# Parallel Wireless Indoor Open RAN Helps APAC Tier 1 MNO Reduce Customer Churn

Case Study


## Introduction

Even those operators who are the most advanced in deploying Voice over LTE (VoLTE) technology, realize that it will take many years before all voice traffic is carried over 4G. The necessary pairing of UE and core network VoLTE implementations means that 3G will remain an important voice solution for many years to come. This leaves a dilemma for the operator, clearly 4G/5G is the industry direction of travel, but 3G remains a critical voice technology. The Parallel Wireless 3G/4G Open RAN solution for indoor coverage/enterprise is a 3GPP standards-based NFV-SDN-enabled solution that is easily scalable to suit any size enterprise to provide quality indoor coverage for voice and data.

## The Challenge

The Tier 1 Operator in APAC was looking for an indoor solution that could provide quality voice and fast data to their high valued enterprise customers. The operator evaluated the traditional small cells solutions, but determined they were are too complex, expensive, and time-consuming to deploy and maintain and couldn't provide 3G/4G technology on the same femto and be software upgradeable to any 3G/4G/5G technology.

## The Solution: Parallel Wireless Indoor Open RAN

Parallel Wireless offered a multi-technology 3G/4G indoor Open RAN solution for voice and data on the same femto, fully managed by software. The solution enabled this Tier 1 in APAC to deploy reliable indoor coverage at pennies per square foot while at the same time reducing the complexity of deployment and maintenance and preventing churn from their subscribers that needed quality voice solution in-building.

The solution is based on the cellular access point (CAP)/enterprise femtocell and integrates 3G and 4G/LTE with real-time network orchestration, flexible scheduling, interference mitigation, resource optimization, traffic prioritization, and enterprise-grade security. The indoor Open RAN controller provides orchestration enabled by real-time network SON, resource optimization and traffic mitigation. It also enables seamless mobility for users indoors and out and makes network deployments fast and simple with no RF planning or complex system integration required.

- The Cellular Access Point (CAP) Open RAN indoor hardware is a software-defined – multi-mode – multi-band Enterprise femto which provides cellular (single mode 3G or 4G or multi-mode/ multi-carrier 3G/4G) access in the same form factor and provides low cost but high QoS coverage for enterprises of any sizes. The CAP combines 3G and 4G/LTE functions into a single footprint using common network connectivity and power, this greatly simplifies the installation and maintenance process. This helps to achieve the right level of deployment flexibility and attractive economics for service providers to deliver a wide variety of enterprise deployments with the lowest cost per unit and coverage, bringing overall Capex expenditures to over 90% of savings.
- The indoor Open RAN solution uses Parallel Wireless' Open RAN controller which provides enterprise gateway functionalities with many 3G/4G/ Wi-Fi functions virtualized – including Femto gateway, Small Cell gateway, etc. normally the cost of these aspects would be a significant extra. The controller software itself reduces the CAPEX (by 90%) as it has many gateway functionalities needed for enterprise solutions to manage licensed and unlicensed are already included as VNFs in its cost and architecture. It runs on any x86-server (a few thousands of dollars with plenty of capacity for high performance). The controller can be deployed in DC (data center)/cloud or locally and one HNG can serve many enterprises. OPEX will be reduced with the HNG as it will optimize the enterprise network, mitigate traffic, etc.

## Benefits to MNO

### Tier 1 MNO in APAC benefited from:

**Easy and cost-effective install:** With the Parallel Wireless Open RAN controller, the deployment was reduced from days to just a few hours, while eliminating the need for RF planning and extensive system integration. In under a day, this Tier 1 was able to install the whole system in a medium-size enterprise building – no specialized installers or RF planning was required. The controller configured the nodes without any involvement from IT personnel (plug-n-play). The Parallel Wireless solution offered comprehensive self-organizing network (SON) capability ensuring that cells will self-configure (including neighbor lists and physical cell ID).

**Quality end-user experience, including voice:** The network orchestrator functionality of Parallel Wireless software platform also optimizes radio performance (i.e. inter-cell interference coordination, handover optimization between the indoor cells and indoor cells and neighboring macros for seamless mobility and frequent handover mitigation which results in better QoS for data and voice for the end-users. The dual-mode cell supports Circuit Switched Fallback (CSFB) and VoLTE voice enabling the operator to invest in the future while ensuring it can deliver the legacy services for high-quality voice coverage.


## Summary

Parallel Wireless Open RAN indoor solution not only improved the indoor coverage at a significantly reduced cost preventing customer churn but also enables new service offerings for this Tier 1 APAC operator. Auto-configuration, self-optimization, and traffic mitigation capabilities helped improve the delivery of indoor coverage. Network coordination capabilities, network resource utilization, and user traffic optimization helped to improve indoor coverage while also reducing costs and extending existing network investments. As an Open RAN leader, Parallel Wireless Open RAN is uniquely qualified to meet the growing enhanced wireless access needs to deliver cost-effective and quality indoor coverage. As carrier networks migrate to 5G, indoor coverage with solutions like Parallel Wireless indoor Open RAN will be key for facilitating increased capacity, faster speeds, lower latency, and higher throughput.

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