TIER IV and Shunan Bulk Terminal collaborate to automate transportation using an autonomous dump truck, targeting driverless operations by the end of 2028

Tokyo, November 12, 2026 – TIER IV, the pioneering force behind open-source software for autonomous driving, and Shunan Bulk Terminal Co., Ltd., a bulk cargo handling and transportation company operating at the Port of Tokuyama-Kudamatsu and a consolidated subsidiary of Tokuyama Corporation, have launched a collaboration to automate transportation operations using an autonomous dump truck. With support from Tokuyama, the companies aim to achieve driverless operations at the port by the end of 2028.

Ports in Japan's coastal industrial areas serve as vital logistics hubs, facilitating trade with countries across Asia and around the world while supporting the storage and transportation of raw materials and energy resources essential to the country's manufacturing industries. At the same time, the logistics industry faces an urgent need to address driver shortages resulting from an aging and shrinking workforce and to establish more sustainable transportation systems. Against this backdrop, there is growing demand for greater efficiency through labor-saving measures and automation in transportation operations at ports and in surrounding coastal areas.

TIER IV is advancing the deployment of autonomous driving technology across a wide range of specialized vehicles, including construction and agricultural machinery, and factory transport vehicles, in addition to public transportation, leveraging Autoware, open-source software for autonomous driving. Shunan Bulk Terminal handles the unloading, storage, and outbound transportation of energy resources, including coal and biomass fuels, at the Port of Tokuyama-Kudamatsu, an international bulk strategic port on the Seto Inland Sea in Yamaguchi Prefecture. Tokuyama, a chemical manufacturer, utilizes these energy resources to generate electricity and steam at its in-house power generation facilities, supporting the production of chemicals, advanced electronic materials, and other products.

Combining TIER IV's expertise in developing, deploying, and operating autonomous driving technology with Shunan Bulk Terminal's experience in dump truck transportation, the companies will work to automate the currently crewed dump truck operations along the route from Shunan Bulk Terminal's storage area to Tokuyama's in-house power generation facilities, taking into account the on-site requirements associated with Tokuyama's receipt of energy resources. They will develop the technologies and operational fram

ework required for the specific site environment, advancing efforts toward driverless operations by the end of 2028.

The autonomous dump truck will run on Idemitsu Renewable Diesel, a next-generation biofuel supplied by Idemitsu Kosan Co., Ltd., one of Shunan Bulk Terminal's shareholders. By using this fuel, the companies also aim to reduce greenhouse gas emissions associated with transportation operations.

Building on the knowledge and experience gained through this collaboration in deploying and operating autonomous driving technology, the companies will explore opportunities to extend automation beyond the initial route to similar transportation operations in and around the Port of Tokuyama-Kudamatsu.

About TIER IV

TIER IV stands at the forefront of deep-tech innovation, pioneering Autoware*, open-source software for autonomous driving. With a comprehensive suite of platforms and services built around Autoware, TIER IV provides everything from software development and vehicle procurement to operational support. Through the Autoware ecosystem, TIER IV works with partners worldwide to shape the future of intelligent vehicles with open-source software, aiming to create mobility that is safer, more sustainable, and accessible to all.

*Autoware is a registered trademark of the Autoware Foundation.

About Shunan Bulk Terminal

Shunan Bulk Terminal was established in August 2008 with investments from entities including Tokuyama, Idemitsu Kosan, Tokuyama Kairiku Unso, and Shunan City, following the designation of the Port of Tokuyama-Kudamatsu as a designated industrial port area, beginning full-scale operations in April 2012. Operating primarily at the Port of Tokuyama-Kudamatsu as an intermediate storage and relay hub for imported coal and biomass fuels, the company handles the unloading, storage, and dispatch of bulk cargo. The company is also actively working to reduce CO_2 emissions through initiatives such as installing an on-site solar power plant to supply a portion of its electricity with renewable energy.

About Tokuyama

Established in 1918 in Shunan City, Yamaguchi Prefecture, to manufacture domestically the soda ash that had previously been imported, Tokuyama operates in diverse sectors. Alongside traditional basic chemicals such as soda ash and caustic soda, its main busine

ss fields currently include advanced electronic materials (such as polycrystalline silicon f or semiconductors and high-purity isopropyl alcohol for the electronics industry) and life sciences (such as photochromic lens materials and dental materials).

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