

Press Release - for immediate release

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Rubedos introduces 3D visual perception system for robot applications

New VIPER system equips robots with eyes and brain

Kaunas, Lithuania, 08 January 2019. Addressing the technological needs for next generation industrial and service robots, Rubedos today introduced its new 3D visual perception system VIPER. Powerful and lightweight, the bolt-on and easy to integrate VIPER system enables intelligent automation with a turn-key set of hardware and embedded computing. It can be applied to a wide range of use cases to equip industrial and service robotics with visual perception. Its stereo vision system with two 3.4 MP low light cameras continuously measures environment depth in 3D with a depth frame rate up to 40 fps over range distances up to 50 meters. All object detection and classification tasks are performed on-board with the embedded NVIDIA Jetson TX2 computing unit using algorithms specifically designed by Rubedos. By this, VIPER offloads low- and high-level image processing to the on-board processor, reserving the robot's main computing resources for robot navigation.

“In the smart factories of the near future, intelligent robots will leave their safety cages. However, the lack of visual perception still is the sandbag of intelligent automation as these next generation robots depend on the ability to acquire, organize, and interpret surrounding visual data,” says Rubedos Co-Founder Linas Vaitulevičius. “Our VIPER

Founded in 2009, **Rubedos** (legal name – Rubedo Sistemas), a Lithuania-based pioneer company of mobile robotics solutions, develops 3D visual perception and navigation technology for free ranging vision guided robotics applications in various industries, including manufacturing and material handling. Rubedos provides hardware, software and services to enable self-driving vehicle development, deployment and fleet operation; and enables to convert customer selected vehicle platforms into robotic systems.

In the healthcare sector the company is well regarded for its FDA-compliant robotic precise tumor targeting solution designed for an image guided radiation therapy product of a NASDAQ OMX NORDIC listed medical device manufacturer.

For more information visit Rubedos on the web at www.rubedos.com.

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system achieves this by continuously measuring environment depth in 3D and industry-specific object detection and classification.”

Compact and light weight system

With its low energy consumption, a compact design of 246 x 98 x 35 mm and a light weight of 0.8 kg the VIPER system is particularly suitable for smaller robotic systems. It is auto-calibrated, IP65 ingress protected and physically connected to the robot with standard ¼” – 20 UNC, M4 mounting. Communication is supported via Ethernet at 1 Gb/s.

Perception Apps

Rubedos designed the VIPER system extensible with a set of accelerated 'perception apps' built on top of NVIDIA Jetpack SDK. These application level software modules address standard factory floor tasks such as obstacle detection, a follow-me function, a safety volume guard to detect trespassing attempts, an object identification tool; and 3D vision based simultaneous localization and mapping. “On top of that, we develop perception apps adapted to tailor-made applications,” adds Linas Vaitulevičius. “Overall, the new VIPER system provides high-density, low-power, long-range optical depth sense as well as visual perception in an on-board package. All these features make VIPER a true value proposition for integrators and vision guided system manufacturers.”

Since 2014 Lithuania-based Rubedos has focused its R&D on development of 3D visual perception systems for robotics. Prior to that, the company has successfully developed a robotic tumor targeting solution for an image guided radiation therapy that passed the high

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hurdles of the US Food and Drug Administration (FDA).

Images

Photo 1_New Rubedos 3D visual perception system VIPER

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