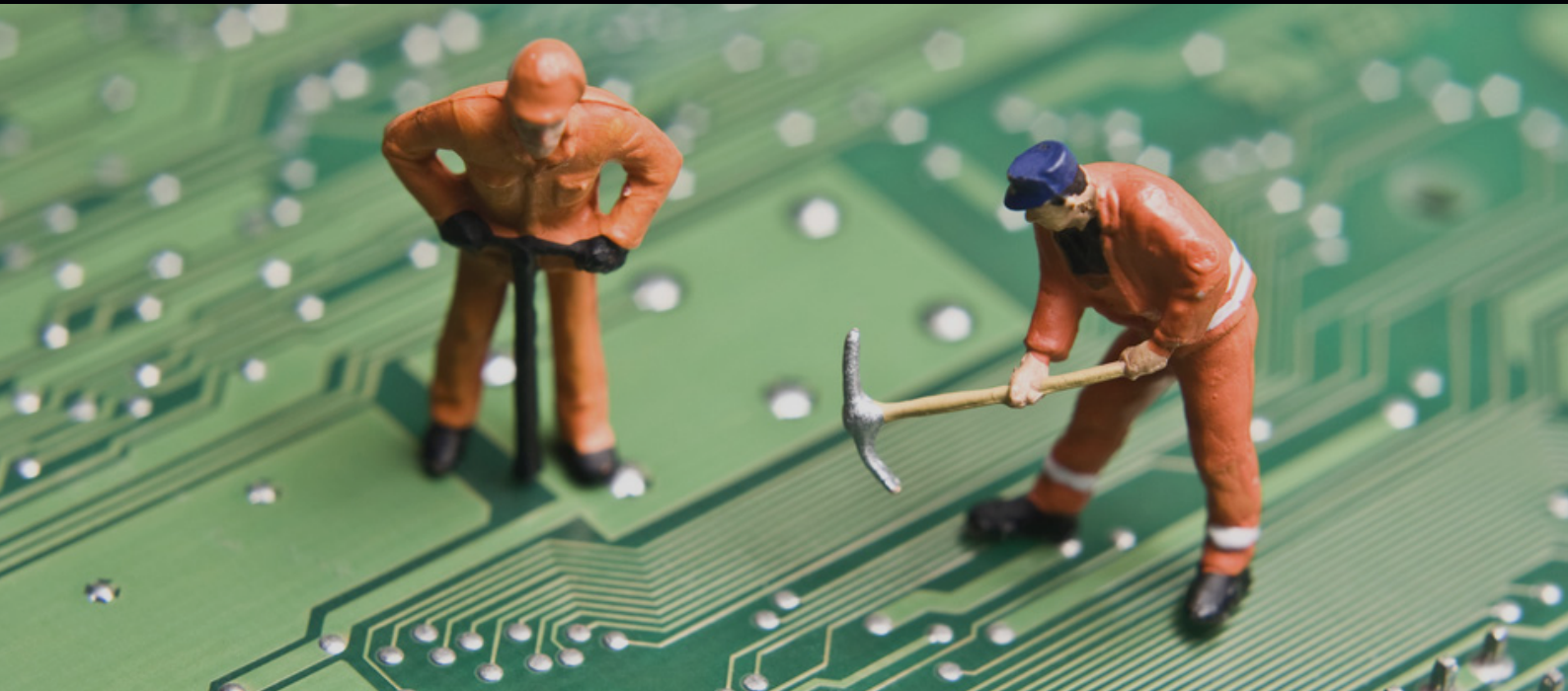# Utel

Utel Monitoring:
Troubleshooting distributed, heterogeneous networks

Identifying and troubleshooting issues in increasingly complex and heterogeneous networks are becoming essential tasks for operators looking to provide optimum quality network service to their customers. Find out how Utel can help.

Utel's **Monitoring System** is a distributed monitoring system that can scale from small configurations right up to multi-regional carriers. The Utel Monitoring System includes network performance information and troubleshooting features to ensure proactive network assurance.
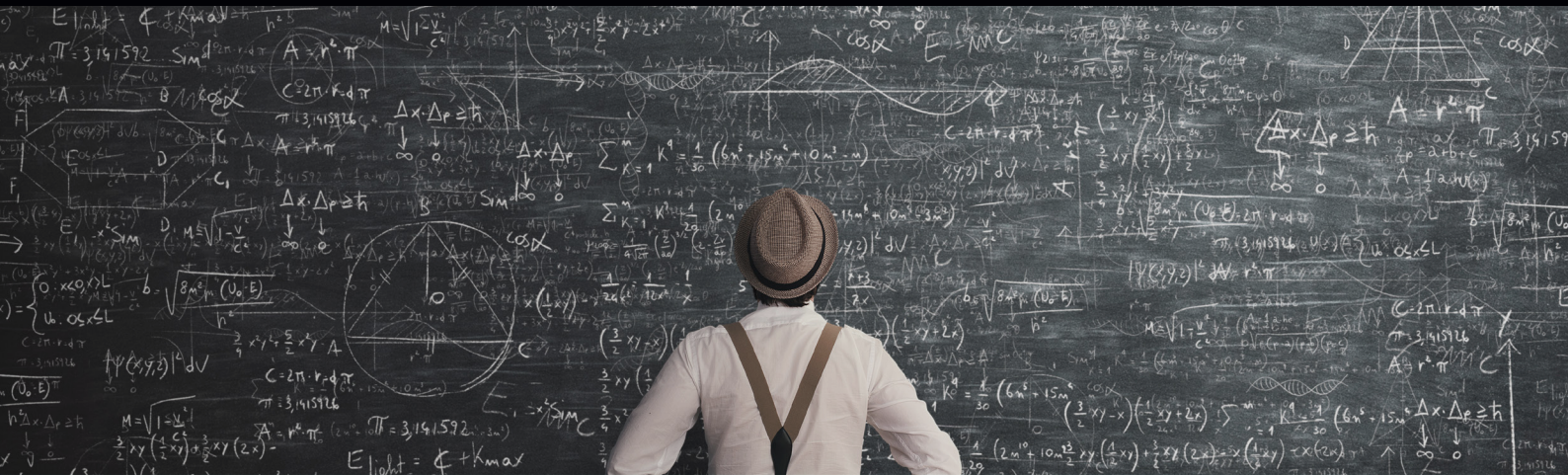
Background

Most network operators are confronted with a complex mix of legacy and current network technologies, to which new solutions are being added.

Many businesses, including mobile operators, MVNOs, call centres and traditional carriers, either operate or need to interface with telecom networks (both circuit-switch and packet-switched, and mobile and fixed). Telecom networks are often complex and comprise multiple components that are required to provide these important services.

On one hand, is the mobile network, comprising RAN and core network parts, that provides cellular services from 5G through 2G. On the other hand, there are fixed-line services using SIP, SS7 and other protocols.

Regardless of the technology used, all businesses need to know how the network is performing and identify potential issues and bottlenecks, as they depend on them for their operations and business decisions.
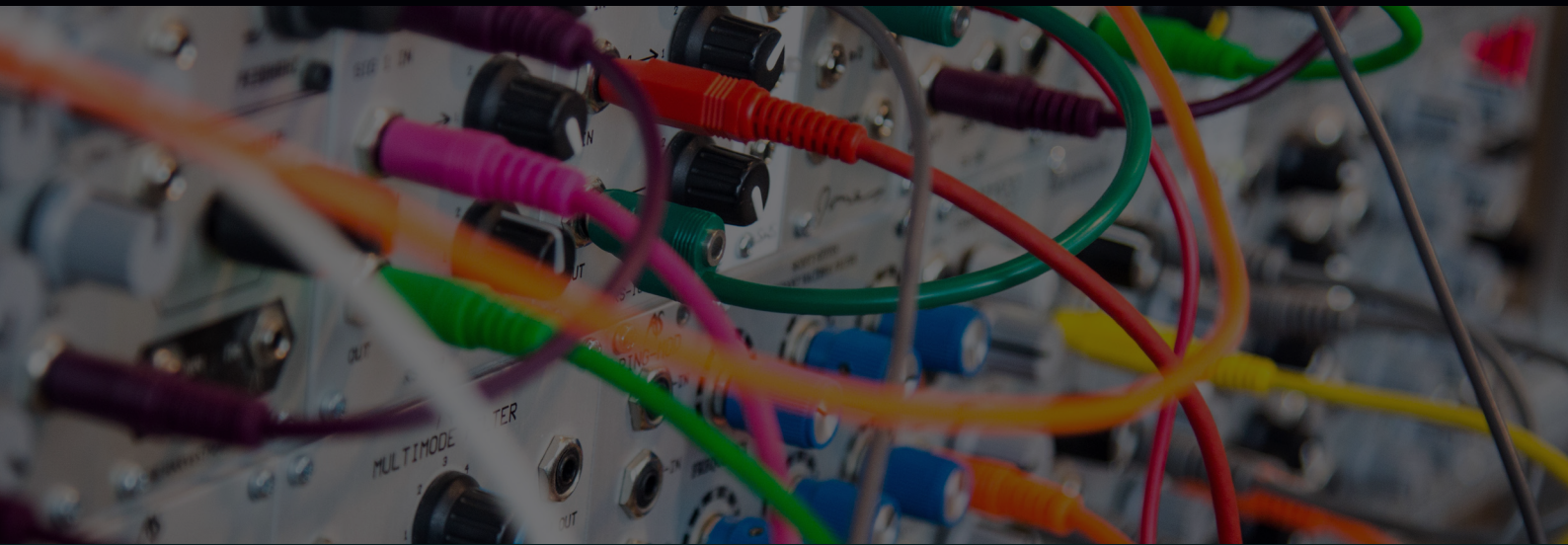
The business challenge

Visibility across all network domains is essential to ensure smooth service delivery and effective operations.

Whether telcos and operators run large international operations or smaller national infrastructures, the essential need for deep visibility into network activities remains the same. Put simply, it's vital that they have the capabilities to analyse and troubleshoot network errors, track down the root cause(s) of issues, and continuously provide network assurance, in real-time.

In turn, this ability enables network operators to respond to customer complaints regarding the quality of voice calls, SMS operation, mobile data, roaming and any other network service issue that subscribers may face.

The solution is made up of passive, virtual probes that collect signalling from the control plane of the network. Probes can be placed in different locations, wherever signalling from the network elements is available.

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...operators need a solution that can continually monitor and survey network traffic and troubleshoot problems when they arise. Every bit and byte that flows through the network every second is valuable to the business...

Adding new solutions brings new challenges

When provisioning new network equipment, often from different vendors, it's essential that it's tightly integrated and works in unison. Integrating new technologies with existing infrastructure requires testing and validation before launch in order to identify and eliminate potential issues that could impact user experience.

Even then, with increasing network complexity and heterogeneity, a variety of incidents and performance issues can occur at any time and impact network operations and user experience.

Network infrastructure equipment usually includes basic built-in OSS and management solutions. However, they often lack the sophistication and functionality required to fully dive into real-time network details, or to monitor end-to-end performance – particularly when unexpected issues or interoperability issues arise.

5G brings an entirely new delivery model, driven by DevOps

Furthermore, 5G and virtualised network environments require constant network upgrades and configuration alterations to meet rapidly changing service requirements, which creates another source of potential network issues. Setting up interconnections with new roaming partners or with neighbouring carriers is another activity that requires testing and validation to assure the configured interconnections, to perform accurate billing, and to ensure that traffic flow in both directions performs as expected.
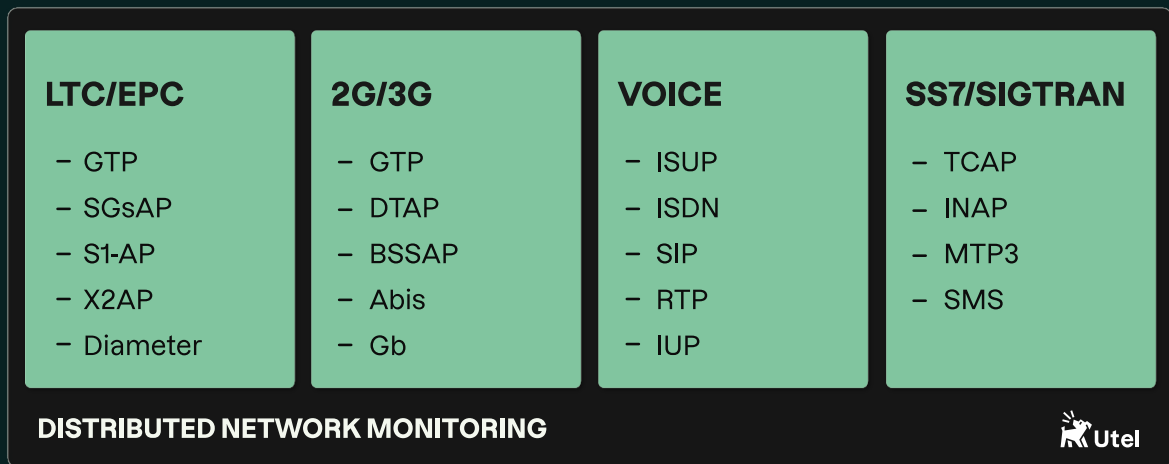
These recurring activities mean that operators need a solution that can continually monitor and survey network traffic and troubleshoot problems when they arise. Every bit and byte that flows through the network every second is valuable to the business, so it's essential that decision-makers have the tools to optimise network performance and operation, and ultimately the customer experience.

The Utel solution

Distributed monitoring for your network – across all domains.

Utel's Monitoring System is a distributed monitoring system that can scale from small configurations right up to multi-regional carriers. The Utel Monitoring System includes network performance information and troubleshooting features to ensure proactive network assurance.

LTC/EPC	2G/3G	VOICE	SS7/SIGTRAN
– GTP	– GTP	– ISUP	– TCAP
– SGsAP	– DTAP	– ISDN	– INAP
– S1-AP	– BSSAP	– SIP	– MTP3
– X2AP	– Abis	– RTP	– SMS
– Diameter	– Gb	– IUP	

DISTRIBUTED NETWORK MONITORING

Utel

Visibility into network performance and events from an independent platform provides capabilities that are way beyond the integrated OSS systems provided by network equipment vendors.

Powerful measures to recognise fraudulent traffic

The solution is made up of passive, virtual probes that collect signalling from the control plane of the network. Probes can be placed in different locations, wherever signalling from the network elements is available.

The signalling data collected by the probes then undergoes decoding and analysis, allowing real-time tracking of traffic from either network elements or directly from subscribers. Network transactions are correlated to provide historical records (XDRs) that can be viewed when necessary. The statistics generated from the historical XDRs provides a foundation for business insight.

Our solution provides a single, centralised view into end-to-end network performance – across all technologies - and acts as a dashboard for troubleshooting issues, both in real-time and using historical records. It allows technicians and engineers to gain insight into the network by monitoring and analysing transactions and events, right down to decoding the protocol messages captured from the network. The solution also allows business teams to make data-driven decisions by analysing the final statistics and revealing new business insights.

Visibility into network performance and events from an independent platform provides capabilities that are way beyond the integrated OSS systems provided by network equipment vendors.

Benefits

Stay ahead of network changes and ensure efficient service delivery.

As networks become increasingly complex and heterogeneous, it's more important than ever for operators and network service providers to have full real-time visibility into network performance and to be alerted to issues as soon as they arise before they impact end-user experience.

At the same time, upgrades, new configurations, and service launches must be tested and validated before, during and after launch. Utel helps network operators to identify the root causes of network errors and performance issues, and to take remedial action in a proactive and continual manner. It allows operators to assure the quality of voice calls, SMS operation, mobile data, roaming and other network services.

Real-time, agile operations

The Utel solution used by engineers, technicians and business teams offers multiple benefits, including:

- Enabling rapid response to support tickets and incident escalations

- Near real-time statistics and data driven alerts, supporting agile operations

- Providing key insights for improving network performance, minimising errors and increasing reliability

- Performing proactive, continuous monitoring of the network to identify issues and prevent incidents

- Allowing deep packet analysis and protocol decoding

- Offering scalability – from small to large installations, Utel can scale to meet current and future network requirements

- Delivering end-to-end monitoring of subscribers, protocols, and network traces.

- Enabling data-driven decision-making

- Improving ROI

Utel provides businesses with valuable insight into their network enabling them to identify and discover new business potential and turn data into value. Troubleshooting can be performed in real-time, or historically to identify problems proactively or reactively, helping to improve operational capacity and decrease the operational burden.

Conclusion

Deep insight into your networks, driving operational optimisation and enhancements.

The Utel solution collects traffic data from virtual probes deployed anywhere in the network, providing valuable insight, down to the protocol messaging and transactions, that are occurring in the network in near real-time.

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The Utel solutions are an essential business tool for network testing and validation, resolving interoperability issues, troubleshooting subscriber and equipment issues, predicting network behaviour, and tracking down root causes of network issues. It allows you to boost customer satisfaction and, in turn, reduce churn, protect revenue, and maximise new business opportunities.

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