# Outdoor Coverage Solution Overview

World's First Unified Cloud-native 2G/3G/4G/5G Easy and Cost-Effective to Deploy and Maintain Coverage Solution for Urban and Rural

Parallel WIRELESS

## The Challenge

Uncertainty in the coverage business case (from the demand side) in low-density areas, operational complexity (from the cost side) and competitive pressure in urban/high density markets results in MNOs struggling to find coverage solution that can address both scenarios.

## Overview

Enhanced mobile broadband will be the first commercial application of 5G and can help operators deliver coverage everywhere from rural to suburban to most dense urban locations. Parallel Wireless OpenRAN can support all those deployment scenarios at the lowest TCO and can be deployed on accelerated timeline. Parallel Wireless's globally deployed 2G/3G/4G/5G outdoor coverage wireless solution is a low-cost, low footprint, multi-technology coverage solution. It provides a cloud-native, software-based, unified 2G/3G/4G/5G architecture. This allows operators to easily deploy, manage, scale, and future-proof their networks while providing the lowest TCO by making them self-configuring, self-optimizing, and 5G-ready.

## The Solution

Parallel Wireless's innovative cloud-native Open RAN coverage solution enables coverage by lowering cost, simplifying installation, and increasing flexibility through disaggregation of hardware and software. The flexibility of our software platform enables deployment in urban or rural environments. To meet variety of deployment scenarios, we have a large portfolio of OpenRAN hardware available from macrocells, to small cells, to Massive MIMOs, all orchestrated and managed by our OpenRAN software suite:

**Low density areas:** Parallel Wireless's unique low cost, low footprint and cloud-native multi-technology solution helps to deliver coverage to low density areas by making deployments easy and affordable to install, maintain and to upgrade to any future technology (including 5G) on the same hardware without installing any additional hardware or performing sites visits. It minimizes the CAPEX/OPEX in these low-density areas where there is high uncertainty on return of the investment for MNOs. It also delivers superior sustainability.

**High density areas:** As MNOs deploy urban networks easy to install, low-cost and high-performing cloud-native Parallel Wireless OpenRAN supports macro or small cell deployments for densification and delivers superior end user QoS for consumers and industries with our OpenRAN software suite making high density networks easy to deploy and maintain by self-configuring and self-optimizing them real-time.

As a result, low-density and high-density coverage will be cost-effective through:

- Offering ALL Gs in RRHs, all software upgradable to any G, and enabling access flexibility; shared capacity on COTS-based vBBU to provide voice and data on the same equipment.
- Providing an overall low-cost solution with a cost structure that serves low density through deployment flexibility (can deploy 1 sector per site, or tri-sector where needed with the same hardware and all optimizations and handovers done by OpenRAN software) or high density through selection of OpenRAN hardware (macros, small cells or Massive MIMOs) that fit the deployment need.
- Enabling the new telco value chain in coverage through flexibility in operation - with the Parallel Wireless OpenRAN controller enabling new business models and network sharing - coverage network slice can be managed by a third party without affecting any other regional or urban slices.

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## Benefits

The world's first OpenRAN solution brings the following benefits to MNOs delivering coverage:

### Ease to Deploy, Manage, and Scale

- OpenRAN software suite automates configuration and network optimization for ease of deployment in low density or high density areas: OpenRAN hardware portfolio is plug-and-play, auto-configuring and self-optimizing
- Network orchestration features reduce drive testing to save on OPEX
- Parallel Wireless OpenRAN hardware portfolio is software-defined to upgrade TRx, user count, and technologies with a simple software upgrade and shared COTS BBU capacity

### Low TCO

- Lowest TCO enables operators to change their business model for low ARPU markets or high density urban markets
- Software platform enables the use of OpenRAN ecosystem hardware to reduce CAPEX; also allows COTS vBBU to share capacity between different technologies
- Remote troubleshooting reduces need to travel on-site or asking for access to hard to reach high density sites
- Hands-free optimization of PW SON saves additional OPEX (up to 65%)

### Future-Proof

- Software upgrade to 3G/4G on the same CWS, since the software includes all 2G/3G/4G/WiFi orchestration functions and 5G-native architecture
- Data traffic local breakout through utilization of CUPS delivers typical 5G low latency to 2G, 3G, and 4G networks

## Summary

The Parallel Wireless coverage solution uses OpenRAN software to make any G coverage deployments low-cost and easy to deploy, maintain, and scale. It enables the use of white box base stations to remove the deployment or economic constraints of coverage networks. The software platform makes networks easy to install with minimum on-going maintenance which reduces OPEX. OPEX is further reduced through lower site rental fees as a result of a smaller footprint, lower power consumption and the option to use alternative power sources such as solar. Parallel Wireless's software-based solution makes it easy to expand and can be software-upgraded to any G. The result is coverage that can finally be affordable for a massive rollout across low and high density locations.





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