

TELCO DATA ANALYTICS SOLUTION FOR QOE AND QOS ENHANCEMENT

Challenge

In a world of increasing network convergence, where customer expectations and demands continue to grow, communication service providers (CSPs) need to assure optimal network performance and quality for their customers. To guarantee the best level of quality of experience (QoE) and service (QoS), and to provide technologies needed to manage network expansion and control, real-time network and subscriber analytics is key.

Solution

Rohde&Schwarz and Cardinality provide unique real-time network information for CSPs to not only investigate and resolve customer and service issues fast, but also to optimize the network for an outstanding user experience. By combining the IP probe R&S®Net Sensor OEM by Rohde&Schwarz with the Perception Platform by Cardinality, CSPs get a software-only solution generating deep insights into network traffic and subscriber behavior in real time.

TWO LEADING-EDGE TECHNOLOGIES COMBINED

R&S®Net Sensor OEM

R&S®Net Sensor OEM is a ready-to-use software IP probe based on the deep packet inspection (DPI) engine R&S®PACE 2. It provides fast packet processing in real time and classifies both plain and encrypted IP traffic for detailed visibility. Additionally, it correlates control and user plane to keep track of the specific subscriber sessions and experiences in a network. R&S®Net Sensor OEM also provides aggregated information on the collected data. This includes applications and protocols by user, time, duration, frequency and usage.

Perception Platform

The Cardinality Perception Platform is a big data analytics solution that incorporates complex data ingestion and large-scale analytics in a single product using a micro-services architecture. Thanks to the Perception Platform's analytics capabilities and in-depth reports of subscriber behavior, CSPs can make informed decisions about future actions by using machine learning assistance. The platform provides CSPs with insights into complex use cases such as cell experience, operational intelligence and radio access network (RAN) optimization by closed loops.



Key features of joint solution

- ▶ Cutting-edge technology combined: DPI processing and big data analytics
- ▶ End-to-end data extraction, correlation and aggregation
- ▶ Combined real-time data from the wire with internally available but distributed information
- ▶ On-demand troubleshooting down to the individual subscriber
- ▶ Intuitive and simple GUI, from ingesting data to self-service analytics
- ▶ Enabled use cases such as operational intelligence, cell experience, control plane analytics, marketing and customer experience management

Solution benefits

- ▶ Enhanced customer insights
- ▶ Reduced operational costs
- ▶ Improved service quality
- ▶ Increased customer retention
- ▶ Maximized return on investment
- ▶ Optimized radio access network
- ▶ Flexible pricing concept detached from bandwidth growth

DELIVERING THE RIGHT DATA INSIGHTS

R&S®Net Sensor OEM is integrated into the Cardinality Perception Platform, supporting different use cases and types of end users. Multiple R&S®Net Sensor OEM IP probes use DPI technology to collect real-time raw data generated by subscribers and network equipment, and pre-process it. Even fully encrypted traffic can be detected and classified. The data collected includes not only applications and protocols used, but also flow counters, i. e., the amount of packets and bits transferred per second. At a central streaming point, the pre-processed data is then decoded and further details are extracted to enrich the available information before it is sent to the Cardinality Perception Platform, where the data becomes available for display and analysis. The Cardinality Perception Platform converts the input from all data feeds and processes it into the most appropriate format for each use case, allowing for better troubleshooting. The customizable GUI provides actionable insights and provides comprehensive reports or prepares the data for other applications at huge scale.

TECHNICAL FEATURES

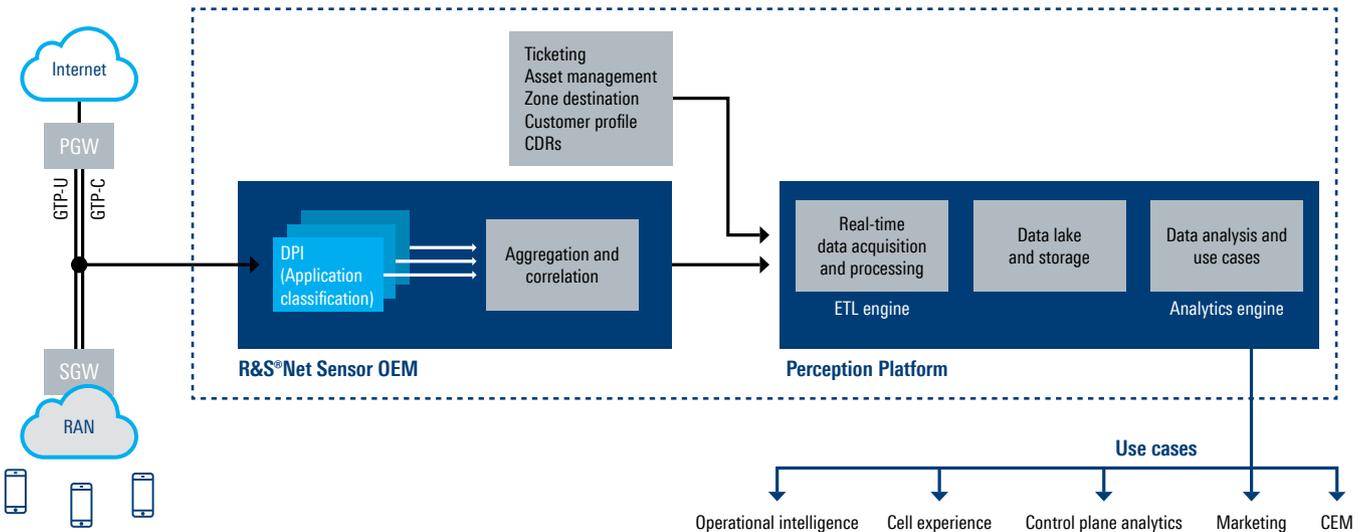
R&S®Net Sensor OEM

- ▶ Highly scalable up to several Tbps
- ▶ Runs on COTS hardware or in virtualized or cloud environments
- ▶ Data export for big data systems supporting multiple APIs (HDFS, Kafka, CSV and more)
- ▶ Single interface to external systems; even in multiple-probe deployments scenarios
- ▶ Mobile and fixed network support (GTP, Radius, VLAN, L2TP, MPLS and more)
- ▶ Weekly signature updates

Perception Platform

- ▶ Flexible data acquisition APIs for approx. 50 B complex rows/day of DPI data, CDRs, billing, CRM, etc.
- ▶ High-performance data processing (70 K lookups/sec.)
- ▶ Data throughput of over 1 M events/sec.
- ▶ Prediction modeling for data analysis

Telco data analytics enabled by R&S®Net Sensor OEM and Perception Platform



ipoque GmbH
A Rohde & Schwarz Company
 Augustusplatz 9, 04109 Leipzig
 Info: +49 (0)341 59403 0
 Email: info.ipoque@rohde-schwarz.com
 www.ipoque.com

Rohde & Schwarz GmbH & Co. KG
 www.rohde-schwarz.com

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