4G / 5G SUBSCRIBER AND IOT ANALYTICS

SILVERENGINE

Subscriber Experience Analytics Platform

VoIP - QoE

2022-11-15 09:00:00

95.7

-0.1% last 24h

Distribution

poor: 1%
good: 9%
excellent: 90%

- excellent
- good
- poor
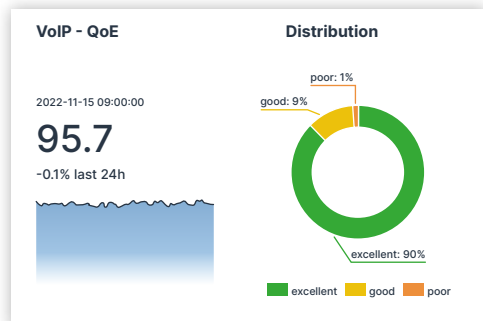
RTP - Packet Loss per Subscriber and Hour

Date | Hour	SP Calling Party	Σ [Calls]	Ø [lossIN] %	Ø [loss OUT] %	Ø [loss IN/OUT] %
22|11|01 13.00	a20	24	11.05	0	5.53
22|11|01 13.00	a20	51	10.97	0	6.10
22|11|01 13.00	a15	45	11.63	2.11	5.37
22|11|01 13.00	a15	27	6.39	3.99	5.23
22|11|01 13.00	a15	508	0.02	5.07	2.55
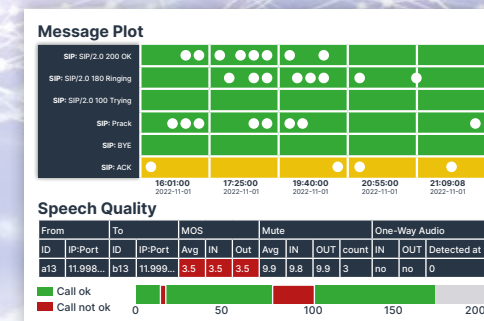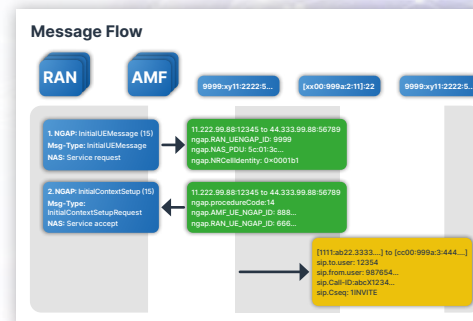
Analyze network and service performance **in real-time** using correlated control and user plane data.

Call Tracer Tool

Message Flow

RAN   AMF

9999:xy11:2222:5...   [xx00:999a:2:11]:22   9999:xy11:2222:5...

1. NGAP: InitialUEMessage (15)
Msg-Type: InitialUEMessage
NAS: Service request

11.222.99.88:12345 to 44.333.99.88:56789
ngap.RAN_UENGAP_ID: 9999
ngap.NAS_PDU: 5c:01:3c...
ngap.NRCellIdentity: 0=0001b1

2. NGAP: InitialContextSetup (15)
Msg-Type: InitialContextSetupRequest
NAS: Service accept

11.222.99.88:12345 to 44.333.99.88:56789
ngap.procedureCode:14
ngap.AMF_UE_NGAP_ID: 888...
ngap.RAN_UE_NGAP_ID: 666...

[1111:ab22.3333....] to [cc00:999a:3:444...]
sip.to.user: 12354
sip.from.user: 987654...
sip.Call-ID:abcX1234...
sip.Cseq: 1INVITE

Message Plot

	16:01:00 2022-11-01	17:25:00 2022-11-01	19:40:00 2022-11-01	20:55:00 2022-11-01	21:09:08 2022-11-01
SIP: SIP/2.0 200 OK					
SIP: SIP/2.0 180 Ringing					
SIP: SIP/2.0 100 Trying					
SIP: Prack					
SIP: BYE					
SIP: ACK					

Speech Quality

From		To		MOS			Mute			One-Way Audio		
ID	IP:Port	ID	IP:Port	Avg	IN	Out	Avg	IN	OUT	count	IN	OUT	Detected at
a13	11.998...	b13	11.999...	3.5	3.5	3.5	9.9	9.8	9.9	3	no	no	

- Call ok
- Call not ok

0   50   100   150   200

Full 5G SA support and **VoNR** enabled with built-in troubleshooting aid correlating poor speech quality with C-plane events, automatic logical grouping of 5G NF.

With our solutions you can stay ahead of the competition by focusing on true end-user service experience while lowering CAPEX as well as OPEX costs.

Data visualization

Business critical indicators insights to improve user experience are visualized in dashboards and consolidated in reports. Our dashboards enable telco operators to easily identify reasons for poor customer experience and thus, derive measures to reduce churn.

Data filter and drill-down

The underlying data is aggregated bottom-up enabling telco operators to always drill-down and analyze data at subscriber level.

Prediction

Our tools predict and provide means to prevent SLA degradations in specific network slices using machine learning.

Proactive alerts

Customized reports and alerts are automatically sent to users.

YOUR BENEFITS

✓ Preconfigured use cases for **5G NSA, 5G SA, VoNR, Mobile Cloud Gaming** and **IoT**

✓ **Customizable** to **individual** use cases

✓ **Multi-vendor** network probe and SCP platform support

✓ **Open data** model
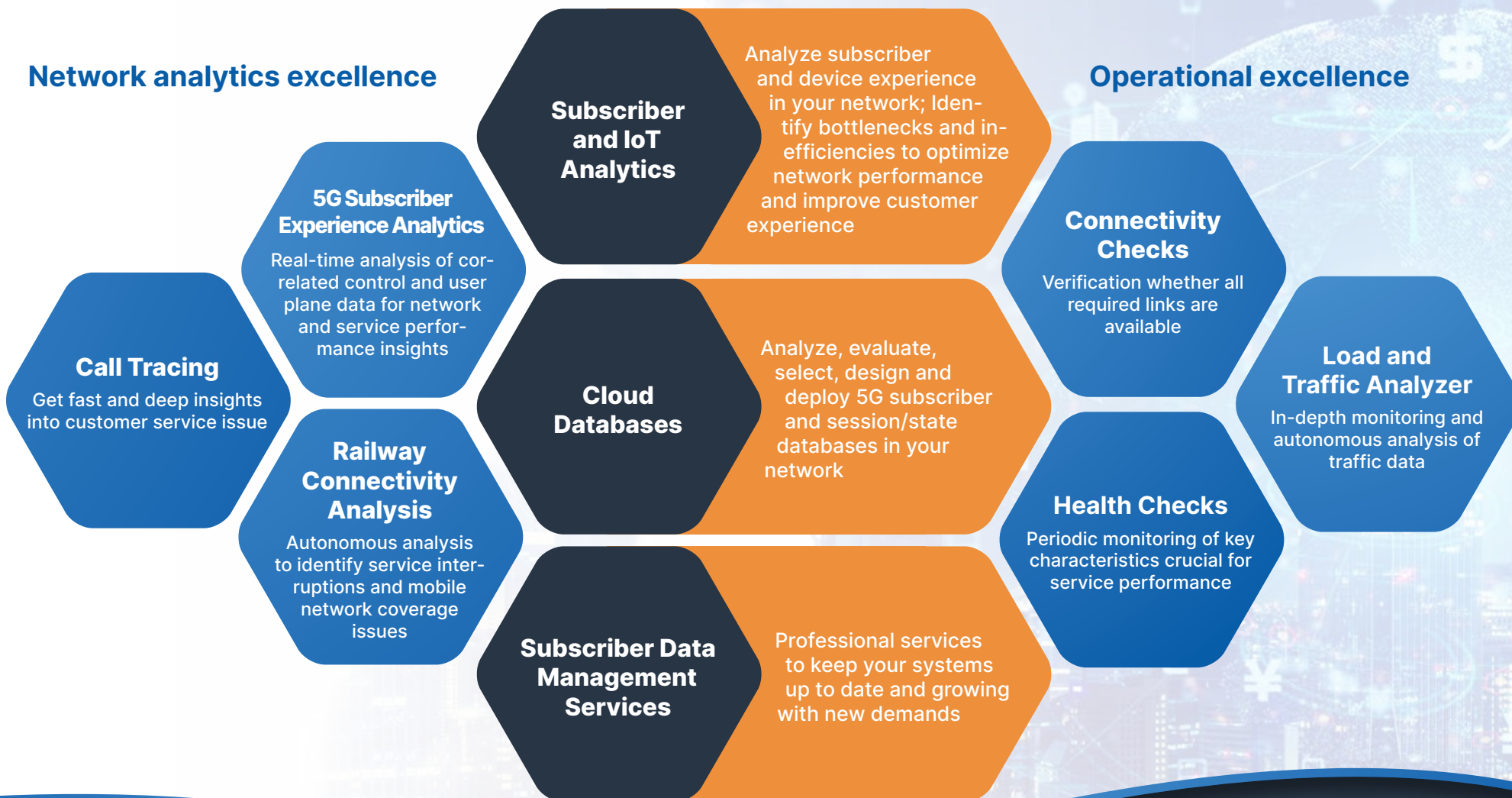
✓ Easily integrate **3rd party applications** via APIs

DISSECT SUBSCRIBER NETWORK SERVICES DATA
to increase service quality and operational efficiency

SILVERENGINE

Network analytics excellence

Operational excellence

Subscriber and IoT Analytics

Analyze subscriber and device experience in your network; Identify bottlenecks and inefficiencies to optimize network performance and improve customer experience

5G Subscriber Experience Analytics

Real-time analysis of correlated control and user plane data for network and service performance insights

Connectivity Checks

Verification whether all required links are available

Call Tracing

Get fast and deep insights into customer service issue

Cloud Databases

Analyze, evaluate, select, design and deploy 5G subscriber and session/state databases in your network

Load and Traffic Analyzer

In-depth monitoring and autonomous analysis of traffic data

Railway Connectivity Analysis

Autonomous analysis to identify service interruptions and mobile network coverage issues

Health Checks

Periodic monitoring of key characteristics crucial for service performance

Subscriber Data Management Services

Professional services to keep your systems up to date and growing with new demands

ABOUT SILVERENGINE

Software provider and technology consultancy for telecom operators and vendors
Founded in 2012, SilverEngine is a telecommunications consultancy with in-depth expertise of telecommunications and protocols combined with comprehensive engineering competencies. Our skill set enables us to provide innovative analytics solutions and technical services for 5G and 4G telecommunication networks.

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