



BANF & KORE Deliver Intelligent Tire Solutions for Trucking Industry



Background

The commercial trucking industry faces a persistent and costly challenge: tire-related incidents. The Federal Motor Carrier Safety Administration (FMCSA) estimates that tire blowouts cause nearly 8,000 truck accidents annually in the United States. The FMCSA found that tire blowouts were the primary cause in about 5.6% of large truck crashes, which translates to approximately 8,000 accidents annually. Alongside significant financial losses from vehicle downtime, emergency repairs, cargo damage, and safety liabilities that can range from \$400 to \$300,000 per incident. For fleet operators, tires represent the third-largest operating expense, yet traditional manual inspection methods remain labor-intensive, inconsistent, and often fail to detect critical issues before catastrophic failures occur.

BANF and KORE are addressing this critical industry challenge through a strategic partnership that brings together BANF's cutting-edge intelligent tire sensor system with KORE's industry-leading IoT connectivity and data management platform. This collaboration delivers a comprehensive, real-time tire monitoring solution designed specifically for trucking companies seeking to enhance safety, reduce operational costs, and maximize fleet uptime.

The Challenge: Hidden Costs of Tire Management

Fleet operators struggle daily with the complex challenge of tire management. Underinflated tires - even by just 10% - can increase fuel consumption by nearly 2%, while 80% of tire blowouts result from tread deterioration caused by heat and sidewall flexing in underinflated tires. These seemingly minor issues compound into substantial financial burdens: unplanned downtime from tire failures can cost fleet operators up to \$1,000 per hour in missed deliveries and customer dissatisfaction.

Beyond immediate repair costs, the long-term economic impact extends to increased insurance premiums, accelerated tire replacement cycles, regulatory penalties for emissions violations, and the reputational damage that follows service disruptions. Traditional tire pressure monitoring systems have proven inadequate, offering only basic pressure and temperature readings without the intelligence needed to predict failures, assess road conditions, or optimize vehicle performance. Fleet managers needed a more sophisticated solution - one that transforms tires from passive components into intelligent data sources.

The Solution: IoT-Powered Intelligent Tire Monitoring

The BANF-KORE partnership delivers an innovative solution that combines hardware, connectivity, and analytics into a single, seamlessly integrated system. At its foundation is BANF's intelligent tire sensor system (iSensor System), which utilizes proprietary distance-adapted wireless power technology to continuously monitor tire conditions while vehicles are in motion. Unlike conventional TPMS solutions, BANF's system features self-developed 3-axis acceleration sensors paired with Smart Profiler technology that provides wireless power directly to sensors within fast-spinning tires, enabling real-time, high-speed data sampling that was previously impossible.

These sensors capture comprehensive tire data including pressure, temperature, tread depth, wheel alignment status, tire load measurements, lug nut security, and even road surface conditions. The system's AI-powered analytics engine processes this information in real-time, identifying patterns that indicate potential failures before they occur and providing actionable insights to fleet managers.

KORE brings its proven IoT connectivity infrastructure to enable seamless data transmission from vehicle to cloud. Through KORE's eSIM technology and multi-carrier connectivity management platform, tire data flows reliably across cellular networks regardless of vehicle location or movement across service territories. KORE's connectivity management platform provides a single pane of glass for monitoring all connected devices, with features including automated network provisioning, real-time analytics, SIM lifecycle management, and comprehensive API integration capabilities.

Results and Business Impact

Early implementations of intelligent tire monitoring systems demonstrate substantial return on investment for fleet operators. Properly maintained tire pressure through IoT monitoring delivers fuel efficiency improvements of 10-15%, while predictive maintenance capabilities



reduce unplanned downtime by 30-40%. These systems extend tire lifespan by 20-30% - a critical advantage given that specialized commercial truck tires can cost upwards of \$50,000 each.

The safety benefits prove equally compelling. Real-time monitoring and early warning systems reduce tire-related accidents, directly lowering insurance premiums and liability exposure. Fleet operators report that the ROI from intelligent tire monitoring systems typically materializes within months, driven by combined savings in fuel costs, extended tire life, prevented breakdowns, and improved driver safety.

For fleet managers, the operational advantages extend beyond cost savings. The BANF-KORE solution provides 24/7 visibility into tire health across entire fleets from a centralized dashboard, enabling proactive maintenance scheduling that maximizes vehicle availability. Real-time alerts notify managers and drivers instantly when conditions require attention, while historical analytics support data-driven decisions about tire procurement, rotation schedules, and vehicle utilization patterns.

Drawing from KORE's track record with other IoT partners, fleet operators can expect streamlined operations through consolidated billing across carriers, reduced administrative burden from managing multiple connectivity contracts, and access to KORE's 24/7 global support infrastructure. The partnership's out-of-the-box deployment capability, backed by KORE's managed services for device staging and kitting, accelerates time-to-value for trucking companies looking to transform their tire management practices.

Vision for the Future

The BANF-KORE partnership represents more than an incremental improvement in tire monitoring - it signals a fundamental transformation in how the trucking industry approaches fleet safety and operational efficiency. By combining BANF's expertise in intelligent tire sensing with KORE's proven IoT connectivity platform, this collaboration establishes a new standard for predictive maintenance and data-driven fleet management.

Ron Yoogun Lee, VP of Global Business Development at BANF, commented on the company's forward-looking mission, stating: "Just as seatbelts and airbags revolutionized safety for passenger vehicles, intelligent tire monitoring will soon become an indispensable safety system for commercial fleets. As autonomous trucking continues to advance and global supply chain pressures grow, real-time tire intelligence will be the foundation for ensuring safety, reliability, and operational excellence across the logistics industry."

With KORE's connectivity infrastructure spanning 200+ countries and supporting over 20 million connected devices globally, the partnership is positioned to scale from individual fleet deployments to industry-wide adoption. Together, BANF and KORE are delivering the intelligent tire solutions that will power the next generation of commercial transportation - safer, more efficient, and fully connected.





About KORE

KORE is a pioneer, leader, and trusted advisor delivering mission critical IoT solutions and services. We empower organizations of all sizes to improve operational and business results by simplifying the complexity of IoT. Our deep IoT knowledge and experience, global reach, purpose-built solutions, and deployment agility accelerate and materially impact our customers' business outcomes.

[For more information, visit korewireless.com.](http://korewireless.com)



About BANF

BANF develops intelligent tire and sensor technologies that enhance vehicle safety and performance through real-time data insights and predictive analytics. Our innovative technology ensures optimum safety and fuel efficiency by continuously monitoring not only tire pressure and temperature but also tire wear, wheel alignment, lug nuts status, tire-load, and road conditions in real-time.

[For more information, visit banf.ai.](http://banf.ai)