NEWS RELEASE

Fractal and Integrated Roadways Successfully Enable Smart Roads to Replace On-Building Smart City Technology

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Smart Pavement Features New Antenna System that Supports In-Road Wireless Communications

BEDFORD, Mass. & KANSAS CITY, Mo.--(BUSINESS WIRE)-- Fractal Antenna Systems, Inc. (FRACTAL) and Integrated Roadways, Inc. announce they are deploying the first generation of digital transportation infrastructure – “Smart Roads” – while enabling next generation wireless communications through a new antenna system hidden inside modular precast concrete pavement slabs.

Building upon decades of experience with materials and conformal systems, FRACTAL devised **a fractal-based wideband antenna** (patent 6,985,122 and pat.pending) for installation into Integrated Roadway’s **Smart Pavement**, which is designed to host and hide antennas that provide wireless connectivity for vehicles, devices, and the surrounding area.

Prior demonstrations of smart road technologies have shown the ability to charge electric vehicles as they drive, and embedded sensors to count, weigh, measure, and position vehicles, but there has yet to be a system to successfully enable advanced, modern telecommunications connectivity to the pavement.

“Prior attempts to use antennas in concrete, for example, have come up short. By teaming up with Integrated Roadways, we are able to successfully transmit signals with our antenna systems embedded in the concrete, to allow for connectivity to other wireless devices which can include cell phones or cars. That’s a game changer,” says Dr. Nathan Cohen, Founder, CEO and CTO of FRACTAL.

Difficulties in deploying ubiquitous small-cell antennas has slowed the adoption of “standalone” 5G to a crawl in the USA. Embedding advanced antenna systems in the roads will allow smart roads to replace much of the equipment affixed to vertical infrastructure, such as cell towers, buildings, street lights that are extensively used and becoming an eye sore and costly permit-granting challenge in most cities.

“Attaching antennas and other telecom equipment to vertical infrastructure is a last-generation macro-cell architecture that doesn’t reflect the requirements of modern small-cell distributed antenna systems that enable API based SD-ORAN networks-of-networks,” says Tim Sylvester, CEO and Founder of Integrated Roadways. “With key telecom components embedded in the roadways, citizens and communities can benefit from digital infrastructure that provides immediate wireless connectivity that is invisible, seamless, hyperlocal, and hyperintegrated. This approach is the future of autonomy, telecom, and community-oriented municipal infrastructure.”

FRACTAL and Integrated Roadways will be deploying the new antenna technology starting with Lenexa City Center in Lenexa, KS. The new antenna system will be exclusive to Integrated Roadways for smart road applications, and Integrated Roadways will be exclusively using Fractal products for these implementations.

About FRACTAL

Fractal Antenna Systems provides off-the-shelf and custom antenna and electromagnetic cutting edge solutions to a wide range of end markets and applications. FRACTAL’s antennas and solutions are an integral part of wireless enablement for public safety, telecom, aviation, IoT, medical, and government/military applications, among others. For questions about FRACTAL’s capabilities, products, or custom solutions – visit FRACTAL’s website at **www.fractenna.com** or contact directly at **sales@fractenna.com**.

About Integrated Roadways

Integrated Roadways is a digital infrastructure company with a mission to transform traditional roadways into self-sustaining, digital infrastructure systems that improve public safety, mobility, and communications. Our Smart Pavement System consists of factory-built precast concrete sections embedded with technology to transform ordinary roads into a managed services platform for next-generation mobility and cities. To discover more, visit **www.integratedroadways.com** or follow us on LinkedIn, X/Twitter and YouTube.

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Source: Fractal Antenna Systems, Inc.