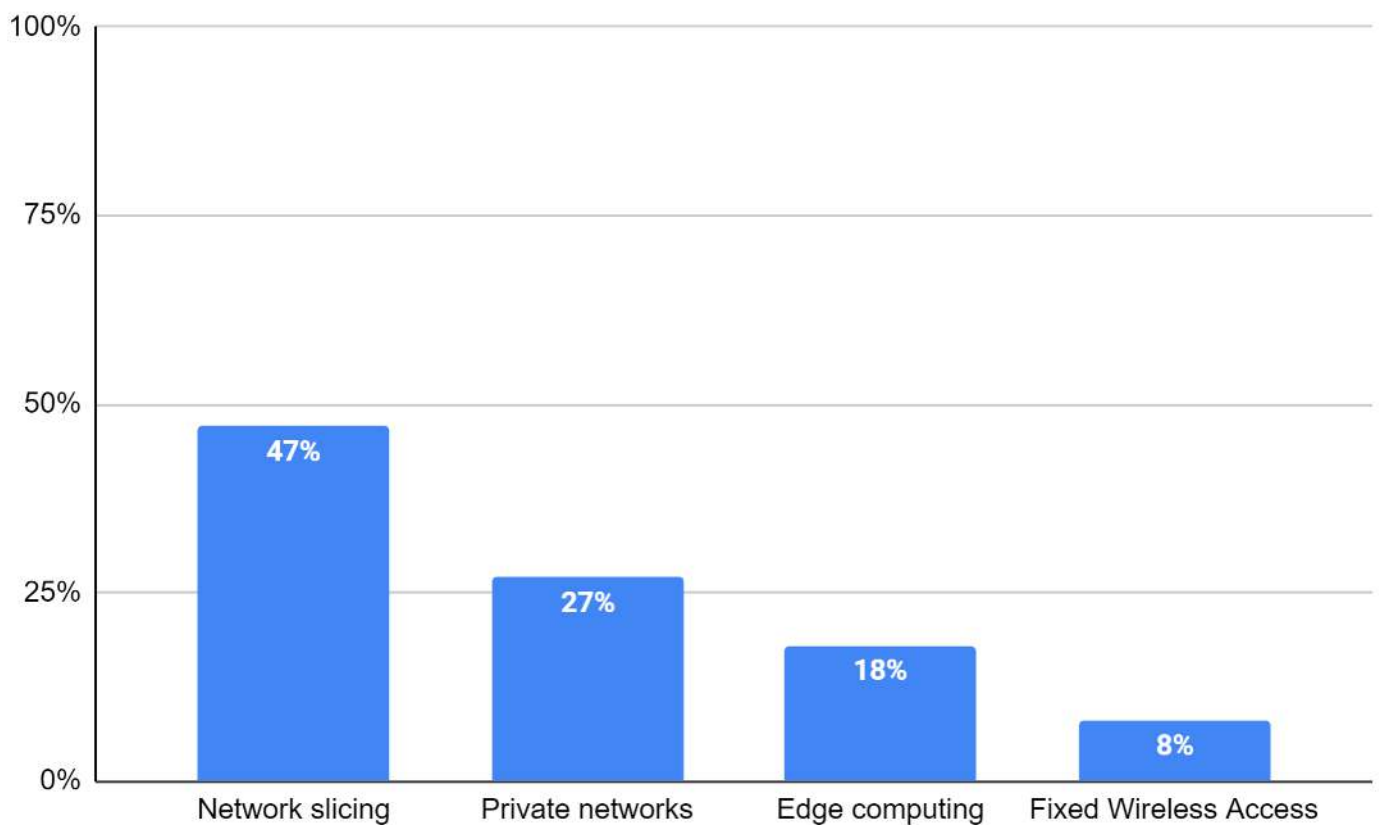
5G ASSURANCE OPERATOR SURVEY

The survey consisted of ten questions prepared by RADCOM to get a global perspective from 5G technical personnel on the key features driving network quality, service assurance - capabilities, methodologies, troubleshooting, monitoring, use of AI/ML, and more.
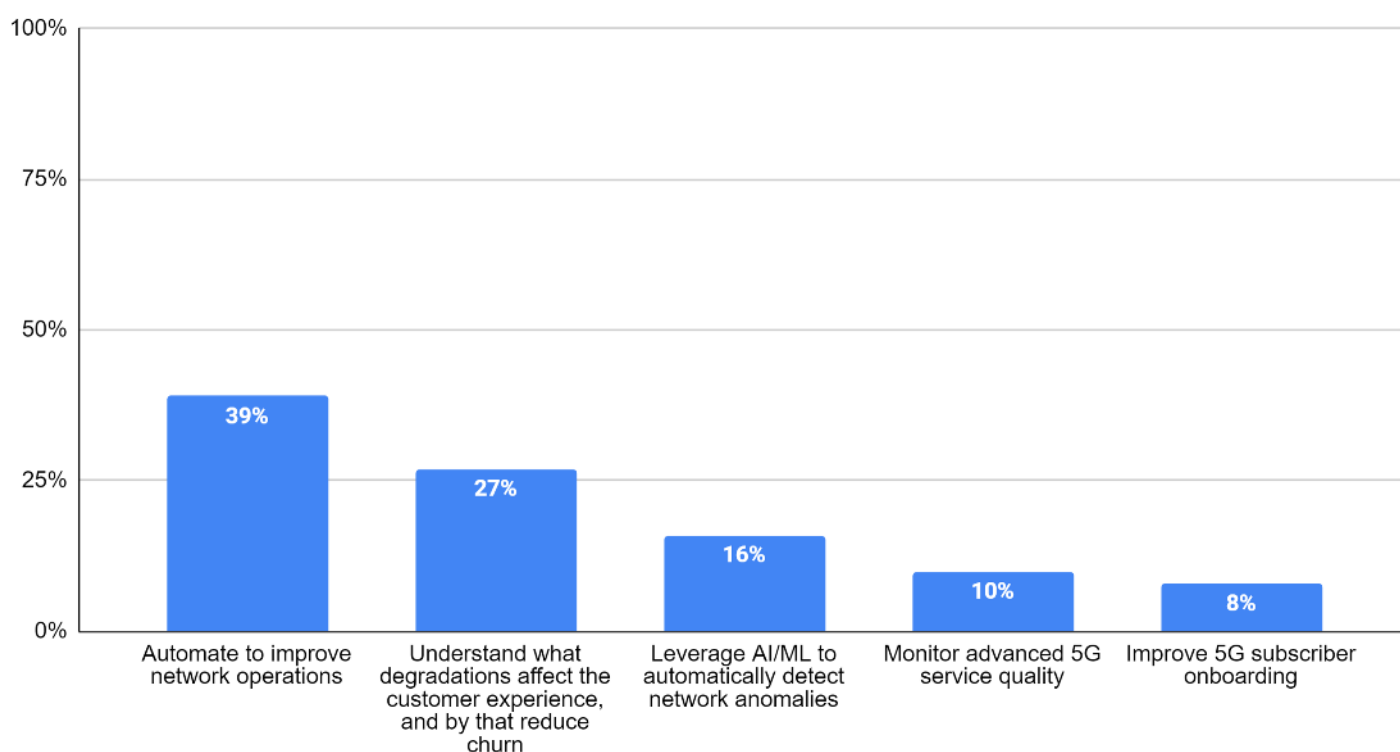
NETWORK SLICING IS THE TOP BUSINESS DRIVER FOR 5G SA

QUESTION 1:

WHICH IS THE TOP BUSINESS DRIVER FOR 5G STANDALONE (SA) DEPLOYMENT?

Bar chart showing percentages: Network slicing 47%, Private networks 27%, Edge computing 18%, Fixed Wireless Access 8%.
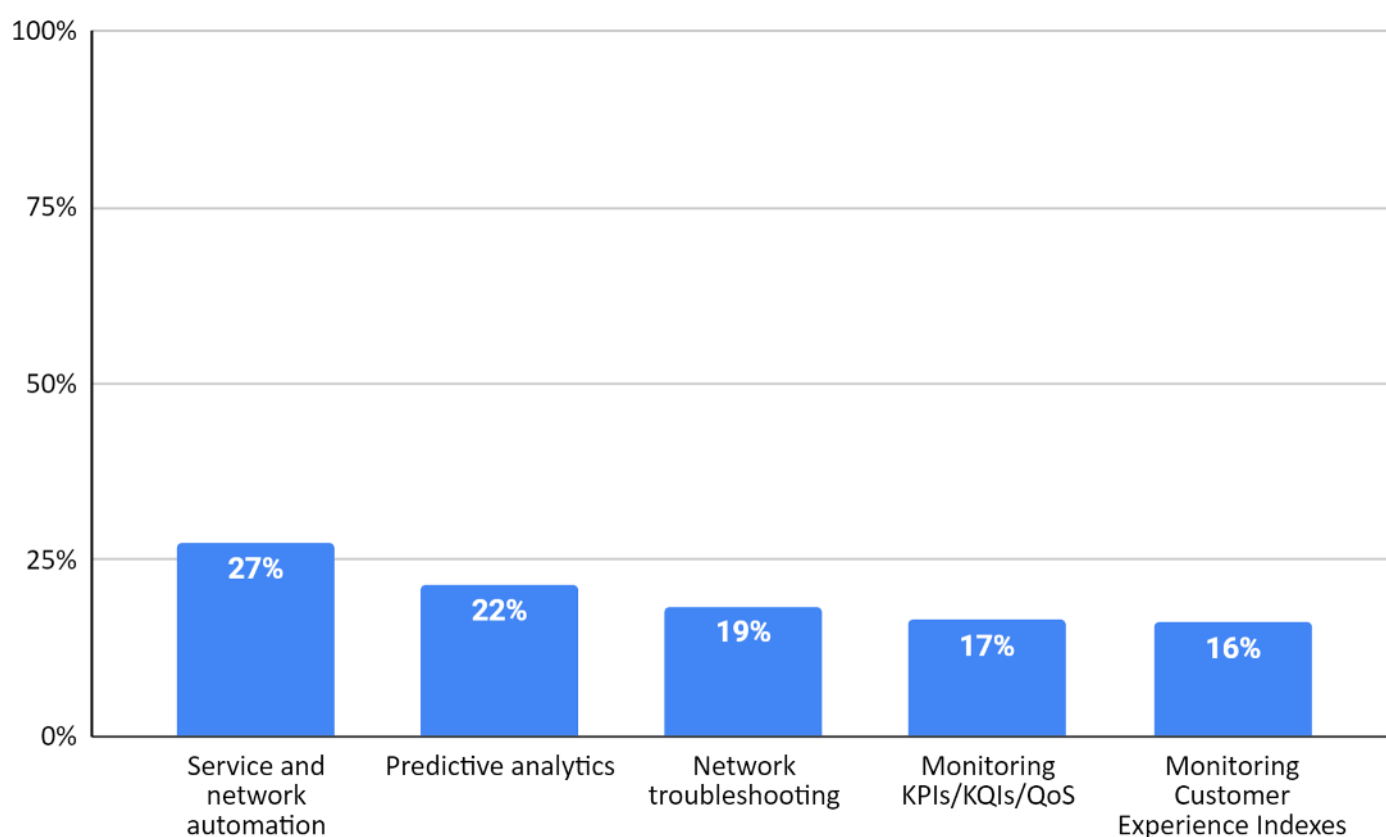
QUESTION 2: AS YOU LAUNCH 5G, WHAT IS THE TOP BUSINESS PRIORITY FOR YOUR NETWORK QUALITY TEAMS?


"AUTOMATION FOR IMPROVING NETWORK OPERATIONS IS THE TOP PRIORITY FOR NETWORK QUALITY TEAMS."

QUESTION 3: WHICH OF THE FOLLOWING HAS THE HIGHEST IMPACT ON CUSTOMER EXPERIENCE IN YOUR 5G NETWORK?


"THE TOP FEATURE IMPACTING CUSTOMER EXPERIENCE IN 5G NETWORK IS SERVICE AND NETWORK AUTOMATION"

QUESTION 4: WHICH OF THE FOLLOWING FEATURES IS THE MOST IMPORTANT WHEN SELECTING A SERVICE ASSURANCE VENDOR FOR 5G?
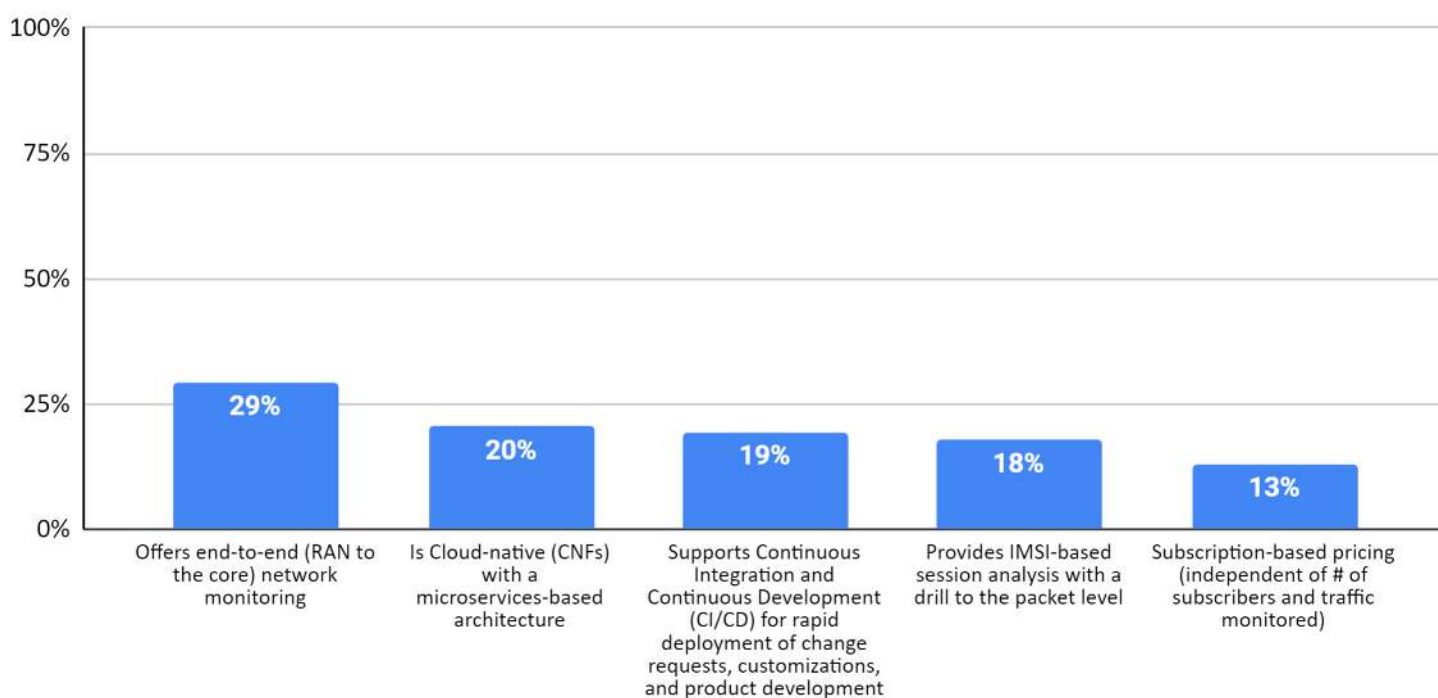
## "THE TOP FEATURE FOR SELECTING SERVICE ASSURANCE VENDOR IS TO SUPPORT FOR OFFERING END-TO-END (RAN TO CORE) NETWORK MONITORING"

QUESTION 5: CHOOSE THE TOP THREE SERVICE ASSURANCE METHODOLOGIES YOUR ORGANIZATION WILL BE USING TO ENSURE THE CUSTOMER EXPERIENCE IN 5G?
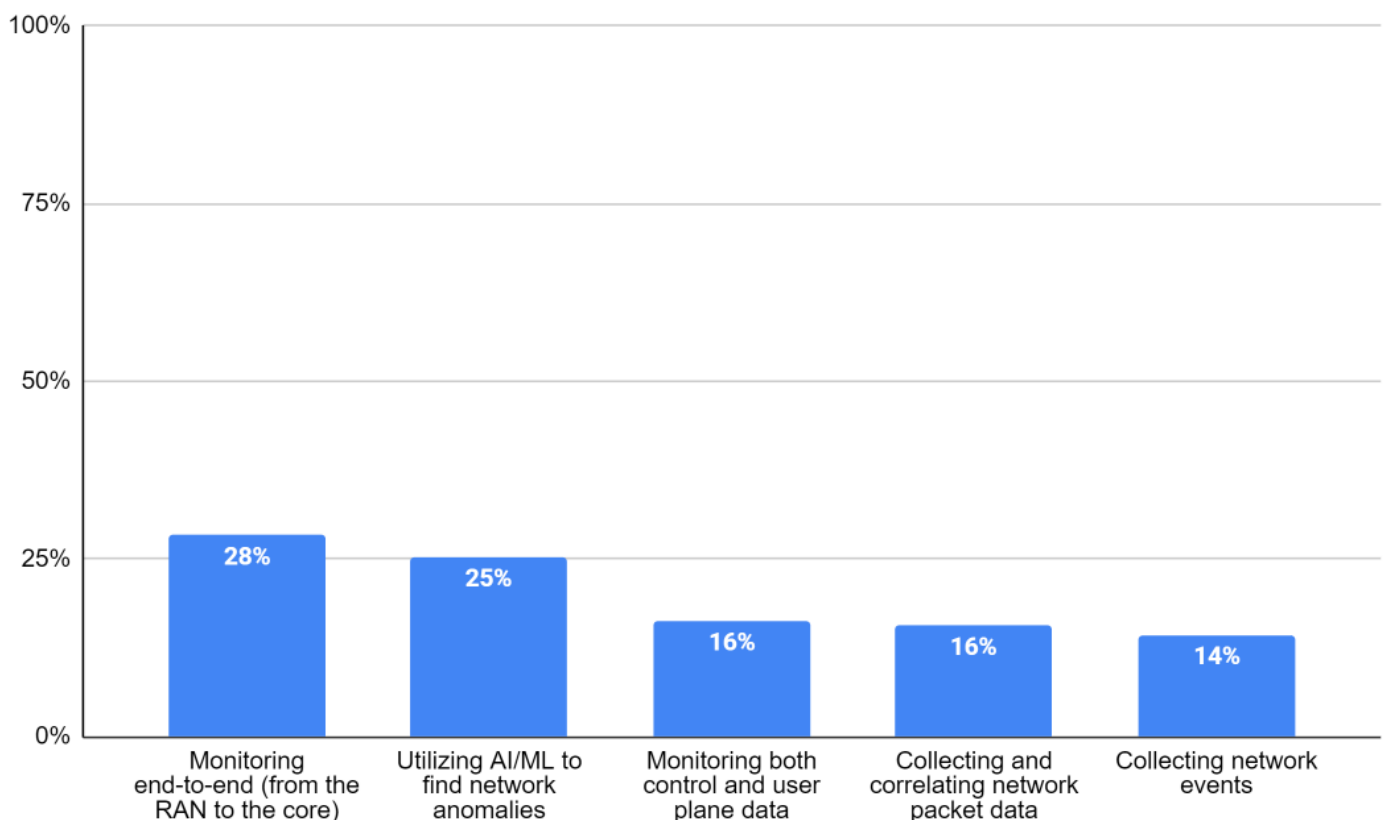
"MONITORING E2E, UTILIZING AI/ML, AND MONITORING BOTH CONTROL & USER PLANE DATA ARE TOP 3 METHODOLOGIES FOR ENSURING CUSTOMER EXPERIENCE IN 5G"

QUESTION 6: WHICH OF THE FOLLOWING TROUBLESHOOTING CAPABILITIES PROVIDES THE MOST VALUE FOR 5G NETWORK ASSURANCE?
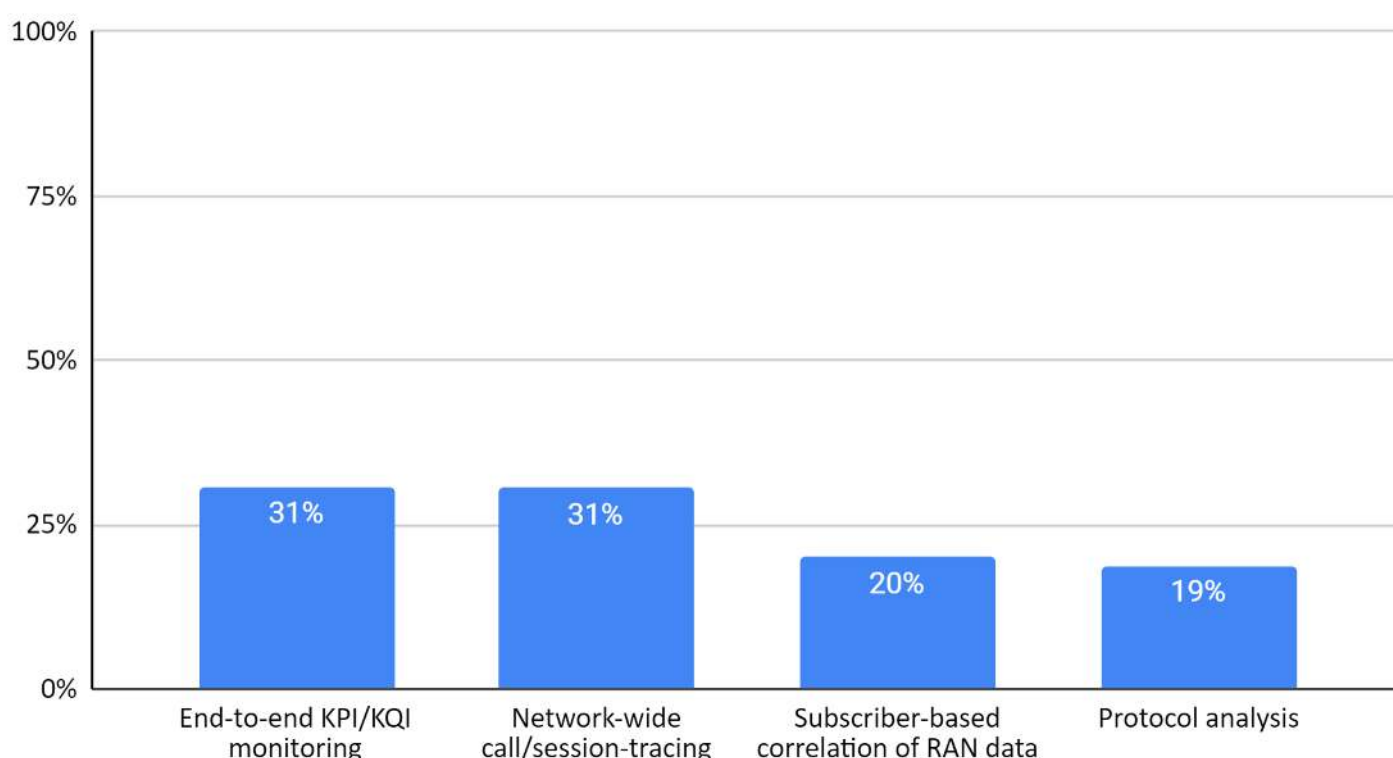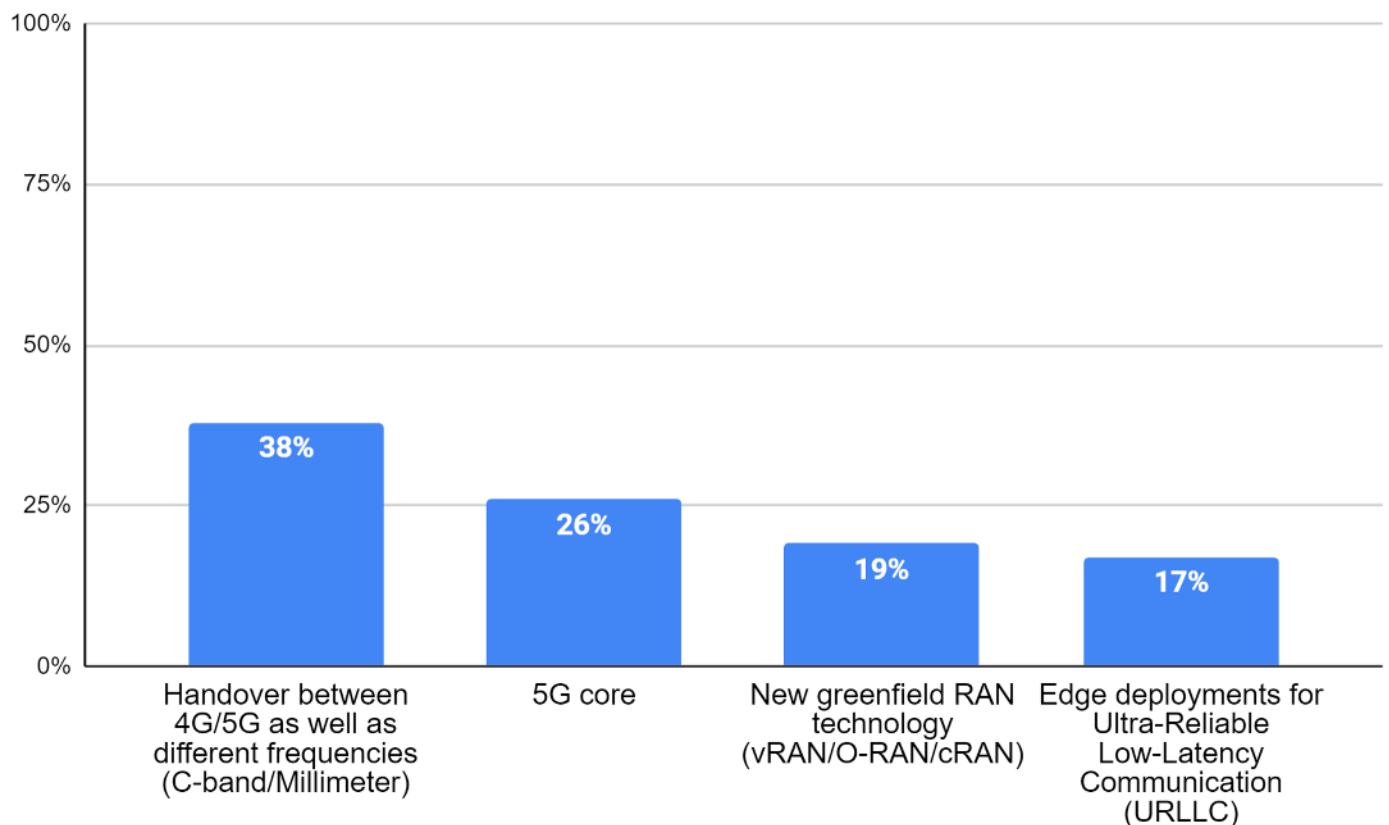

"END-TO-END KPI/KQI MONITORING IS THE TOP TROUBLESHOOTING CAPABILITY FOR ENSURING 5G NETWORK PERFORMANCE"

HANDOVER BETWEEN 4G/5G AND DIFFERENT FREQUENCIES ARE THE TOP ASPECTS TO MONITOR

QUESTION 7:

WHAT ASPECT OF THE 5G NETWORK IS THE MOST IMPORTANT FOR SERVICE ASSURANCE TO MONITOR?

Bar chart showing:
- Handover between 4G/5G as well as different frequencies (C-band/Millimeter): 38%
- 5G core: 26%
- New greenfield RAN technology (vRAN/O-RAN/cRAN): 19%
- Edge deployments for Ultra-Reliable Low-Latency Communication (URLLC): 17%

QUESTION 8:

WHAT DO YOU SEE AS THE MOST IMPORTANT USE CASE FOR ARTIFICIAL INTELLIGENCE (AI) AND MACHINE LEARNING (ML) TO IMPROVE SERVICE QUALITY?

AUTOMATICALLY DETECTING NETWORK ANOMALIES IS TOP AI/ML USE CASE TO IMPROVE SERVICE QUALITY

Chart showing survey results:
- Automatically detecting network anomalies: 50%
- Performing automatic root cause analysis: 30%
- Planning future network capacity: 13%
- Gaining insights into encrypted traffic (such as video streaming): 7%
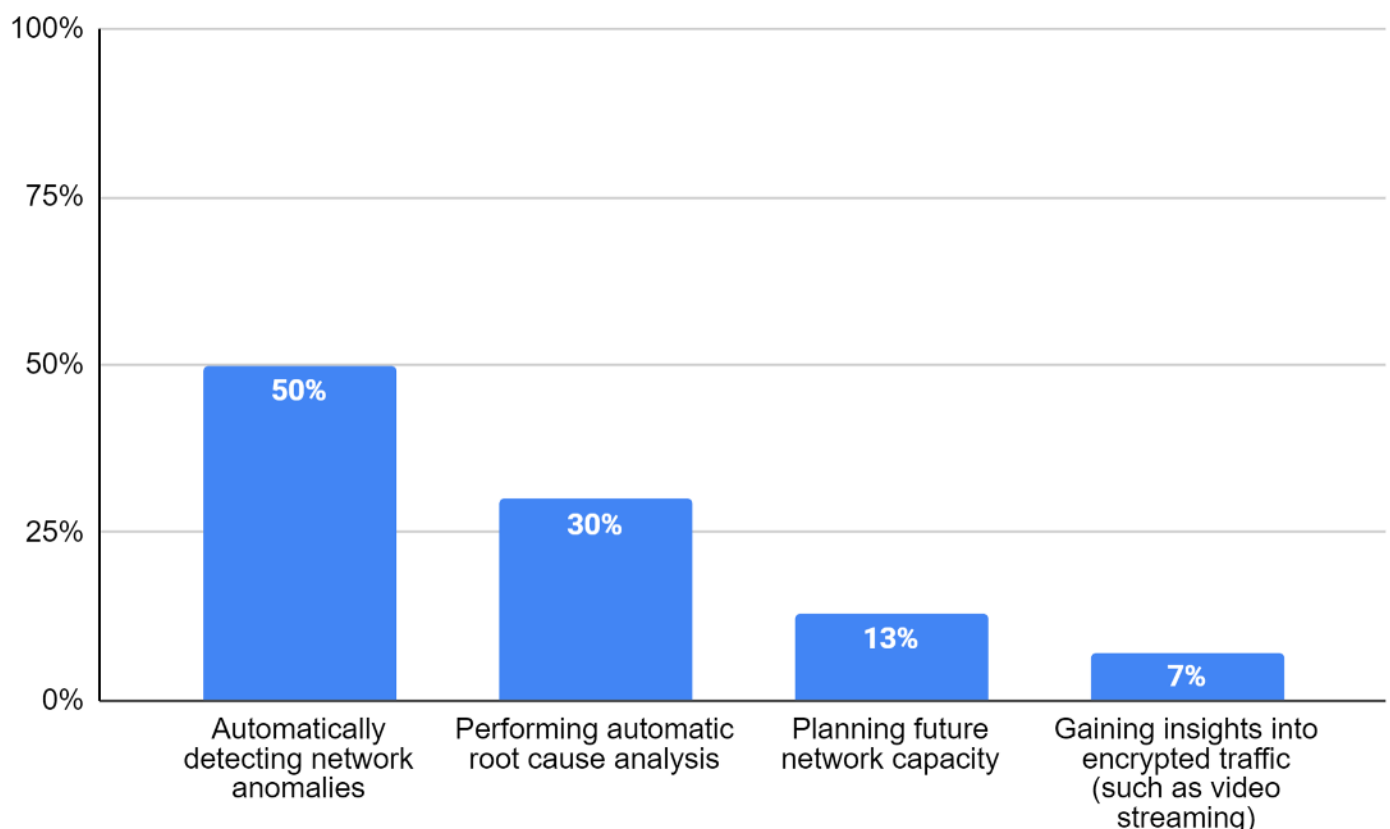
QUESTION 9: WHEN DOES YOUR ORGANIZATION PLAN TO IMPLEMENT THE NETWORK DATA ANALYTICS FUNCTION (NWDAF) IN THE 5G CORE?
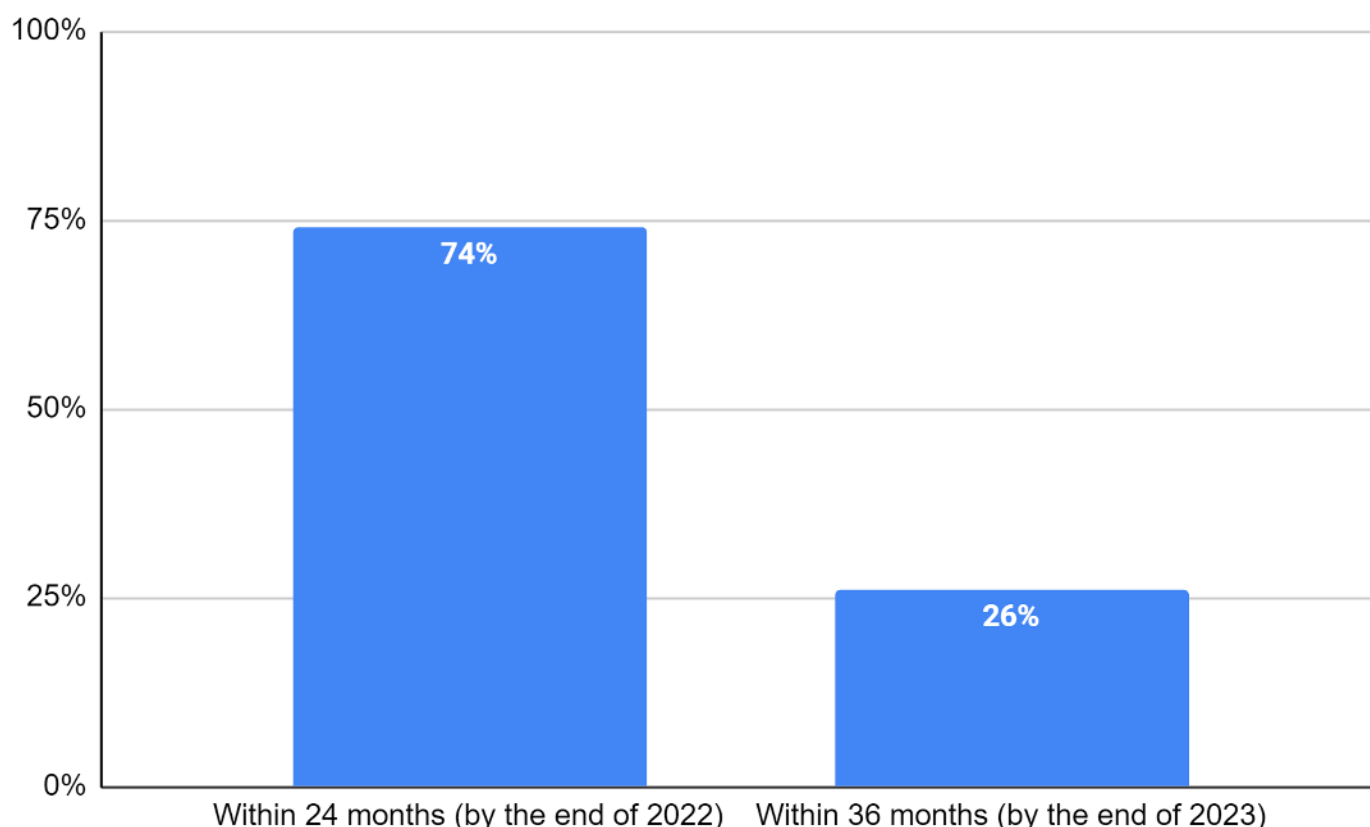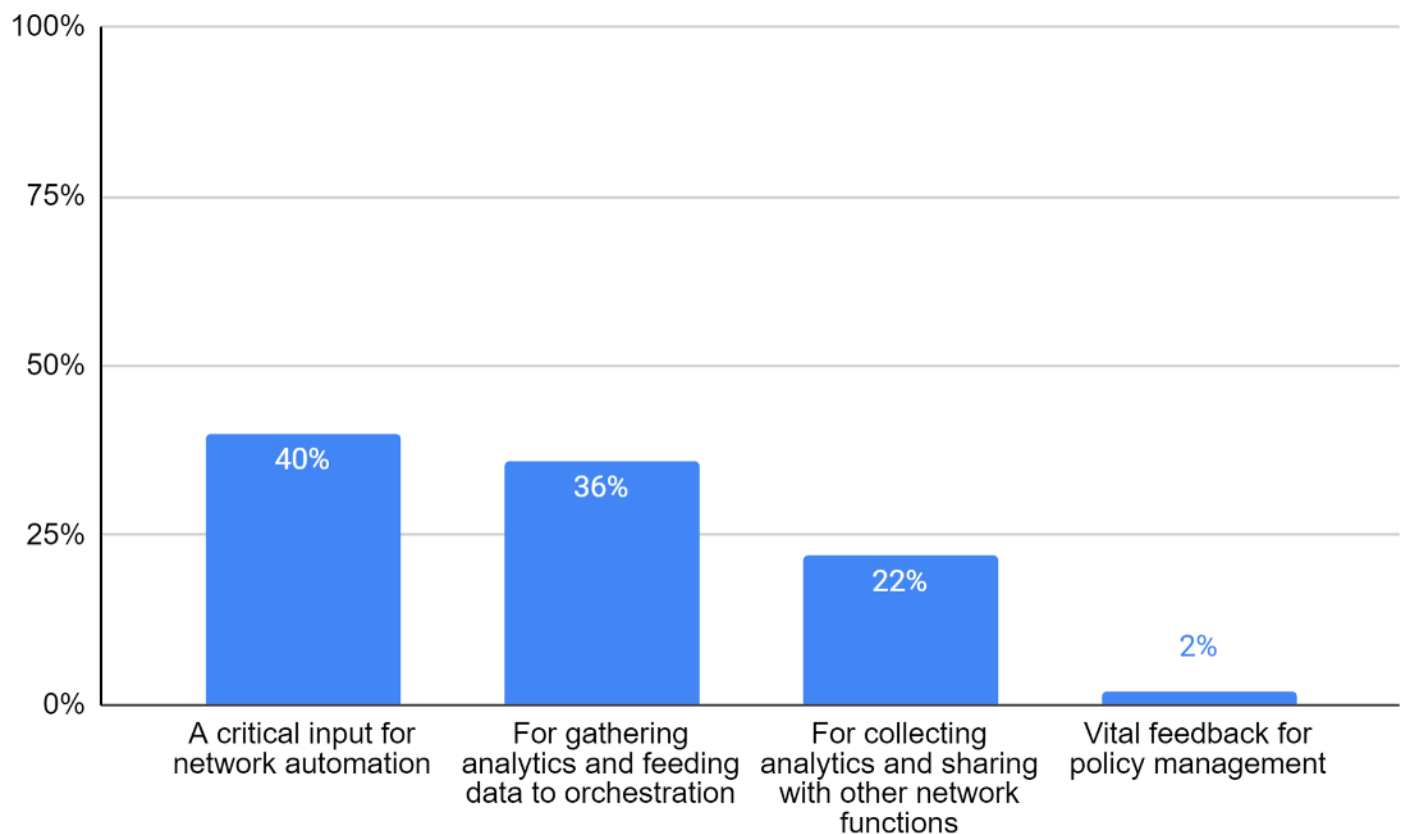

"74% OF ORGANIZATIONS PLAN TO IMPLEMENT NWDAF BETWEEN NOW AND END OF 2022"

KEY ROLE OF NWDAF IS TO PROVIDE CRITICAL INPUT FOR NETWORK AUTOMATION

QUESTION 10:

WHAT ROLE DO YOU SEE THE NWDAF PLAYING IN A CLOSED-LOOP APPROACH TO NETWORK MANAGEMENT?

Bar chart:
- A critical input for network automation: 40%
- For gathering analytics and feeding data to orchestration: 36%
- For collecting analytics and sharing with other network functions: 22%
- Vital feedback for policy management: 2%

SUMMARY OF THE 5G ASSURANCE OPERATOR SURVEY

01 Network Slicing is the top business driver for 5G Standalone deployment.

02 Automation to improve network operation is the top business priority for operator's network quality teams.

03 Service and Network automation have the highest impact on the customer experience in the operator's 5G network.

04 Offering end-to-end (RAN to the core) network monitoring is a key feature for selecting a service assurance vendor for 5G.

05 The top 3 service assurance methodologies to ensure the customer experience in 5G are - monitoring end-to-end (from RAN to the core), utilizing AI/ML to find network anomalies, and monitoring both the control and user plane.

06 End-to-end KPI/KQI monitoring is the top troubleshooting capability for providing the 5G network assurance.

07 The key aspect of the 5G network for service assurance to monitor is the handover between 4G/5G and different frequencies (C-band/Millimeter).

08 Automatically detecting network anomalies is the most important use case for AI/ML to improve service quality.

09 74% of operators plan to deploy Network Data Analytics Function (NWDAF) between now and the end of 2022, in the 5G Core.

10 NWDAF plays a key role in the closed-loop approach to network management by providing critical input for network automation.
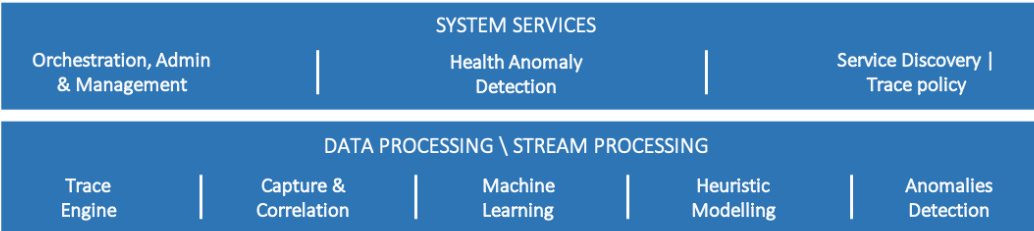
RADCOM

RADCOM (NASDAQ: RDCM) IS THE LEADING EXPERT IN CLOUD-NATIVE, AUTOMATED SERVICE ASSURANCE SOLUTIONS FOR TELECOM OPERATORS TRANSITIONING TO NON-STANDALONE AND STANDALONE 5G NETWORKS.

RADCOM NETWORK INSIGHTS

NETWORK TROUBLESHOOTING APPPLICATIONS	
Packet Analysis	Session Analysis
Network Analytics	RAN Analysis

CUSTOMER & SERVICE INSIGHT APPLICATIONS			
Video Analysis	Subsciber Groups	DPI	VoLTE
Customer Care	Roaming	Device Insights	IoT

External Outputs
Kafka Streaming | NFVO |BSS | OSS | CSV | API

RADCOM SERVICE ASSURANCE

SYSTEM SERVICES		
Orchestration, Admin & Management	Health Anomaly Detection	Service Discovery | Trace policy

DATA PROCESSING \ STREAM PROCESSING				
Trace Engine	Capture & Correlation	Machine Learning	Heuristic Modelling	Anomalies Detection

External Inputs
PM | Events | Alarms | CRM | Legacy Probes

EVENT BUS
(Data Processing, Streaming Analytics and Internal Communication)

DATA ACQUISITION

Network Events, Event Detail Records	RADCOM I.C.O.N	cProbes	Containerized Probes for packets Virtualized Probes for packets from VMs

RADCOM NETWORK VISIBILITY

Patented load balancing and packet brokering technology

5G	4G	2G/3G	IMS	VoIP	VoLTE

RADCOM

5G
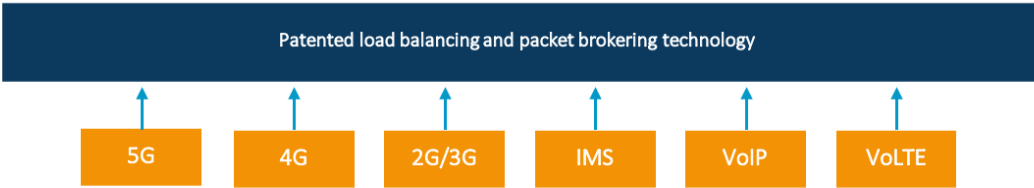
THANK YOU!

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