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## **VTEC Lasers & Sensors To Showcase Free Space Optical Receiver At CES 2021**

*VTEC and TNO will sign a consortium agreement to collaborate on dual function optical receiver for Free Space Optical Communication that will increase functionality and decrease total cost in a joint project.*

**Eindhoven – January 11, 2020 – [VTEC Lasers and Sensors](#)**, a custom solution provider in the areas of photonics and IoT, will announce today the start of the development of dual function high speed quad-detector receiver, as part of the Netherlands Pavilion at the all-digital [2021 Consumer Electronics Show \(CES\)](#), the world's gathering place for all those who thrive on the business of consumer technologies. VTEC Lasers and Sensors will showcase their plan for optimized tip-tilt sensor design that would enable the next generation free space laser communication terminals (LCT).

### **Optimizing tip-tilt sensors for optical communication**

Optical laser communication is rapidly maturing and is expected to complement and replace traditional RF-communication in the race for ever increasing data bandwidth, lowest latencies and global coverage. With this development a substantial market is emerging for the high-end opto-mechatrical system laser communication terminals (LCT). Tip-tilt sensors are a key element inside LCT which have been used in achieving the tracking performance that is required to achieve high data rates and link robustness. They are readily available and used in a variety of optical measurement applications. However, they are not optimized to the specific needs of optical communication, like the feature of ultra-small gap size, high speed, **high** sensitivity and position stability. During the CES 2021, VTEC will showcase the concept for the tip-tilt sensor design with optimization for optical communication which they will work on together with TNO.

“Our optical receiver will be a breakthrough in low size, weight and power (SWaP) for FSO ground stations and airborne terminals” said Jan Mink, CEO of VTEC Lasers & Sensors. “It is a privilege to cooperate with TNO on these disruptive innovations, where VTEC can benefit tremendously from the knowledge and assets of TNO. It will open up innovation in 5G terrestrial, satellite uplink/downlink and other airborne links to enable, worldwide, improvements in quality of life like precision agriculture”.

## **Dual function high speed quadrant receiver**

The dual function high speed quadrant receiver will combine the optical beam tracking and data communication channel in the traditional free space laser communication terminals. This approach improves the robustness and reduces cost of the existing LCT by saving a beam splitting and alignment procedure to a separate device in the system that performs the data communication.

TNO is looking forward to working together with VTEC in this endeavor. The research and advancement of the optimized optical receives will enable TNO and their partners to take important steps in bringing the higher performance laser communication subsystems and systems to the market. "We are very excited about the improvement of this key component, as we expect it to significantly reduce link losses, size and overall complexity of our LCTs. It's very promising." said Thomas Liebig, TNO's System Engineer.

Contact [info@vtec-ls.nl](mailto:info@vtec-ls.nl) to set up a meeting at CES - Booth 10475, January 11 - 14, 2021.

## **About VTEC Lasers and Sensors**

VTEC Lasers and Sensors is an innovation solutions company specializing in optics and data integration to create customized systems for a wide variety of industries, including fitness, telecommunication, manufacturing, environmental, and communications.

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## **About TNO**

The Netherlands Organization for Applied Scientific Research (TNO) is an independent research organization. We connect people and knowledge to create innovations that boost the sustainable competitive strength of industry and well-being of society. Now and in the future. This is our mission and it is what drives us, the over 3.500 professionals at TNO, in our work every day. We work in collaboration with partners and focus on transitions or changes in nine social themes that we have identified together with our stakeholders.

More information about TNO's Space & Scientific Instrumentation can be found on [www.tno.nl/space-scientific-instrumentation](http://www.tno.nl/space-scientific-instrumentation)

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