

FULL WAVEFORM LIDAR

For efficient, versatile and sensitive range measurements

Keywords: Lidar, waveform lidar, Light Detection and Ranging, Ladar

TECHNOLOGY

The system developed by INO is a full waveform Lidar which can be used to measure ranges of solid target as well as mapping aerosols in air and water. This system is a compact and fairly low-cost Lidar, based on a complete digital signal acquisition platform with up to four simultaneous channels and able to detect and range multiple targets or map relative aerosol concentration in the air.

APPLICATIONS

Full waveform Lidar offers important advantages over analogous range finders for ranging and mapping purposes in many industries, such as:

- Environment: aerosol mapping and monitoring, distributed water turbidity measurements, spectroscopic characterization of surfaces and aerosols, etc.;
- Security and Defense: situational awareness in low-visibility conditions: whiteout, brownout, fog, etc.), range measurements, cloud mapping for chemical and bioaerosols threats, visibility measurements, etc.;
- Material handling: level measurements (liquids, dusty materials), volume of stock piles, etc.

STATE OF DEVELOPMENT

The full waveform Lidar has been developed up to the field deployable level. Multiple validation tests have been conducted in industrial applications such as: cloud mapping, level measurements in dusty environments, liquid natural gas level measurements, target detection and ranging in fog, long-range detection with low-energy pulses (up to 1 km), etc.

INTELLECTUAL PROPERTIES

List of patents available on request.

COMPETITIVE ADVANTAGES

The full waveform Lidar platform developed by INO surpasses many requirements of the range measurements market, its main competitive advantages being:

- Complete waveform digital recording;
- Oversampling capability;
- High dynamic range;
- High-accuracy ranging;
- DiAL (Differential Absorption Lidar) capability;
- Onboard data acquisition and processing (FPGA);
- Multiple wavelengths/scattering angles capabilities.

BUSINESS OPPORTUNITY

INO is looking for integrators and manufacturers, already involved in the industrial sector, who would like the opportunity to use and integrate this platform in specific applications. INO is also seeking entrepreneurs interested in investing in this technology in order to develop it as a product to address specific commercial markets.



Prototype

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For the complete list of technologies available for transfer
www.ino.ca/available-technologies