Integrated Fixed-wing UAV and LidarPod Solution Pushes Boundaries in Surveying

The Routescene proposition to transform the approach to surveys across the world is taking hold. Collaborating with Hanseatic Aviation Solutions, Mapix Technologies – the company behind Routescene – has jointly developed an integrated fixed-wing UAV and LidarPod solution, which is one of the first such products to become commercially available in the world.

Following in-depth customer research, the companies identified a gap in the market for an unmanned aerial 3D mapping solution capable of flying long-distances, particularly for use in large countries with great expanses of remote land such as Australia, USA, Canada and Eastern Europe. The applications of this integrated solution are diverse from long distance surveys such as powerline inspections in the utilities sector, biomass mapping of forests to geophysical surveys.

The successful maiden flight of the integrated Hanseatic S360 and Routescene LidarPod took place July 2015 in Bremen, Germany, to demonstrate the capability of this new solution and to collect sample data (image of 3D point cloud showing the runway at Bremerhaven airport supplied). The German aviation authorities were obviously so confident in the product they gave permission to fly in the same circuit as manned aircraft.

Integrated

The benefits of this fully integrated solution are promising. The LidarPod is integrated internally within the S360 itself, rather than being wing-mounted, as may be seen with equipment elsewhere. This reduces drag which enables longer flight and survey times. Integration of the LidarPod into the nose cone of the S360 minimises the level of noise and vibration travelling from the rear mounted engine, ensuring the GNSS/INS is not adversely affected, enabling positioning to be as accurate as possible.

As opposed to rotor UAVs, the S360 is fixed-wing and built for endurance long-distance flights. In addition, it works in up to Force 7 winds extending the operational window in which surveys can be performed. The S360 has significant payload capacity enabling the integration of additional survey and geophysical sensors as well as the LidarPod. In summary, because this is an internally integrated solution it enables rapid set up and is easy to deploy in the field.

Intergeo

Michael Schmidt, managing director of Hanseatic Aviation Solutions, and Gert Riemersma, CEO of Routescene, met for the first time at Intergeo 2014 and immediately understood the potential power of a collaboration. Routescene launched the highly acclaimed LidarPod at Intergeo 2014, which quickly attracted wide interest and is now generating business across four continents. Hanseatic Aviation Solutions launched in September 2013 with the purpose of producing well-designed, robust and quality engineered unmanned aircraft which are easy to handle and maintain.

Gert Riemersma said the affinity between both companies and the potential was obvious. Exploratory discussions with clients confirmed a real demand and they started development in earnest at the start of 2015. They have already seen significant interest from the forestry and geophysical exploration community.

Michael Schmidt stated their combined expertise and experience is unique, Gert Riemersma is a seasoned surveyor and has worked with Lidar since 2008. He has used his wealth of practical experience with survey sensors, in particular GPS/INS, to develop the LidarPod into a market-changing survey and mapping solution. Schmidt himself has over 15 years experience in the aerospace and aviation industry, enabling the companies to jointly design and manufacture a practical and rigorous integrated product which will withstand the harsh environments they expect it will be operated in.

For more information see www.routescene.com and www.hanseatic-avs.de.