



## **Dana Launches Spicer® Smart Suite™ Intelligent Load Monitoring System (ILMS) for Boosting Telehandler Performance, Safety**

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MUNICH, April 11, 2016 /PRNewswire/ -- Dana Holding Corporation (NYSE: DAN) today announced the availability of the Spicer® Smart Suite™ intelligent load monitoring system (ILMS), an advanced technology option for telehandlers that uses data from across the vehicle to prevent tip-over incidents, provide better estimates of static loads, and supply intelligent calibration management.

The first in a series of Spicer Smart Suite connected-vehicle technology packages, Spicer Smart Suite ILMS collects data from the axle and other vehicle systems to provide robust, real-time operating metrics. As a result, Spicer Smart Suite ILMS can offer vehicle and load monitoring in dynamic conditions, such as cornering, lifting, and shuttling.

In its most basic implementation, Spicer Smart Suite ILMS provides alerts of improper operating maneuvers. In its most sophisticated form, Spicer Smart Suite ILMS can monitor hazardous movements and work in conjunction with vehicle controllers to provide automatic countermeasures and restore safe operating conditions, such as retracting the boom or limiting vehicle speed. The system can also be configured to enable estimates of lifted loads and send distress signals if the vehicle is at risk of tipping over or otherwise encounters conditions causing instability.

Dana has begun testing Spicer Smart Suite ILMS on a telehandler powered by an 83 kW (111 hp) engine, with plans to make the technology available for testing by vehicle manufacturers by the end of 2016. Ultimately, the technology will be offered as an optional feature on all Spicer axles for telehandlers with lifting capacities ranging from 2.3 to 6.8 tonnes (5,000 to 15,000 pounds).

"Advanced operating intelligence is transforming the performance of telehandlers across many dimensions, offering improved safety, maintenance, fuel economy, optimal hydraulic circuit power use, and precise vehicle control," said Aziz Aghili, president of Dana Off-Highway Driveline Technologies. "Dana is taking advantage of this technology to reinvent the axle from a passive mechanical component into a highly integrated system with electronics and intelligent algorithms that improve performance, extend vehicle life, and reduce the total cost of ownership."

### Spicer Smart Suite Technology Generates Intelligence

Spicer Smart Suite technology is a platform of fully integrated, connected-vehicle features that converts operating data from the drivetrain into actionable insights for enhancing productivity, improving operator and machine safety, reducing maintenance costs, and decreasing total operating costs.

Spicer Smart Suite technology is an integrated system that collects, manages, analyzes, communicates, and acts on data sourced from the drivetrain to offer load monitoring, condition monitoring, tractive torque estimation, speed monitoring, and direct measurements of steering angles.

This technology communicates to end users on and off the vehicle, allowing critical alerts and analysis to be shared on vehicle central display panels, via tablets, and in fleet management centers. It is also designed to take these insights a step further by interfacing with vehicle controllers to perform key functions independent of operator intervention.

Leveraging Dana's decades of expertise, Spicer Smart Suite technology seamlessly integrates vehicle intelligence technologies with Dana's line of drivetrain components. As a result, Spicer Smart Suite technology provides insights into vehicle performance, supplying greater long-term value over the remote-mounted and retrofitted solutions currently available from third-party providers.

Spicer Smart Suite technology is fully integrated into component housings, delivering optimum packaging and ensuring that sensitive mechatronic sub-systems are fully protected from accidental damage and the impacts of typical operating environments.

Dana's wide range of advanced drivetrain technology concepts will be showcased at Bauma 2016 in hall A4, stand 326. To learn more, visit [www.dana.com/offhighway](http://www.dana.com/offhighway).

### About Dana Holding Corporation

Dana is a world leader in the supply of highly engineered drivetrain, sealing, and thermal-management technologies that improve the efficiency and performance of vehicles with both conventional and alternative-energy powertrains. Serving three primary markets – passenger vehicle, commercial truck, and off-highway equipment – Dana provides the world's original-equipment manufacturers and the aftermarket with local product and service support through a network of nearly 100 engineering, manufacturing, and distribution facilities. Founded in 1904 and based in Maumee, Ohio, the company employs more than 23,000 people in 25 countries on six continents. In 2015, Dana generated sales of nearly \$6.1 billion. For more information, please visit [dana.com](http://dana.com).

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