Tomorrow's Mobile Technology

For Today's Network Challenges

COHERE TECHNOLOGIES

- Founded 2011 in Santa Clara, CA (USA)
- USM software significantly improves spectrum and capacity performance for 4G, 5G and Multi-G mobile networks
- USM software can be integrated into existing base stations (brownfield) or be deployed next to existing base stations through defined interfaces, O-RAN (greenfield) and/or Cloud RAN networks
- Patents: 310+ covering 4G, 5G and OTFS
- Major Investors: Koch Investments Group, NEA, Lightspeed, Telstra Ventures, Bell Ventures, Intel, VMware and Juniper
- Business Model: Direct or indirect via partners to licensed mobile operators. Partner with cloud service providers, system integrators and OEM vendors

EXECUTIVE TEAM

Ray Dolan
Chairman & CEO
Sonus, Flarion Technologies (Qualcomm)

Shlomo Rakib
Co-founder & CTO
Gainspeed (Nokia), Terayon (Motorola)

Dr. Ronny Hadani
Co-founder & Chief Scientific Officer
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Ram Prasad
COO/CFO
Gainspeed (Nokia), Purfresh Asyst Technologies, Amber Networks (Nokia)

Ronny Haraldsvik
CMO, SVP Business Development & Field Systems Engineering
SpiderCloud (Corning), BelAir (Ericsson), Flarion Technologies (Qualcomm), Shasta Networks (Nortel), Bay Networks (Nortel)

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HEADQUARTERS

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Company Overview

When Cohere first started the company, it built a proprietary wireless system, Orthogonal Time Frequency Space (OTFS), which demonstrated superior cellular performance in field trials. However, the company was ahead of its time with a next generation waveform. In 2018 the company changed its focus to bring its innovation around the use of Delay-Doppler-based channel detection, estimation and prediction, as well as precoding software to improve 4G and 5G wireless systems.

This innovative technology, called Universal Spectrum Multiplier (USM), is agnostic to any modulation scheme and is fully compliant with 3GPP. The Delay-Doppler channel representation is predictable into the future given that its geometric nature is slow changing. This allows further disaggregation of RAN functions and enables Cohere's USM Cloud Scheduler to reside in the Edge Cloud and creates the foundation for improving cell edge performance via intercell coordination (CoMP).

USM for 4G, 5G and Multi-G Mobile Networks

The 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. Cohere's USM software works in all available spectrum and enables true 4G, 5G and Multi-G co-existence.

USM operates as an advanced wireless optimization system built on innovative Delay-Doppler channel modeling. The system's cloud-based architecture enables function disaggregation and multi-site network visibility, supporting both 4G and 5G networks in FDD and TDD configurations. USM integrates with multiple base station layers to enable FDD MU-MIMO scheduling and beam forming capabilities that is driven by a machine learning capability at the heart of the USM.

USM Adds Significant Value to $1.5 Trillion of Spectrum and Mobile Networks Investments Worldwide

USM leverages massive amounts of Delay-Doppler channel and E2SM-LLC API data to understand long-term traffic flows and patterns, enabling operators to dynamically adjust capacity and coverage based on actual usage. Cloud-hosted AI layers can then oversee large geographic areas spanning many cellular sites and spectral layers - ultimately creating a self-optimizing network that can anticipate and adapt to changing conditions while maximizing spectral efficiency and user experience.

OTFS for Multi-G and 6G Networks

OTFS is next-generation waveform that promises better coverage and spectral efficiency. OTFS supports high mobility and higher frequencies and OTFS is optimal for joint communication and sensing. Cohere's OTFS has been in development since 2011, positioning Cohere at the forefront of wireless communication as networks transition from 5G (OFDM) to a multi-waveform cloud network model that takes full advantage of Artificial Intelligence (AI) for network automation and network insights. Cohere has been developing OTFS Modulation since 2011 and holds over 300 patents.