PRESS RELEASE

Contacts:
Sara Secomandi, +39 0331 444 111, communications@tenova.com
Michela Boccadoro, +39 335 702 5665, michela.boccadoro@tenova.com

Tenova's SafeForPorts project set to transform Port Operations

This pioneering initiative will leverage VR and AI to revolutionize port operations prioritizing safety in the maritime industry.

Castellanza, March 04, 2024 – **Tenova**, a leading company specializing in sustainable solutions for the metals and the mining industries, thanks to the project **SafeForPorts** has won a call for proposals issued by the **Istituto Italiano di Tecnologia** (IIT) under the banner of **RAISE** (Robotics and AI for Socio-economic Empowerment), implemented under the **National Recovery and Resilience Plan**, Mission 4 funded by the **European Union – NextGenerationEU**. SafeForPorts is a new project tasked with creating **smart and sustainable ports** by implementing key **Industry 4.0 technologies**. It will revolutionize the safety of machine operators improving the efficiency of port operations by offering an innovative solution that integrates training on one side and assisted maintenance on the other to address critical needs in port areas.

Through the use of a **Virtual Reality simulator**, the project will develop a comprehensive solution for the **remote training** of operators and **on-field assistance** for the **operation and maintenance of bucket ship unloaders** (a rail-mounted mobile unit typically installed on port docks). The VR simulator will be accessible to operators via headsets, while **remote assistance** will be enhanced through the processing of structured photographic material using **Computer Vision algorithms**.

Designed and developed in Tenova's virtual laboratory in Genoa, the VR prototype will include a workstation cabin with handheld controls simulating the **3D operational environment** of the machine. The final system will advance the laboratory model by developing interactive elements and refining operational logic to achieve **full virtual operational capability**.

This integrated approach will allow operators to execute maintenance workflows systematically, while supported by a hands-free head-mounted wearable device. These workflows involve capturing images of criticalities and providing inputs for processing algorithms that generate reports on system degradation. In addition, Tenova has foreseen the possibility of developing a **Digital Twin** for managing cargo hold procedures on the ship in unmanned operation mode.

The project falls within RAISE's activities, which include the implementation of robotics and AI systems for the management of port traffic, contributing to the advancement of intelligent solutions in the maritime industry. It is being developed in partnership with **Prosoft Intesys** and **InformAmuse** as technology providers.

Silvio Leoni, EVP of Material Handling Business Unit, commented: "*SafeForPorts holds strategic significance for Tenova, not just in terms of business but also for actively contributing to the development of new technologies and the design of increasingly intelligent, optimized processes for smart and sustainable ports. This project testifies our commitment to prioritizing and enhancing a core value at Tenova: safety. As we embark on this initiative, we recognize it as a catalyst for innovation and a cornerstone toward shaping the future with new possibilities and perspectives.*"

About Tenova
Tenova, a Techint Group company, is a worldwide partner for sustainable, innovative, and reliable solutions in the metals and – also through the well-known TAKRAF and DELKOR brands – in the mining industries. Tenova leverages a workforce of over 2,300 forward-thinking professionals located in 19 countries across 5 continents, who design technologies and develop services that help companies reduce costs, save energy, limit environmental impact, and improve working conditions.

For more information, visit www.tenova.com.

About RAISE
RAISE (raiseliguria.it) aims to develop and commercialize technological solutions based on robotic systems and artificial intelligence that meet the real production and social needs of the Ligurian territory. The project aims to enhance and boost research and development in these technologies for various areas of interest, including healthcare, environmental sustainability, smart ports, and accessible and inclusive smart cities. RAISE approach focuses both on the needs of people and the region by facilitating the transfer of innovative technologies from research to market, providing resources, knowledge, and support to generate sustainable, inclusive, and resilient innovation. Furthermore, the project aims to create a highly attractive ecosystem for companies, investors, and researchers, both nationally and internationally.