

RADCOM ACE FOR FIXED BROADBAND

**Ensuring telecom operators
fixed broadband service
quality**

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Introduction

Deploying RADCOM ACE operators can significantly enhance fixed service quality and improve the overall customer experience. RADCOM helps operators save network costs by preventing churn, proactively improving the customer experience, as well as providing complete visibility into customer trends as well as usage patterns, in order to enable monetization opportunities such as upsell and cross-sell analytics.

In addition, RADCOM ACE delivers critical customer and service insights to various departments, including management, customer care, marketing, NOC, network performance, and quality assurance. This helps you understand what is happening in your network, what service quality is being delivered and pinpointing how to resolve customer-affecting network degradations 24/7/365.

With the addition of RADCOM AIM (AI-Module), RADCOM also offers automated assurance capabilities using built-in Artificial Intelligence (AI) and Machine Learning (ML) capabilities. By adding the RADCOM AIM module, the solution can automatically detect anomalies, perform root cause analysis, and deliver advanced AI-driven insights that cover data and voice services across your fixed broadband network.

RADCOM ACE seamlessly integrates into multi-cloud environments. It monitors, analyzes, and delivers real-time subscriber analytics and network insights into how the network performs. It also provides advanced troubleshooting capabilities to help the operator deliver quality fixed services and ensure that customers continually enjoy a great user experience.

RADCOM ACE Use Cases For Fixed Broadband

RADCOM provides in-depth visibility into your fixed network, enabling different teams.

Customer Care (Call Centre)

- Improve NPS and CSAT by proactively monitoring customer experience
- Reduce Average Handling Time (AHT)
- Increase First Call Resolution (FCR)
- Manage field technicians more efficiently
 - Pinpoint the problem at the cabinet level or customer home
 - Identify RCA: disconnections vs. low speed/RTT
- Utilize probe data to handle outage events

Engineering/NOC/Performance Monitoring

- Detect users with service reliability and offer proactive resolution
- Identify customers with the worst CX and approach them proactively
- Monitor performance KPIs from NE to user level
- Gain insights into the home
 - identify Wi-Fi Issues
 - See how many and which devices the user has at home
- Analysis of video applications

Marketing

- Increase visibility into network issues to improve time of resolution
- Pinpoint heavy users to offer extended services or prevent network abuse
- Categorize users who are heavy gamers or video users and are more sensitive to network issues
- Detect up/cross sell customers based on advanced data analytics in multiple categories (video, gaming and WFH (work from home) offerings)
 - Send SMS/call the customers detected to increase their plans
 - Offer incentives such as one-month free Netflix premium which can be bundled with cross sell to 5G package for supported devices
- Align packages with user needs and check for mismatches
- Check level of fulfilment and network performance as part of NPS scoring



Figure 1 – RADCOM ACE provides macro to micro views of the fixed network status

For fixed-line services, RADCOM enables the operator to understand the end-to-end quality of experience and, when service degradations occur, to optimize and troubleshoot service performance rapidly. Operators can also gain an understanding of network usage and trends. Using insights into encrypted traffic, RADCOM provides operators with KQIs for gaming (such as RTCP over UDP and update rate), tethering (to see what applications subscribers use, data usage, etc.), and video streaming (such as Amazon, Facebook, Netflix, YouTube, and others). With built-in DPI, RADCOM's solution classifies over 3000 apps & protocols that subscribers use on their fixed broadband network and provides quality of experience metrics for encrypted OTT apps.

Covering both control plane and user plane traffic, operators can drill down from the service level to the individual subscriber or packet level to troubleshoot and receive event-driven notifications for connection issues (RADIUS, Diameter). In addition, troubleshooting can be applied to the user plane traffic with drill-downs to view call/session traces. RADCOM Network Intelligence enables operators to proactively analyze their fixed-line services, detect any network default, and optimize the network performance.

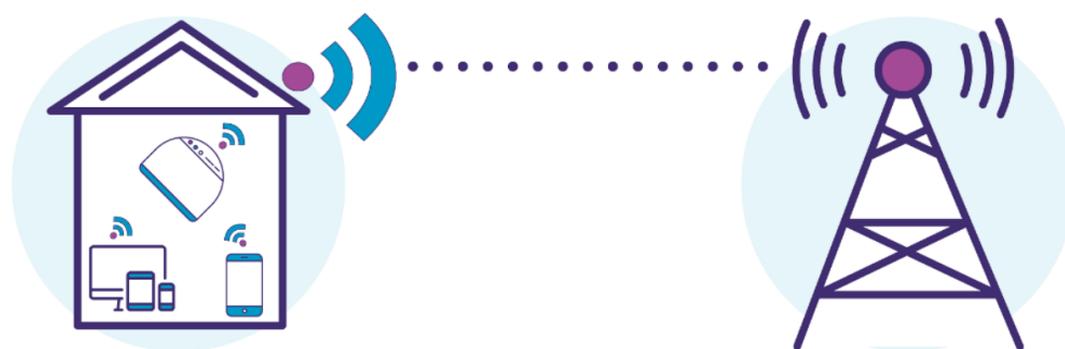
5G Fixed Wireless Access

FWA based on LTE has been available worldwide, although it is much more dominant in some regions than others. In a recent report¹, GSA identified 421 operators in 169 countries selling FWA services based on LTE. However, with the introduction of 5G and high-frequency millimeter wave (mmWave) above 6GHz, the speed of FWA will be comparable to that of fiber.

So far already, 73 operators have announced 5G FWA launches worldwide. SNS Research estimates that service revenue from 5G-based FWA subscriptions is expected to grow at a CAGR of approximately 84% between 2019 and 2025, eventually accounting for more than \$40 Billion in revenues in 2025².

Most 5G-based FWA is expected to be implemented in densely populated urban areas. However, rural carriers (such as C Spire and US Cellular in the North American market) are examining 5G to deliver last-mile broadband connectivity to rural communities. So, FWA is being utilized by both fixed operators to speed up fixed broadband rollouts and mobile operators to tap into the multi-play sector, including a new route into the home broadband and video market. This cellular connection provides the primary broadband connection for a home or business in the form of an FWA service delivered to Customer Premises Equipment (CPE), which in turn offers local connectivity for other devices (typically over Wi-Fi).

With FWA emerging as one of the first 5G use cases to be deployed and monetized by operators, service assurance must be deployed at the beginning of the rollout to ensure the smooth implementation of these new services and to assure the customer experience. As we advance, operators will look to automate operations, and having a cloud-native, containerized assurance solution from day one will help operators reach this goal.



Fixed Wireless Access

¹ Fixed Wireless Access Global Status Update June 2022 – GSA Report

² 5G for FWA (Fixed Wireless Access): 2017 – 2030 – Opportunities, Challenges, Strategies & Forecasts by SNS Telecom & IT

RADCOM ACE: FWA Case Study

Operator Challenge: To find a cloud-native assurance solution that monitored the end-to-end Customer Experience Index for 5G FWA

Solution: RADCOM ACE was selected as the most effective way of monitoring FWA services

The operator wanted to:

- Transition to customer-focused network operations
- Focus on committed SLAs vs. mobility
- Plan the full lifecycle of the subscriber
- Identify devices at home, applications used, usage patterns, and bottlenecks
- Gain information from TR069 data feeds

RADCOM ACE for FWA offers:

Initial service validation

- Feedback to users about the network performance and recommendations (SMS/SP App etc.)
- Real-time and immediate deployment feedback
- Monitors, the user (house) experience to guarantee the promised SLA (speed package)

Planning and prediction

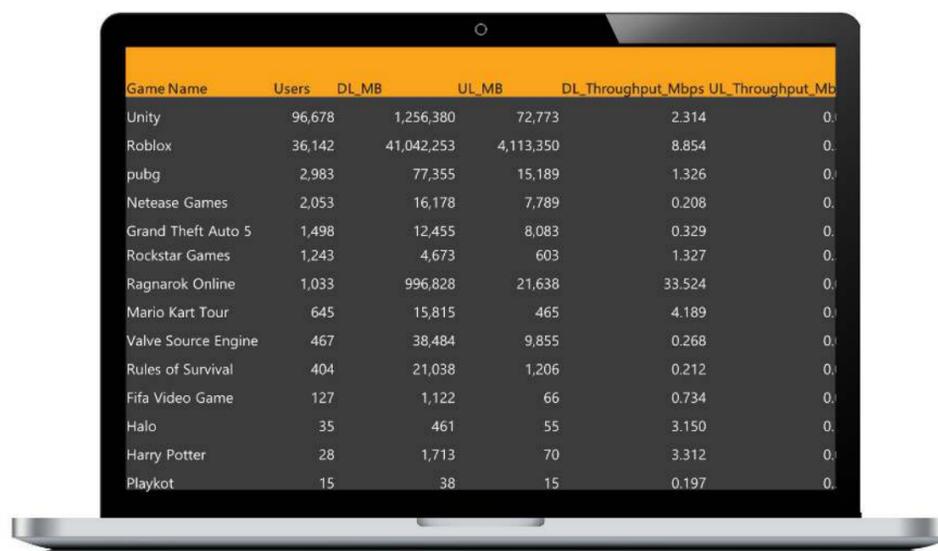
- Location analysis to determine if a house is covered and how well the coverage is based on neighboring houses and their KPIs
- Subscriber plans to guide the operator on which service plans the user receives based on network load and usage
- Additional resources that inform the operator in advance about any additional network capacity that is needed based on the increase/decrease of traffic and usage patterns

Continuous service monitoring

- Proactive reduction in customer churn due to advanced CEI-based monitoring and faster time to resolution
- Monetization that enables the operator to upscale packages based on traffic/apps/usage in the home
- AI-managed performance

Summary

RADCOM ACE provides you with complete visibility of your fixed broadband services. With integrated AI and ML capabilities, our advanced assurance solution identifies data patterns and anomalies over time. It performs automated root-cause analysis to improve time to resolution and save engineering resources. RADCOM's fixed broadband solution enables you to assure your customers of a sustained, high-quality experience as part of an end-to-end monitoring solution.

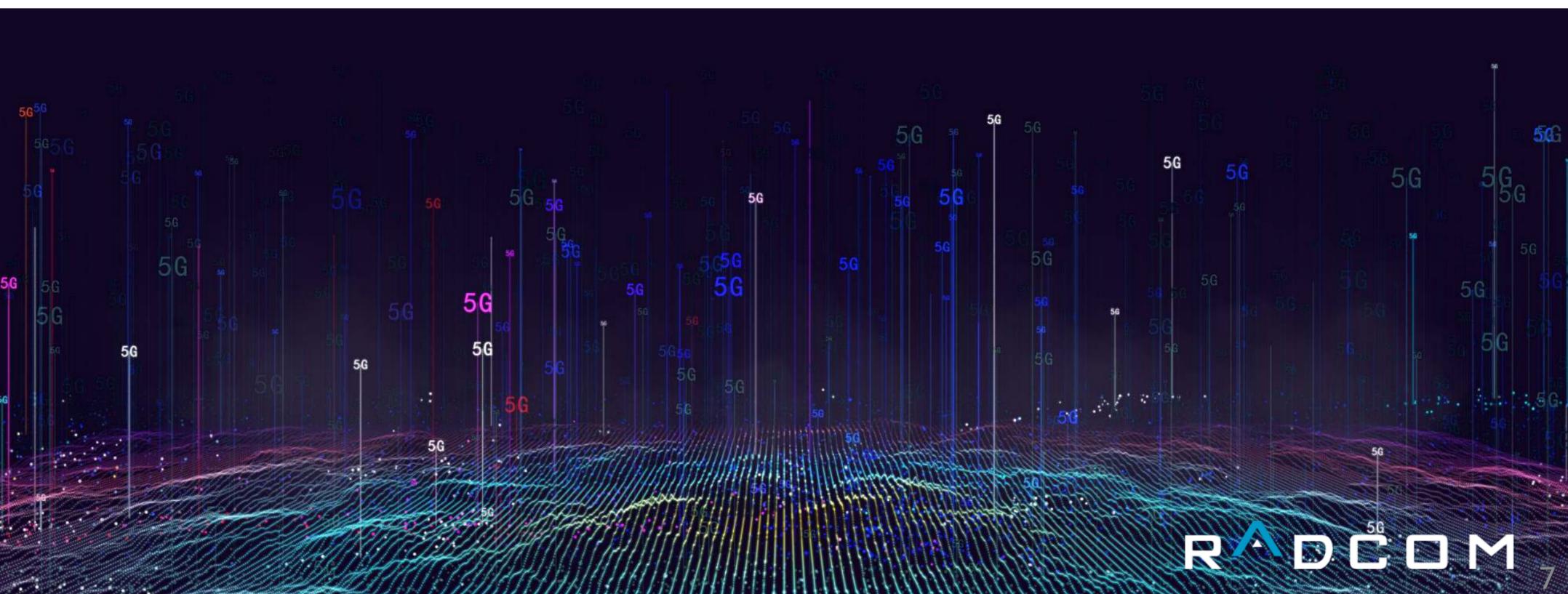


Game Name	Users	DL_MB	UL_MB	DL_Throughput_Mbps	UL_Throughput_Mbps
Unity	96,678	1,256,380	72,773	2.314	0.0
Roblox	36,142	41,042,253	4,113,350	8.854	0.0
pubg	2,983	77,355	15,189	1.326	0.0
Netease Games	2,053	16,178	7,789	0.208	0.0
Grand Theft Auto 5	1,498	12,455	8,083	0.329	0.0
Rockstar Games	1,243	4,673	603	1.327	0.0
Ragnarok Online	1,033	996,828	21,638	33.524	0.0
Mario Kart Tour	645	15,815	465	4.189	0.0
Valve Source Engine	467	38,484	9,855	0.268	0.0
Rules of Survival	404	21,038	1,206	0.212	0.0
Fifa Video Game	127	1,122	66	0.734	0.0
Halo	35	461	55	3.150	0.0
Harry Potter	28	1,713	70	3.312	0.0
Playkot	15	38	15	0.197	0.0

Figure 2 – RADCOM ACE provides insights into gaming users and trends

Offering dynamic, on-demand service assurance and network troubleshooting at a macro and micro level, operators can quickly resolve customer-affecting degradations with minimal effort. Our fully customizable fixed broadband solution offers real-time subscriber analytics and automated troubleshooting capabilities, enabling you to track critical KPIs and comply with agreed-upon SLAs seamlessly. Covering a range of fixed broadband data and voice parameters, including core metrics such as Total Call Attempts, ASR, NER, Average Call Duration, Jitter, PMOS, etc., can all be collected and measured. By analyzing these core metrics, you can optimize the customer experience for each use case.

For more information about monitoring fixed services visit our [website](#)



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