

## Modular Mining Systems' Collision Awareness System to Feature DENSO's Industry Leading Connected Vehicle Technologies for Advanced Risk Mitigation in Mines

Tucson, Arizona – June 26, 2017: Modular Mining Systems, Inc., the global leader in real-time mine management solutions, today announced its fourth-generation Collision Awareness System (CAS) to feature key technologies from DENSO. The system combines DENSO's industry-leading, standards-based vehicle-to-vehicle (V2V) connected vehicle technologies with its own software and hardware, enabling the CAS to help increase situational awareness and mitigate collision risk in a mine.

Established in 1949, DENSO is recognized as one of the world's largest Tier 1 suppliers of advanced automotive technology, systems and components. The Collision Awareness System leverages DENSO's proven technologies to provide 360-degree situational awareness. Audible and visual alerts warn operators of potential collisions with other CAS-enabled equipment, while complex algorithms perform real-time risk assessment calculations to minimize nuisance alarms.

"Our relationship with DENSO underscores our commitment to bringing the best-of-breed solutions to our customers and takes collision awareness technology in the mining industry to new heights," said Lucas van Latum, Director, Product Strategy at Modular. "Our approach to collision awareness is built upon 15 years' worth of standards, technologies, and algorithms developed and tested for the automotive market, which we've tailored and extended to meet the needs of the mining industry," he added.

As part of the collaboration, Modular is able to leverage DENSO's many years of automotive safety and connected vehicle technology R&D, extensive automotive industry expertise, and rigorous governmental safety testing and qualifications. The system works in several standard license-free frequencies, as well as in the licensed 5.9GHz dedicated short-range communications (DSRC) frequency spectrum, which prioritizes safety over non-safety applications, and is designed to perform in extreme weather conditions including rain, fog, snow, and heat. Modular and its customers will also benefit from DENSO's future product enhancements and innovations as safety technologies evolve.

"Combining Modular's leading solutions with DENSO's V2V technology, including dedicated short range communications (DSRC), will put the latest advances from global intelligent transportation systems into mines," said Roger Berg, Vice President, North America Research and Development at DENSO. "The applications for V2V technology extend far beyond automotive, and we are confident our collaboration with Modular will improve the mining environment and contribute to safety in mines."

Modular's Collision Awareness System will be showcased at this year's Mining Indonesia Expo from September 13-16 in Jakarta, Indonesia; at Expositram 2017 from September 18-21 in Belo Horizonte, Brazil; and at Expomineria from October 25-28 in Guadalajara, Mexico.

### About DENSO in North America

DENSO, headquartered in Kariya, Japan, is a leading global automotive supplier of advanced technology, systems and components in the areas of thermal, powertrain control, electronics and information and safety. In North America, DENSO employs more than 23,000 people at 30 consolidated companies and affiliates. Of these, 25 are manufacturing facilities located in the United States, Canada and Mexico. In the United States alone, DENSO employs more than 15,000 people in California, Michigan, North Carolina, South Carolina, Tennessee, Kentucky, Georgia, Iowa, Ohio, Pennsylvania, Texas, Alabama and Arkansas. DENSO's North American consolidated sales totalled US\$9.9 billion for the fiscal year ending March 31, 2016. For more information, go to [www.densocorp-na.com](http://www.densocorp-na.com).

**About Modular Mining Systems, Inc.**

Founded in 1979, Modular Mining Systems, Inc. is the market-leading provider of powerful information management solutions that meet the needs of both surface and underground mining operations worldwide. Modular is committed to delivering state-of-the-art mine management technologies in the areas of production, machine guidance, equipment health, and operator safety. Modular employs close to 700 employees in 10 globally-distributed offices, with systems deployed at 250 client sites, including 18 of the 20 largest mines in the world. For more information, visit <http://www.modularmining.com/>.

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