

News Release

September 7, 2017

Pioneer Develops Unique In-Car 3D-LiDAR Using MEMS Mirror

Start supplying samples to companies in Japan and overseas in late September for installation in vehicles with Level 3 or higher autonomous driving technology on general roads

Pioneer will start supplying samples of 3D-LiDAR, the company's unique driving space sensor that uses MEMS mirror, in late September to car manufacturers, ICT related companies and others in Japan and overseas.

3D-LiDAR is a sensor that can precisely measure the distance to a remote object and detect the size of an object. It allows the shape of an object to be grasped, making it an indispensable device and the key to autonomous driving. Aiming to start mass production in 2020 onward, Pioneer is developing a high-performance, compact and low-cost 3D-LiDAR sensor.

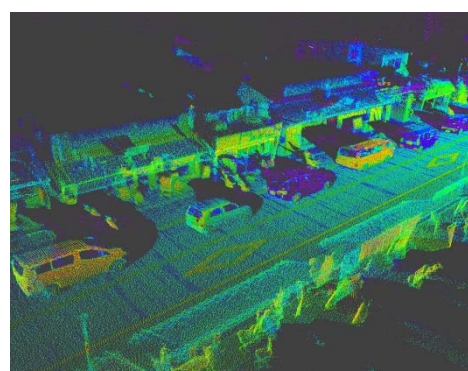
The 3D-LiDAR using MEMS mirror to be supplied, can be put into practical in-car use in combination with the MEMS mirror, characterized by a small aperture with a lens, and by optimizing the optical design. Pioneer will supply the 3D-LiDAR samples to car manufacturers, ICT related companies and others in Japan and overseas to conduct operation verification for the comprehensive system which will be put into practical application.

Based on the verification results, Pioneer will pursue the specifications, shape, size and other features suitable for use with each company. It will also continue to develop technologies that utilize the unique digital signal processing method to improve the measurement capabilities of dark-colored and distant objects (in case of the laser light received by the LiDAR is very low), something that has been considered difficult with conventional types of LiDAR. Ultimately, Pioneer aims to install 3D-LiDAR sensor in vehicles with Level 3 or higher autonomous driving technology on general roads, and applied in next-generation GIS service.

Pioneer will exhibit a sample of 3D-LiDAR at the Tokyo Motor Show, which is scheduled to open at the end of October at Tokyo Big Sight in Tokyo.



[Image of 3D-LiDAR sample]



[Image of point-group map data collected by LiDAR]

- * MEMS : Micro Electro Mechanical Systems
- * ICT : Information and Communication Technology
- * GIS : Geographic Information System

[Pioneer’s approach to autonomous driving]

Pioneer is developing a high-performance, compact, low-cost 3D-LiDAR sensor system for in-car application as well as a map for autonomous driving. Utilizing the sensor and map, it will also develop/propose an efficient maintenance/operation system (“data ecosystem”) which automatically collects surrounding information from passenger vehicles and then updates and distributes the map data for autonomous driving.

■ Roadmap for autonomous driving

