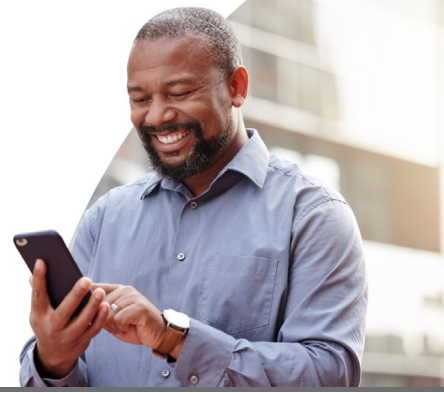




Gain Visibility Into Your VoLTE Networks with Ribbon Analytics



Market Dynamics

With people around the world increasingly using mobile devices as their primary means of communication, mobile network operators (MNOs) are aiming to exploit the potential business opportunities that has emerged with Voice over LTE. MNOs can now differentiate themselves with VoLTE by offering their customers rich communication services, such as HD voice, video and messaging services.

There are over 1000 models of VoLTE enabled devices in the world today, of which the number of devices such as smartwatches which are supporting VoLTE has seen a significant increase in consumer adoption rate, according to GSMA. For these reasons, operators need a holistic view of the network to preempt issues and resolve problems before they impact subscribers.

Key Problems Solved

- **Identify and diagnose VoLTE problems** such as ineffective registrations, ineffective calls, signaling delays, call quality (low MoS scores, high jitter, packet loss), one-way calls, call drops, media gaps, etc..
- **Identify subscribers impacted** by network problems
- Provide **visibility of heavy users** and each subscriber's call sessions and their experience
- Proactive problem analysis with **alarms, reports, and network wide ladder diagrams**

End-to-End Visibility into your VoLTE Network with Ribbon Analytics

MNOs need powerful analytics that can perform the important task of uncovering and pinpointing reliability issues in their VoLTE network services.

Ribbon Analytics' VoLTE Network and Customer Experience Management applications delivers centralized monitoring with actionable end-to-end visibility from the network down to the subscriber levels. These analytics applications isolate the IMS network management challenges by collecting, correlating and deriving meaningful KPIs from data across the network. Ribbon Analytics' solution for VoLTE deployment's aims to provide an end-to-end view of customer experience, application performance, service quality, network health and interoperability.

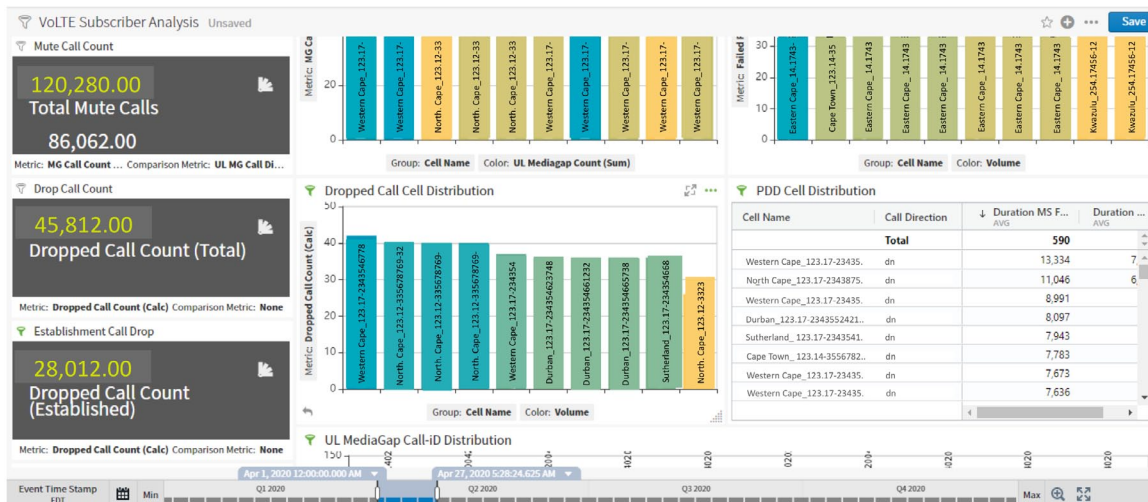


Figure 1: Example of a VoLTE performance dashboard

VoLTE Service Assurance

To address several VoLTE network and service related problems, Ribbon Analytics arms operators with VoLTE Network Performance and Customer Experience Management applications with out-of-box dashboard, reports and workflows.

Ribbon's VoLTE analytics has been instrumental in helping MNOs to monitor and manage their VoLTE deployments. The solution provides:

- Detailed visibility of VoLTE network performance at national, regional and sub-regional levels
- Analyze performance based on device, gateway, APN, x-CSCF, location and signaling events
- Agnostic network monitoring & actionable subscriber analytics

Ribbon VoLTE service assurance analytics solution helps MNOs expedite troubleshooting, intelligently manage their network, and deliver advanced insights reducing OPEX and streamlining CAPEX expansions while improving the overall subscriber experience.

Key Features:

- End-to-end IMS network visibility, allowing MNOs to track down call failures, and measure latency and jitter
- Ability to troubleshoot complex interactions between transport network, IMS network, and services
- VoLTE and IMS network, and subscriber performance metrics to discover end-to-end interoperability problems
- Distinguish network, application and device issues associated with poor subscriber experience
- Network-wide SIP ladder diagram correlation for troubleshooting service quality issues
- Highly scalable solution that can meet the needs of any size IMS network
- Data collection via a non-intrusive software based probe that analyzes 100% of the packets in real time

VoLTE Analytics Use Case & Problem Examples:

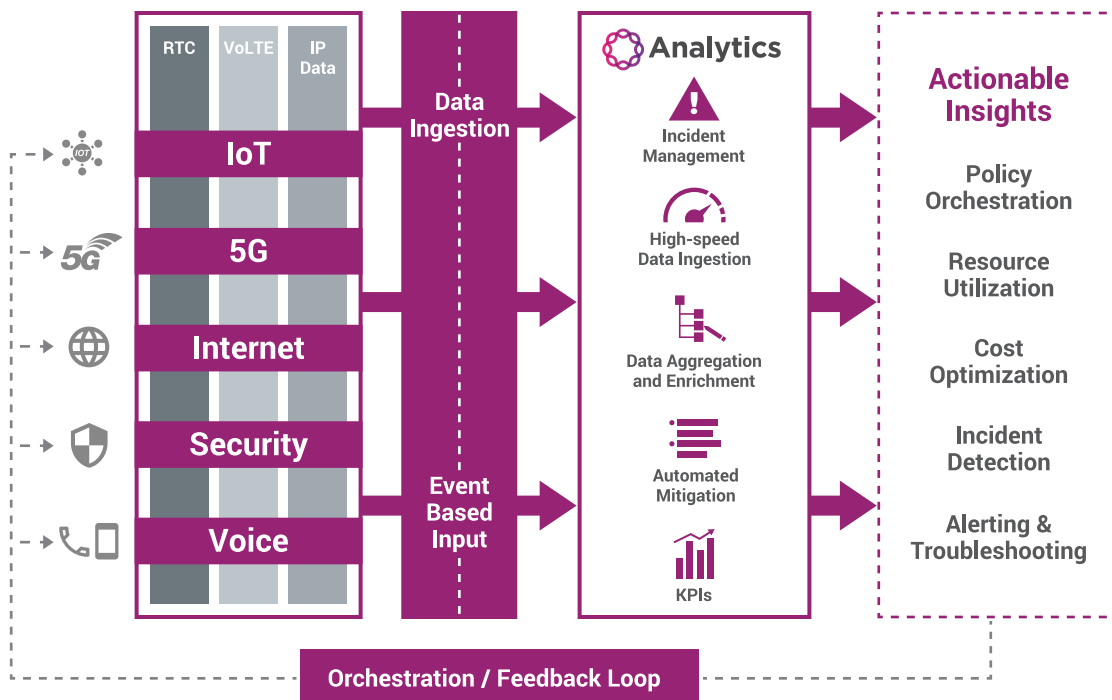
- **Failed call attempts:** "I can't seem to make a call"
- **Dropped calls:** "my calls keep dropping"
- **One-way/No-media detection:** "there are both-ways silent calls or one-way calls"
- **Media gap detection:** "there are silent periods or mutes in the media"
- **VoLTE packet loss information:** "my voice quality is bad"
- **MOS scores:** "SLA of voice calls"
- **Error code distribution:** "what is the quality of my VoLTE network"
- **Call setup time:** "it takes a long time for calls to connect"
- **Voice call (session) duration:** "analyze voice call durations"
- **Subscribers impacted by SIP errors:** "analyze subscribers that are impacted by an outage"
- **Interactive troubleshooting:** "need to know how my region is performing"
- **Call type distribution:** "need to know how many calls of each type are on the network"

Ribbon Analytics Platform

Ribbon Analytics' big-data, virtualized platform underpins all of its analytics applications and solutions. From fast-path content ingestion, to reporting, to API capabilities, the Ribbon Analytics platform is built for scalability, reliability, and performance while allowing the operators to fully comply with privacy policies.

The Ribbon Analytics platform and associated applications enable visibility right down to the application, subscriber, device, and location level, allowing you to tap rich data sources that produce the necessary insights needed to develop, manage, and deploy highly innovative and responsive services. Ribbon eliminates the average two week data analysis period, providing immediate actionable intelligence that arms you with real-time, cross-correlated, time-aligned data across access technologies, services, protocols, end-to-end applications and subscribers.

With Ribbon's big data solutions, you have ready access to the data that enables smart decision making, especially when it comes to investments—empowering you to take a proactive competitive stance in light of a dynamic industry that is continuously updating content and services to meet the innovations of the latest apps, devices, connections, and technologies.



Contact Us

Contact us to learn more about Ribbon solutions.