

Parallel Wireless Open RAN Helps to Modernize Existing 2G and 3G Infrastructure to Deliver Cost Savings and Operational Efficiency

Case Study



Introduction

Legacy RAN solutions have been based on proprietary hardware and take a long time to develop and deploy. With each generation (G) of radio interface change, these radios are replaced with the newer legacy versions requiring not only a significant investment but also a long swap period. That is why RAN is the biggest expense for mobile operators accounting for around 60 % of CAPEX (and 65 % of OPEX). In addition, older technologies are becoming more expensive to maintain and do not easily interop with newer ones.

Greater openness enabled with Parallel Wireless Open RAN helps service providers to “open up” their RAN infrastructure, including legacy technologies like 2G and 3G. With the world’s first and largest Open RAN portfolio of hardware and the software-enabled Open RAN controller, cloud-native virtualization of is extended to the edge of the network bringing increased business agility with network elasticity, flexibility, and real-time RAN optimization across ALL G. This allows to aggregate hardware for greater efficiency and cost savings, while future proofing for 4G and 5G.

The Challenge

According to the GSMA report, mobile broadband connections in the Middle East and North Africa reached parity with 2G before the end of 2016, with 3G becoming the dominant mobile technology at the end of last year. This has created a challenge for local MNOs, requiring them to support both technologies, and at the same time prepare their networks for 4G and 5G.

A key goal of Zain’s modernization initiative is to fully virtualize 2G and 3G networks through Parallel Wireless’ unified 2G/3G/4G/5G mobile architecture — not only to begin experiencing cost savings and operational efficiency, but also to future-proof their networks for 4G and 5G.

The Solution: Parallel Wireless 2G/3G/4G/5G Open RAN

The software-based approach for older Gs is unheard of where by virtue of the original design, it’s impossible to reconfigure legacy 2G and 3G networks to support newer communications standards such as 4G, and eventually 5G. Parallel Wireless technology is designed for open interoperability through the GPP-based baseband processing platform, radio hardware, software, and simplified business model to support ALL current, present, and future Gs for a better service to the end users.

Parallel Wireless’ innovative virtualized multi-technology Open RAN solution disaggregates hardware and software to make deployments easy and affordable to install, maintain and upgrade to any future technology with:

- Converged Wireless System (CWS), the multi-technology software-defined GPP-based base station that allowed Zain to replace legacy 2G and 3G systems, to run 2G and 3G simultaneously on the same base station, and to provide superior data and voice services to Zain customers. Multi-technology CWS nodes are easy to deploy and maintain with Parallel Wireless Open RAN Controller and enable a clear technology evolution from 2G to 3G/4G/5G with just a simple remote software upgrade to 5G. In addition, using resilient wireless mesh for backhaul, CWS eliminates the need to provide more expensive transport.
- World’s First Open RAN Controller that virtualizes ALL G RAN and core functions (i.e. vBSC for 2G, vRNC for 3G, small cell and core gateways for 4G) to lower the cost of RAN deployments through simplification and automation. It also provides seamless mobility and low latency for the best subscriber experience for Zain customers on 2G and 3G today for voice and data, and on 4G and 5G in the future. The software-based controller enables an Open RAN architecture by using standard-based and open interfaces between network components and, as a result, simplifies and automates network management and integration of new RAN products into the core of the network with real-time SON.



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Benefits to Zain

The world's first virtualized unified 2G 3G 4G 5G Open RAN helped Zain simplify deployments resulting in much lower CAPEX and OPEX through:

Open RAN offered tremendous growth opportunities for Zain to reduce costs and drive new revenue growth. Their selection of Parallel Wireless as a strategic partner enabled them to build an efficient, unified, cost-effective network to better service their customers with video, gaming, health, IoT, and education services. Parallel Wireless provided a level of expertise and innovation across unified fully virtualized Open vRAN that allowed us to experience significant savings.



Zain has modernized their existing hardware centric (legacy) 2G and 3G infrastructure with Parallel Wireless fully virtualized unified ALL G Open RAN and is running simultaneous 2G and 3G operation on the same SDR to provide superior data and voice services to their customers.

- This resulted not only in the reduced data center footprint, but also the site itself with Parallel Wireless Open RAN controller virtualizing vBSC for 2G, vRNC for 3G and core for 4G. The site is upgradable to 4G or 5G with a simple software upgrade as well.
- Parallel Wireless provide lowest deployment cost and maintenance cost (with network automation across ALL G through SON), especially critical for low ARPU market
- The overall architecture is 5G native and enables easy and cost-effective migration to 5G with Parallel Wireless Open RAN hardware being able to be upgraded to 5G with a simple software upgrade and the software itself enabling any core migration option.

Summary

By disaggregating the hardware from the software in a 2G, 3G, 4G or 5G RAN deployment, Parallel Wireless approach has opened up the possibilities of the network. Operators on six continents have realized the transformative cost-saving benefits that Parallel Wireless virtualized Open RAN can deliver to their networks and their bottom line. Zain, a truly innovative operator, is a first-mover in their region, to open up the RAN and to deliver a unified network to allow their customers to experience the new services that will be possible over all generations of technologies, 2G, 3G, 4G, and 5G.



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