

Rakuten Mobile achieves end-to-end 4G/5G assurance by deploying RADCOM's AI-driven ACE solution

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RADCOM, a provider of automated assurance solutions, has entered into a multi-year agreement (as of November 2020) to provide Rakuten Mobile, a Japanese mobile network operator, with service assurance using its cloud-native, containerised assurance solution, RADCOM ACE. Rakuten Mobile aims to provide the world's first fully virtualised cloud-native mobile network that will run at a fraction of the cost of a traditional mobile network. It launched 4G services in April 2020 and non-standalone (NSA) 5G services in September 2020. It plans to launch standalone (SA) 5G services in 2021. The partnership with RADCOM should enable Rakuten Mobile to compete more effectively in the 4G and 5G service market.

RADCOM's solution is enabling Rakuten Mobile to monitor and analyse network performance from the RAN to the core and IMS

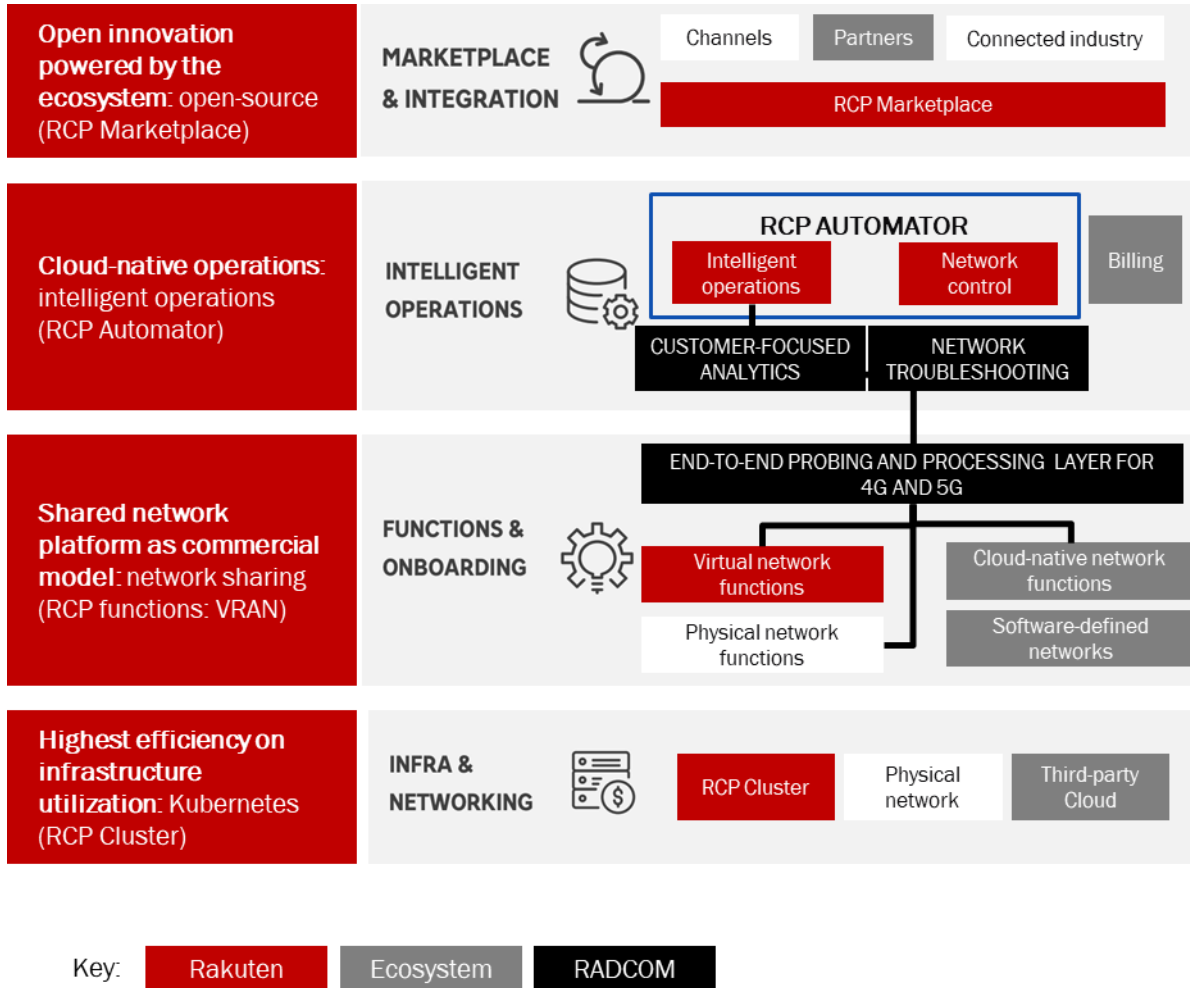
Rakuten Mobile wanted to differentiate from its competition by delivering superior service quality and customer experience, predictive operations and highly responsive customer care. Near real-time end-to-end visibility of network performance and service quality was critical to achieving this. Consequently, Rakuten Mobile required assurance architecture that would support the end-to-end monitoring of a range of services and ensure continuous quality from instantiation to deactivation. This meant that it needed an assurance vendor that was willing to form a flexible partnership. Rakuten Mobile selected RADCOM because of its willingness to innovate (it has supported cloud-native architecture from an early stage) and because its ACE platform met Rakuten Mobile's architectural requirements for being cloud-native and scalable. Indeed, RADCOM ACE is a complete visibility and monitoring solution that supports physical, virtual and cloud-native environments.

RADCOM ACE provides end-to-end service and subscriber visibility from the RAN to the core and IMS, and supports a fully cloud-native virtual environment. The solution is built using microservices-based architecture and facilitates CI/CD processes that enable efficient scaling and updates. This means that it can be constantly updated to meet Rakuten Mobile's changing needs. RADCOM ACE has multiple touchpoints within Rakuten Mobile's network, which means that it is able to correlate multiple data sources and collect packet and session data to assure and optimise the network. Customer support teams can benefit from the rich customer-centric insights and customer experience data that ACE provides at both the subscriber and VIP group level. The use of ML/AI techniques enables anomaly detection across Rakuten Mobile's 4G and 5G networks. This helped to create real-time insights that allow the operator to understand and improve the 5G customer experience through multi-dimensional analysis.

RADCOM ACE also provides end-to-end monitoring based on vRAN trace stream data and EPC packet data. It has a complete set of KPI dashboards and drills down to an end-to-end correlated call trace. RADCOM's solution also monitors the Service-Based Architecture (SBA) reference points and decodes messages using the 5G NG application protocol (NGAP), control plane and user plane separation (CUPS) anchoring and packet-forwarding control protocols to give a correlated end-to-end view of the 5G network.

The Rakuten Communications Platform (RCP) is Rakuten Mobile’s automated network and operations platform (introduced in October 2020), which is currently being used to operationalise the 4G network. Rakuten Mobile is actively enhancing the RCP and adding more automation functionality as it prepares to scale up its 5G offering; RADCOM ACE will eventually be fully integrated (see Figure 1).

Figure 1: Overview of the implementation of RADCOM ACE in Rakuten Mobile's architecture



Source: RADCOM, 2021

RADCOM ACE gives Rakuten Mobile end-to-end 5G network visibility

Rakuten Mobile will get the following benefits from using RADCOM ACE.

- End-to-end visibility of network performance and service quality.** Assurance architecture that can support end-to-end monitoring is required to provide an excellent customer experience and superior service quality from instantiation to deactivation. The RADCOM ACE platform enables the multi-layer monitoring of network performance, service quality and network service experience. Rakuten Mobile can therefore use the RADCOM ACE platform to gain end-to-end visibility of network performance and service quality. It can also derive customer experience metrics using AI/ML-based insights. In the future, Rakuten Mobile

intends to correlate these insights with those from its parent company's other applications (including e-commerce, travel and TV) to gain a 360-degree view of its customers.

- **Rapid innovation thanks to the use of DevOps and CI/CD processes.** RADCOM is using CI/CD processes to rapidly address unforeseen roadblocks and developing requirements. The partnership with RADCOM therefore enables Rakuten Mobile to innovate and add new functionality rapidly to adapt to changes in the business and network. RADCOM's flexibility and willingness to partner with Rakuten Mobile on this journey will be critical for success, both now and in the future.
- **The ability to monitor a cloud-native network in the 5G era.** The RADCOM ACE platform is cloud-native assurance solution and will eventually be migrated to the RCP. This will allow Rakuten Mobile to achieve a completely cloud-native network while keeping opex low. The platform enables Rakuten Mobile to monitor its virtualised and cloud-native infrastructure, along with both 4G and 5G networks.

Summary

End-to-end visibility of network and service quality is critical to enabling Rakuten Mobile to achieve its goals of delivering superior customer experiences and operating a cloud-native network. The partnership with RADCOM provides Rakuten Mobile with an end-to-end, cloud-native visibility platform to monitor network and service quality. This gives the operator a competitive advantage through improved efficiency, agility and network scalability.

This article was sponsored by RADCOM and is a summary of the case study, [Rakuten Mobile: cloud-native assurance for end-to-end 5G network visibility](#). Analysys Mason does not endorse any of the vendor's products or services.