

We Work Together

Any Application, Any Cloud
Deliver Optimal Customer Experience on any Cloud



Cohere Technologies and VMware Bring Telco Cloud with Spectrum Multiplier Innovation to Communication Service Providers

Open RAN (O-RAN) is considered the future of mobile networking, transforming how communication service providers (CSPs) deliver highly immersive services and experiences. With O-RAN, mobile base stations can be built using standard and open hardware and software from multiple vendors, rather than from a single supplier. Software-driven architecture provides simpler and cost effective means for CSPs to extend their mobile networks and carry out upgrades without replacing hardware. The Radio Access Network Intelligent Controller (RIC), which is standardised by the O-RAN Alliance, is fundamental in creating an open framework designed to further improve the cost-effectiveness of O-RAN, as well as expanding supply chain diversity to promote innovation. O-RAN with near real-time RIC disaggregate the radio functions of a mobile baseband unit (BBU), reducing the hardware that manages the radio functions at the cell site. At the same time, open APIs will facilitate the integration of third-party applications for numerous vendors to contribute new products and services, creating vibrant and open ecosystems.

Cohere Technologies and VMware are together introducing an O-RAN solution, transforming how CSPs improve network and spectrum efficiencies to deliver innovative services with superior experiences to their customers. Cohere and VMware jointly demonstrated the first proof of concept to a major European CSP in early 2020.

A year later, the two companies, in collaboration with Capgemini Engineering, Intel, and Telecom Infra Project (TIP), have successfully showcased how the joint O-RAN solution further boosts the capacity using 5G multi-user, multiple input, multiple output (MU-MIMO) in a trial with Vodafone. Powered by Cohere's Spectrum Multiplier xApp and VMware's near real-time RIC platform, the joint O-RAN solution has doubled spectrum efficiency while reducing the amount of expensive and energy-consuming hardware at the cell site by more than 30%. The joint solution enables CSPs to modernize their mobile networks to deliver performance and latency-sensitive services, such as AR/VR streaming, 360/4K videos, immersive gaming, among others, while also supporting new advanced radio applications for critical business and consumer applications.

The near real-time RIC, defined by the O-RAN Alliance, enables CSPs to deploy apps for cloud-native control and management of the RAN. It enables the disaggregation of the RAN Centralized Units (CUs) and Distributed Units (DUs) by decoupling RAN intelligence from the RAN functions for system optimization and operational flexibility. VMware's RIC platform has been designed to keep the developer experience at the center and provides a simple-to-use Software Developer Kit (SDK) for any third-party developer to build an app that can be deployed in the RAN. Today, most of these apps are geared toward making the networks run faster and more efficiently, including Cohere's Spectrum Multiplier xApp.

Cohere's pioneering work in the Delay Doppler domain enables robust channel estimation and accurate channel prediction into the future. It leverages geometric reciprocity and reduces computation complexity through concise channel representation. Additionally, Cohere software takes advantage of existing UE feedback for channel measurement. This allows disaggregation of functions which enables Cohere's intelligent cloud Scheduler to reside in the Edge Cloud and creates the foundation for improving cell edge performance via intercell coordination (CoMP). Cohere's software delivers a significant spectrum multiplier effect for mobile networks in both FDD and TDD with Spatial Multiplexing for any generation network. Cohere's software-based solution offers significant MU-MIMO benefits with no changes to existing handsets, radios and antennas. Cohere's software works in all available spectrum and enables true 4G and 5G coexistence. Within a Telco Cloud, Cohere channel estimation and scheduler can run on near real-time RIC as an xApp.

In 2020 Cohere won GSMA's award for "Best Network Software Breakthrough" for its 2x spectrum and capacity multiplier effect for 4G networks with software inside a base station using Intel's FlexRAN. In 2021 Cohere evolved its software to provide the same benefits for 5G - by disaggregating functions from the CU/DU to make the world's first Spectrum Multiplier xApp for any NR RIC within a Telco Cloud to MU-MIMO enable any FDD and TDD network. Cohere is the first to overcome the latency challenges of moving critical intelligence from the RAN to cloud.

About VMware

VMware software powers the world's complex digital infrastructure. The company's cloud, app modernization, networking, security, and digital workspace offerings help customers deliver any application on any cloud across any device. Headquartered in Palo Alto, California, VMware is committed to being a force for good, from its breakthrough technology innovations to its global impact.

For more information,

Please visit: <https://www.vmware.com/company.html>

About Cohere Technologies

Cohere is the innovator of massive MIMO scheduler and Delay-Doppler channel software for mobile and enterprise networks, and the developer of the Orthogonal Time Frequency Space (OTFS) 6G wireless system. Cohere is a member of the Next G Alliance, the O-RAN Alliance, the Open RAN Policy Coalition, the Open Networking Foundation (ONF) and the National Spectrum Consortium (NSC). Cohere is headquartered in Santa Clara, Calif.

For more information,

Please visit: www.cohere-technologies.com

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