

Highways in the Sky

LEXINGTON, Massachusetts (June 17, 2016) – WinterGreen Research announces that it has published a new study Drone Transponders: Market Shares, Strategy, and Forecasts, Worldwide, 2016 to 2022. The 2016 study has 268 pages, 92 tables and figures. Worldwide drone transponder markets are poised to achieve significant growth with the need to achieve protected airways.

The simplest way to protect against mid-air collisions is to require the use of ADS-B transponders on all aircraft. Transponders can turn an uncooperative environment into a cooperative environment.

Transponders provide location and positioning information about smart commercial drones. These drones have a computer inside, they are easy to fly, remotely maneuverable, have a camera, and contain sensor logic. Smart drones are evolving computer driven collision avoidance technology making the flying more reliable.

Remote operation occurs in the context of a workflow and sensors. Cameras are improving dramatically to permit management of video and picture taking that is realistic and detailed. Drone actuators, drone transponders, are needed to support drone package delivery. This is a huge new market that speeds economic development, makes it easier for the middle class to both work, and purchase lifestyle items and food efficiently.

Drones based on aerial robotic platform technology can be used to make deliveries to each person's home, landing on the back doorstep, leaving packages in a locked box. The drone package delivery technology has reached a level of maturity that bodes well for market development. Drone systems are mature enough to be at the forefront of aerospace manufacturing.

Dronecode is an independently funded software project that harnesses the power of collaborative development. The aim is to fuel innovation across drone industries and ecosystems. Dronecode Foundation is a nonprofit organization working on a common, shared open source platform for Unmanned Aerial Vehicles (UAVs). Dronecode brings together existing and future open source UAV software projects.



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APM UAV software platform was developed by 3DRobotics. 1,200 developers are working on Dronecode's six projects focused on maximizing adoption of the project's cost-effective, reliable and technologically advanced UAV software.

Micro-Avionix has an ultra-lightweight low cost ADS-B transponder for UAS. Micro-Avionix has developed an ADS-B suitable for UAVs of all sizes to improve flying safety for all. The ping™ is a family of ultralight weight, low cost, ADS-B transponders.

Weights range from 1.5 to 30 grams, delivering a variety of types of performance. The ping2020™, for instance, is capable of IN on both 1090ES and 978UAT, and OUT on 978UAT. The products are fully compliant with the minimum performance standards of DO-282B Class A1S. Micro-Avionix has developed an ADS-B suitable for UAVs of all sizes to The ping™ is among the world's first families of ultralight weight, low cost, ADS-B transponders.

Transponder and sense and avoid technology sponsorship by Sagetech, L-3 Aviation Products, FreeFlight, Micro-Avionix, Google, Trig, DJI, and Intel has been effective. Development by

Dronecode application ecosystem provides huge advances in drone real-time sense and avoid behavior. An open source collaboration is expected to accelerate deployable solutions for agile and reliable operation in the national airspace. The open source platform has been adopted by many organizations on the forefront of drone technology: 3DRobotics, Parrot, Qualcomm, Intel, DroneDeploy, Yuneec, Airphrame, and others.

With 750,000 users and 500 active developers the open source code initiative represents a compelling community of professionals and enthusiasts is able to support active improvements in control of airspace and improvement in flying safety for all. The alliance has worked on development standardization and software module interoperability.

According to Susan Eustis, lead author of the study, "Use of drone transponders represents a key milestone in provision of value to the airborne package delivery industry. Customized cameras are used to supplement GPS navigation, acting as eyes of the drone, permitting package delivery everywhere. Digital controls will further automate flying, making ease of use and flight stability a reality.



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New materials and new designs are bringing that transformation forward. By furthering transponder innovation, continued growth is assured.”

The worldwide market for drone transponders is anticipated to start from nothing and reach \$2.5 billion worldwide by 2022 growing in response to the need to prevent drone collisions, keep the highways in the sky safe, and manage routing of commercial drones. Multiple applications drive market growth, most of all package delivery occurs out of line of sight. Other applications for drone transponders are in consumer photography, lightweight commercial drones for real estate, the military, law enforcement, border control, homeland security, utility infrastructure surveillance, agriculture, aerial mapping, and package delivery.

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WinterGreen Research supports various market segment programs; provides trusted technical services to the marketing departments. It carries out accurate market share and forecast analysis services for a range of commercial and government customers globally. These are all vital market research support solutions requiring trust and integrity.



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Key Words: Drone Transponders, Drones, Military Drones, Commercial Drones, Drone Unmanned Aerial Systems (UAS), Drone 3D Mapping, Drone Commercial Pipeline Observation, Drone Border Patrol, Drone Package Delivery, Drone Photography, Drone Agriculture, Aerial Refueling, Law Enforcement Drones, Video from the Air, Delivery by Air, Photography from the Air, Military Mission Support, Cameras On Stable Flying Platforms, Package Delivery Systems, 3D Mapping, UAV,



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