

# Customer Experience Management Platform

Excel your customers' Wi-Fi experience and ensure access layer performance with one solution, on truly open standards



## Introduction

The ultimate objective of every Communication Service Provider (CSP) is to ensure the satisfaction of all customers. The alternative is rather pessimistic: rising customer complaints, leading to increased customer care costs and high churn rates. That's why it's crucial to know what exactly affects your subscribers' experience.




The quality of customer experience can be impacted by both the access network and in-home factors. However, many solutions on the market only address one of these areas, resulting in partial visibility. These solutions often require the complex and expensive installation of custom software agents on the CPEs.

As a consequence, service providers either don't have an accurate understanding of the experience of their subscribers, or they're facing complicated integration processes.

You can avoid this impasse by choosing a solution based on truly open standards: TR-069/TR-369, which proactively monitors both the access and in-home sides of the network. A thorough analysis can identify the root causes of connection issues even before customers are affected. This leads to fewer customer complaints, or if they do happen - resolved more efficiently. Our solution does exactly that (and more!).

## Customer Experience Management Platform

A Customer Experience Management (CEM) is designed to reduce the number of interventions required for customer care and optimize the use of related resources. It combines proactive access network monitoring, subscribers WiFi experience management, and helpful tools for customer care staff and managers in one place. It comes equipped with features such as smart Wi-Fi monitoring, speed tests, and troubleshooting workflows, as well as APIs for self-management applications. This allows customers to perform quick diagnostics and tackle simple issues independently. By leveraging all of these tools, CSPs can increase operational efficiency, prevent customer issues before they occur, and as a result, reduce truck rolls. The platform is seamlessly integrated with our CSP product portfolio, which provides additional growth opportunities.

-  **Agent Dashboards:** Designed for first-line agents with a focus on single-device analytics, performance management, and automated troubleshooting workflows.
-  **Managerial Tools:** Equipped for second-line supervisors, offering system-wide insights for root cause analysis, intervention analytics, outage detection, and Mesh upsell strategies.
-  **REST API Integration:** Ensures a smooth connection with customer applications, granting end-users access to technical insights from ACS.

**With CEM, we empower agents to deliver quicker, more efficient customer service while providing a structured approach to technical interventions.**

## Main benefits



Tools for customer care staff working in the first, second, and third line of support, as well as an API for the end-customer app.



Insight into subscribers' in-home experience, including coverage in the "last 10 meters" and monitoring access-layer performance in one place.



Direct impact on CSPs revenue by reducing Customer Care operational costs and customer churn rate through efficient troubleshooting.



Identifying extenders upsell opportunities thanks to tracking service usage.

# Differentiators



**Interoperability** – Open standards stack (TR-069/TR-369), ensuring a vendor-agnostic ecosystem for customers, contrary to custom software on CPEs/agents.



**Use cases** – Wi-Fi/in-home experience, Access Layer performance (FTTx, FWA, HFC, xDSL performance).



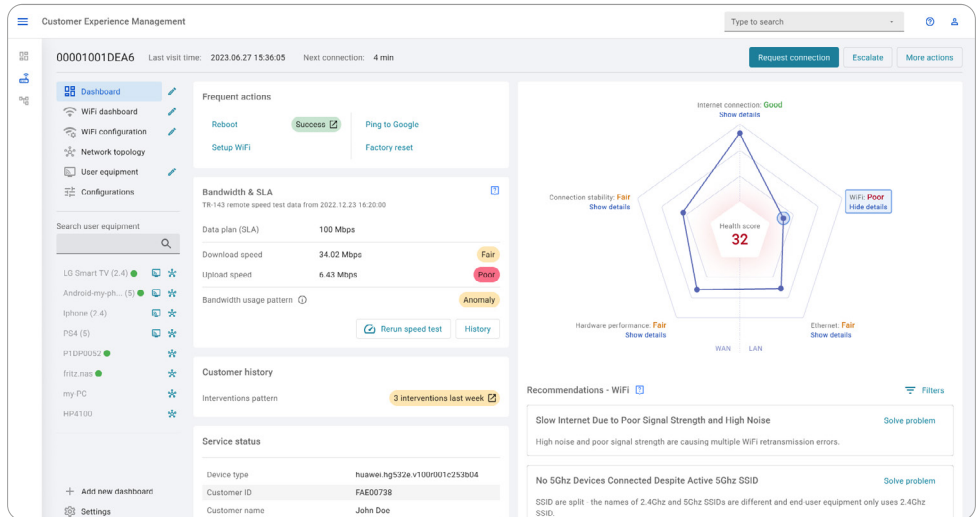
**Customization** – Customization to match customers' needs, including new dashboards, KPIs, workflows, and integrations of external data sources (i.e. OLTs).



**Deployment** – Built on top of AVSystem's ACS, which can be implemented either on-premises or on a cloud.

## Key single-device dashboard features

### Dedicated KPI view with graphical indication of KPI status



Customer Experience Management

00001001DEA6 Last visit time: 2023.06.27 15:36:05 Next connection: 4 min

Request connection Escalate More actions

Dashboard

WiFi dashboard

WiFi configuration

Network topology

User equipment

Configurations

Search user equipment

LD Smart TV (2-4)

Android-my-ph... (5)

Iphone (2-4)

PS4 (5)

P11DP0052

fritz.nas

my PC

HP4100

+ Add new dashboard

Settings

Frequent actions

Reboot Success

Ping to Google

Setup WiFi

Factory reset

Bandwidth & SLA

TR-143 remote speed test data from 2022.12.23 10:20:00

Data plan (SLA) 100 Mbps

Download speed 34.02 Mbps Fair

Upload speed 6.43 Mbps Poor

Bandwidth usage pattern Anomaly

Run speed test History

Customer history

Interventions pattern 3 interventions last week

Service status

Device type huawei hg532a v100r001c252b04

Customer ID FAE00738

Customer name John Doe

Internet connection: Good Show details

Connection stability: Fair Show details

WiFi: Poor Hide details

Health score 32

Hardware performance: Fair Show details

WAN LAN Ethernet: Fair Show details

Recommendations - WiFi Filters

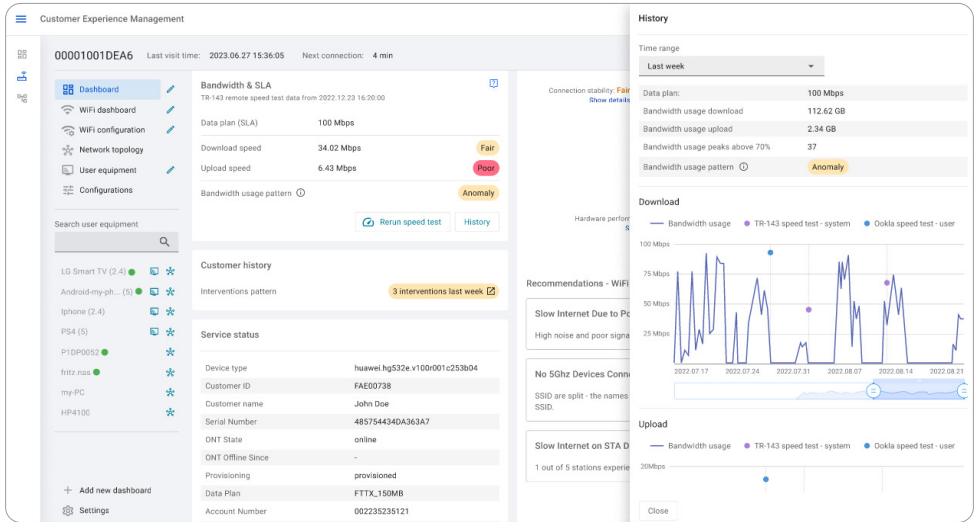
Slow Internet Due to Poor Signal Strength and High Noise Solve problem

High noise and poor signal strength are causing multiple WiFi retransmission errors.

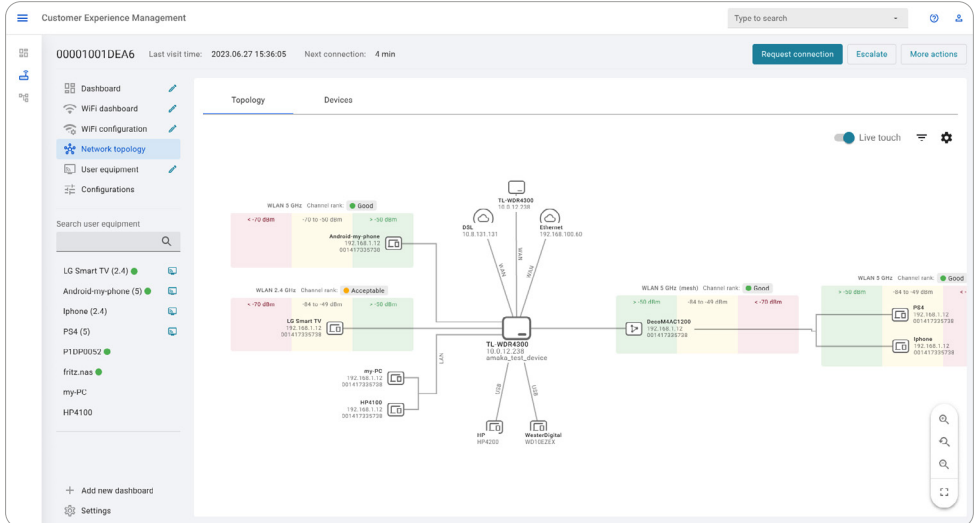
No 5GHz Devices Connected Despite Active 5GHz SSID Solve problem

SSID are split - the names of 2.4Ghz and 5Ghz SSIDs are different and end user equipment only uses 2.4Ghz SSID.

## Historical performance



## Visualization of the whole in-home network, including mesh extenders with live touch, allowing immediate tracking of changes in the user's home network



## Use-case-based recommendations showcasing problem Root Cause Analysis and guidance for the agent

0001001DEA6 Recommendations

Issue category

WiFi

Recommendations

- Slow Internet Due to Poor Signal Strength and High Noise
- No 5GHz Devices Connected Despite Active 5GHz SSID
- Slow Internet on STA Despite Optimal WiFi Settings
- 2.4GHz Congestion Due to 5GHz SSID Not Configured
- Device Overloaded with 16+ Stations and No Security
- Slow Internet: All Devices on 2.4GHz Despite Band Steering Enabled

### Slow Internet Due to Poor Signal Strength and High Noise Slow internet

Root Cause Analysis

- Affected devices: LG Smart TV Android-myphone Iphone PS4
- Symptoms: Slow Internet, High Latency, Packet Loss.
- High noise and poor signal strength are causing multiple WiFi retransmission errors.
- No frequent WiFi scan for optimal channel.

Alert history To We Th Fr Sa Su Mo Show full alert history →

Step-by-Step Guide:

- Inform the customer that you can perform a WiFi scan to check if you can optimize the connection - he might experience a temporary disconnection of his equipment.
 

Initiate WiFi Scan Optimization
- If the channel is already optimal and the problem persists, discuss the feasibility of relocating the router or affected device.
 

Show customer clarity guide →

Navigate to Network graph to verify the change
- If relocation is not possible, ask the customer if they would consider a mesh network upgrade.
 

Mark Customer as Eligible for Mesh Upsell

Disqualify Customer for Mesh Upsell

← Back to device
Delegata
Escalate
Finish - Fixed

## Key network dashboard features

### Installation-wide alerts on device firmware groups sorted by their importance

Customer Experience Management Type to search

Choose dashboard Refresh in 00:23 Edit

#### Important problems

KPI problems All KPI problems

KPI problems	Groups	Device type %	GAI
High temperature	huawei hg532e-v100i001c253b03	36% (275/764)	88
LowRxPower	huawei hg532e-v100i001c253b03	25% (190/764)	67
High gateway RAM usage	huawei hg532e	16% (332/2346)	55
High temperature	huawei hg532e	17% (287/1698)	44
LowRxPower	huawei - hg532e-v100i001c253b04	12% (41/354)	43
High gateway RAM usage	huawei hg532e-v100i001c253b05	14% (332/2346)	34

Items per page: 6    1 - 6 of 40

#### Interventions trends

KPI problems Time range

All KPI problems Last week

KPI problems	Groups	Device type %	GAI
High temperature	huawei hg8245q	61% (209/354)	88
LowRxPower	huawei hg5331	42% (537/1301)	67
High gateway RAM usage	huawei	35% (782/2346)	55
High temperature	huawei hg532e	46% (774/1698)	44
LowRxPower	huawei hg532e-v100i001c253b04	32% (121/354)	43
High gateway RAM usage	huawei hg532e-v100i001c253b05	27% (597/2346)	34

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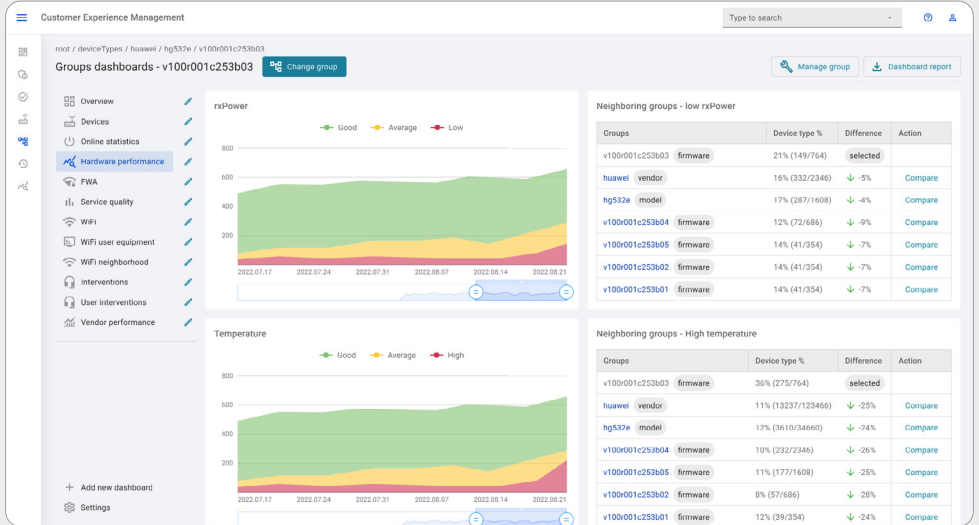
#### Historical problems

Alerts Time range

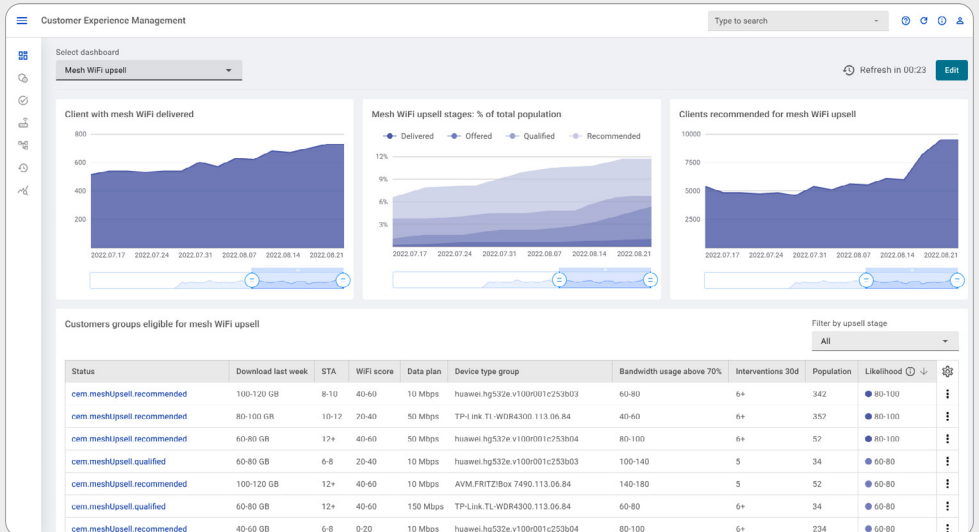
All alerts Last week

Status	Group	Alert name	Alert date	Affected devices	GAI
Alert	huawei.QCY097-OLT-01	LCP splitter outage	2023.01.12 08:24	100% (256/256)	88
Alert	QCY097-OLT-02	Alert name 2	2023.01.12 08:24	29% (3452)	67
Alert	root.deviceTypes.huawei.hg532e-v100i001c253b05	Alert name 2	2023.01.12 08:24	29% (3452)	55
Caution	ZTE-F645	Alert name 2	2023.01.12 08:24	12% (234)	44
Caution	ZTE-F670	Alert name 1	2023.01.12 08:24	29% (3452)	43

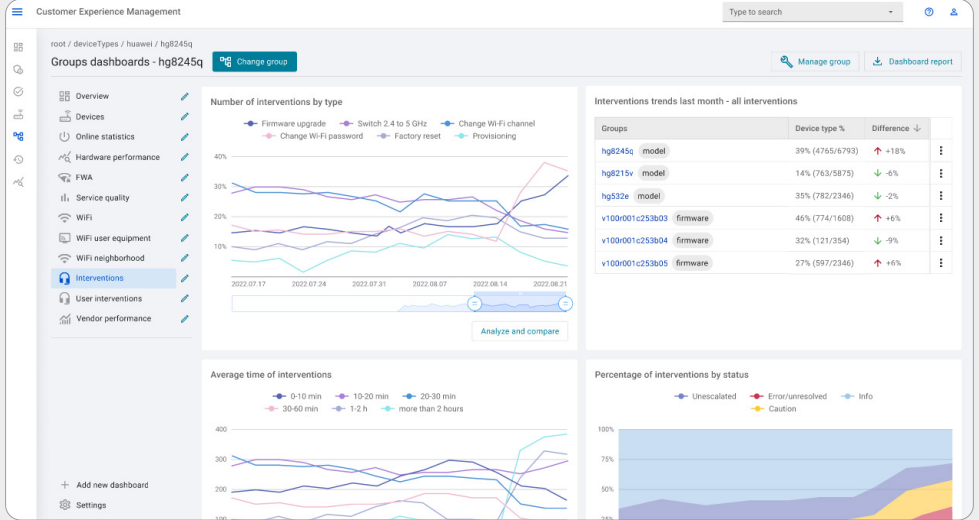
## Thematic group dashboards focused on i.e. performance, along with drill-down and export capabilities



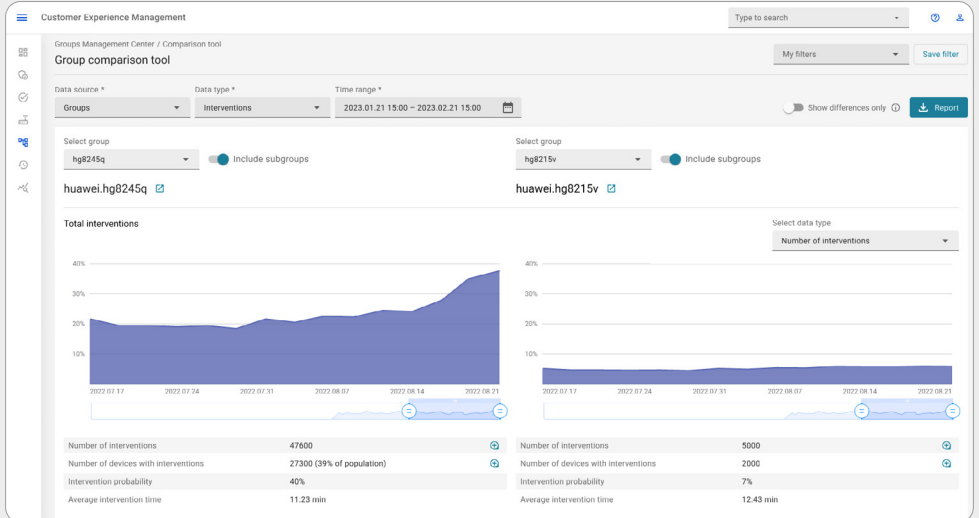
## Installation-wide dashboard suggesting users for mesh extender upsell and displaying statistics of mesh extender adoption



## Group analytics of interventions (devices visited in UMP GUI) providing breakdown of intervention duration time and most often used actions



## Comparative analysis of intervention trends between firmware groups



## API for end-customers

API for end-customers allows the extension of the end-customer app with technical CPE information in a unified manner regardless of the number of CPE vendors. The API endpoint is designed to gather all CPE information during a single CPE session to minimize customer waiting time:

- ✔ Online status – upon logging in, customers see their CPE online/offline status (including outage indication) based on the Connection Request in the UMP or external integrations (i.e. OLTs in the FTTx scenario);

- ✔ List of their end-user equipment with their last week's online/offline status;
- ✔ Access management – the ability to temporarily disconnect one of the end-users equipment or to set up permanent whitelisting;
- ✔ Change SSID/password, and get information if the channel is not optimal with a button to change it to the suggested one.



## AVSystem

**Broadband services management and assurance on truly open standards.**

AVSystem was founded in 2006 with a focus on providing automation solutions for connected device ecosystems. Although the company started by serving the telecommunications industry, it has since expanded its services to various sectors in over 60 countries. Catering local internet service providers as well as multinational telco operators and enterprises, we develop top-notch solutions dedicated to telecommunications, WiFi VAS, and the rapidly growing Internet of Things. Our goal is to create flexible and dynamic technology based on open standards accessible to everyone. We not only follow the newest trends but also co-create them with other IT industry pioneers by actively participating in organizations such as the Broadband Forum.

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