

# End-to-End Voice Assurance



**Anritsu**  
Advancing beyond



# Visibility is the key to network automation.



Ensuring high-quality voice services is critical for operators aiming to provide superior customer experiences and maintain a competitive edge. According to the Ericsson Mobility Report, VoLTE subscriptions will reach 7.6 billion by 2028, emphasising the necessity for robust and reliable VoLTE performance monitoring solutions.

### Challenges

Mobile Network Operators (MNOs) face several critical challenges, particularly with VoLTE (Voice over LTE) and VoNR (Voice over New Radio), including call disruptions, interoperability issues, and ensuring high-quality voice and video calls. Traditional performance monitoring systems often fall short due to fragmented data records and limited end-to-end visibility, resulting in inefficiencies and, ultimately, customer dissatisfaction.

### Our Solution

Anritsu's End-to-End Voice Assurance solution offers comprehensive end-to-end VoLTE and VoNR performance monitoring, seamlessly integrating data from 4G and 5G Access and Core IMS networks. This innovative solution consolidates all protocols into a unified view, providing operators complete visibility and control over their packet-switched voice services.

### Value Delivered

#### Enhanced Customer Experience:

Reduces call drops, improves voice quality, and ensures seamless handovers, leading to higher customer satisfaction.

#### Operational Efficiency:

Automates troubleshooting processes and provides detailed insights, reducing the time and resources required for issue resolution.

#### Competitive Advantage:

Empowers operators to compete effectively with OTT services by delivering superior VoLTE & VoNR quality and reliability.

#### Long-term Investment:

Optimises spectrum utilisation and network robustness, making it a strategic investment for future network evolution.

### Key Features

#### Unified View:

Combines meaningful information from access and core networks into a single, multidimensional data record, ensuring no gaps in monitoring.

#### End-to-End Visibility:

Tracks every element from eNodeB/gNodeB to IMS nodes, enabling precise identification and troubleshooting of issues. This visibility is the key to network automation.

#### Performance Monitoring:

Monitors call setup and drop performance, voice quality, and other critical KPIs across the entire VoLTE and VoNR ecosystems.

#### Roaming Support:

Identifies and optimises VoLTE and VoNR performance for roaming scenarios, enhancing service quality for both local and international users.

#### Real-Time Analysis:

Provides real-time detection and diagnosis of issues, ensuring immediate action to maintain service quality.

**Anritsu's End-to-End Voice Assurance solution is designed to meet the stringent demands of modern telecommunication networks. It provides unparalleled end-to-end visibility and performance monitoring for VoLTE and VoNR services. By leveraging this solution, operators can ensure high-quality voice services, optimise their network performance, and enhance customer satisfaction, all while preparing for future advancements in network technology.**





...a single, cohesive data record for each call...



As the telecommunications industry continues to evolve, providing high-quality VoLTE and VoNR services remains a top priority for service providers. The transition to 4G and beyond, including the emergence of 5G, has brought significant improvements in speed and connectivity but also poses challenges in maintaining seamless voice communication. Anritsu's End-to-End Voice Assurance addresses these challenges head-on, offering an advanced, comprehensive approach to VoLTE and VoNR performance monitoring.

### Key Challenges Addressed

#### Fragmented Monitoring Systems:

Traditional performance monitoring systems often involve separate data records for different network parts, such as LTE access, 5G access and Core IMS. This fragmentation results in divided insights and hinders effective troubleshooting. Operators struggle to correlate data from multiple sources, leading to longer resolution times and higher operational costs. By unifying these disparate data records, Anritsu's End-to-End Voice Assurance brings comprehensive visibility, for quicker identification and resolution of network issues.

#### Quality Assurance:

Ensuring high-quality VoLTE and VoNR calls is paramount for customer satisfaction. Operators face challenges such as call drops, poor voice quality, and inefficient handovers, which directly impact user experience. End-to-End Voice

Assurance continuously monitors key performance indicators (KPIs) like call setup time, call drop rate, and voice quality metrics (e.g., MOS, packet loss). This real-time monitoring helps operators maintain high service quality, detect potential issues early, and implement corrective measures promptly.

#### Interoperability Issues:

Integrating multiple technologies, including legacy networks (2G/3G), VoIP services, and newer 5G networks, adds complexity to network management. Different teams often manage these technologies, complicating the troubleshooting process and increasing the risk of miscommunication. Anritsu's End-to-End Voice Assurance bridges this gap by providing end-to-end visibility across the entire voice ecosystem. This unified approach simplifies the management of multi-technology environments, ensuring seamless interoperability and efficient operations.



maintain high customer satisfaction and loyalty levels.

## Enhanced Customer Experience

## Operational Efficiency

## Competitive Advantage

By delivering superior VoLTE and VoNR quality and reliability, Anritsu's End-to-End Voice Assurance empowers operators to compete effectively with Over-the-Top (OTT) services. High-quality voice services are a crucial differentiator in a crowded market, helping operators attract and retain customers. The solution's ability to provide real-time insights and proactive management ensures

## Long-term Investment

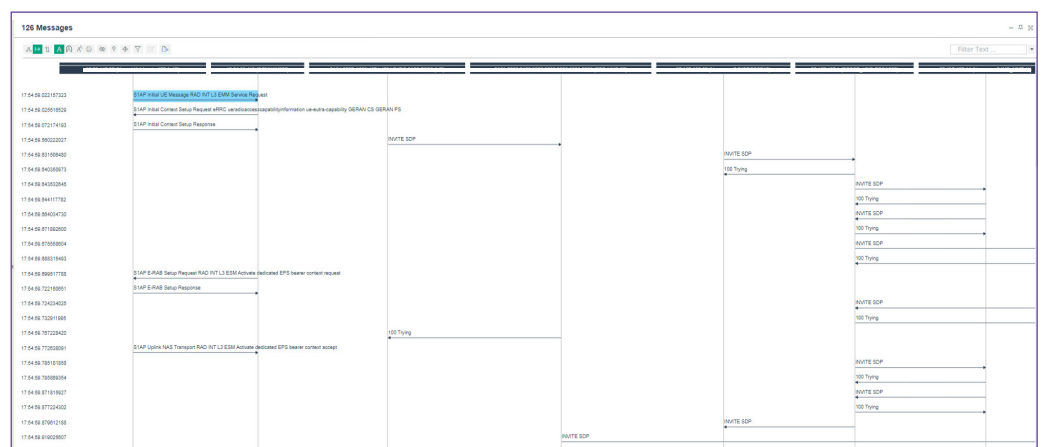
The solution also:

- Provides unique root causes for Core and Access
- Provides monitoring per Core IMS Network Element
- Provides accurate Cell Location for SIP calls

## Technical Highlights

## Unified Data Records

Uniritsu's End-to-End Voice Assurance solution integrates SIP/RTP and S1-MME protocols into a single, cohesive data record for each call. This unification captures all relevant information from both the originating and terminating sides, providing a





# The solution automates many troubleshooting processes...



holistic view of the call. The detailed tracking includes call setup, quality, and release causes for VoLTE and VoNR, enabling operators to identify and address issues precisely. This comprehensive data collection reduces the complexity of monitoring and troubleshooting, enhancing operational efficiency.

### End-to-End Visibility

End-to-End Voice Assurance offers complete visibility across the entire VoLTE and VoNR ecosystem, from the eNodeB and gNodeB in LTE and 5G access networks to the Core IMS nodes. This extensive coverage allows for precisely identifying performance bottlenecks and root causes of issues. Operators can monitor the performance of each network element, ensuring optimal functioning and quick resolution of problems. The solution's ability to provide accurate call location data further enhances troubleshooting capabilities, making pinpointing and addressing issues easier.

### Performance Monitoring

End-to-End Voice Assurance continuously monitors critical KPIs such as call setup time, call drop rate, and voice quality metrics. It provides detailed insights into VoLTE and VoNR performance, ensuring operators can maintain high-quality voice services. Real-time analysis and alerts enable proactive network performance management, allowing operators to detect and resolve issues before they impact users. This capability is crucial for maintaining customer satisfaction and minimising service disruptions.

### Real-Time Analysis and Alerts

With End-to-End Voice Assurance, operators receive real-time detection and diagnosis of issues and automated alerts for any deviations from expected performance. This functionality allows for immediate action to maintain service quality. The system's proactive approach ensures that potential problems are addressed swiftly, reducing downtime and enhancing the overall user

experience. Integrating real-time analytics empowers operators to stay ahead of network issues and maintain optimal performance.

### Roaming Support

The End-to-End Voice Assurance solution identifies and optimises VoLTE and VoNR performance for roaming scenarios, ensuring consistent service quality for both local and international users. It provides detailed data on roaming partners, helping operators manage and enhance their roaming agreements. By monitoring KPIs specific to roaming, such as call success rates and quality metrics, it enables operators to deliver customers a seamless experience, regardless of location. This capability is essential for maintaining competitive advantage in a global market.

**“Reduced investigation time from 60 minutes to 60 seconds”**





# Anritsu

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Anritsu A/S  
c/o Regus Winghouse  
Ørestads Boulevard 73, 4th floor  
2300 Copenhagen S  
Denmark  
Phone: +45 (0) 7211-2200

[info@anritsu.com](mailto:info@anritsu.com)

