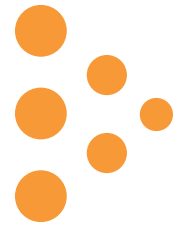


Unmanned Vehicles Drones

Fact Sheet



Drone Application Highlight

The rise of the drones has ushered in a new era in how we may perform many development, inspection and surveillance activities. The machines are capable of carrying out many



essential missions providing new and unique information used to compliment current information streams enabling greater accuracy and precision in decision-making.

Many tasks may use drones in complementary fashion, but there are a large number of personnel intensive tasks that will be replaced by drones. Drones may be used as first surveys, mapping, discovery, general inspections, hazardous environment remediation and security and surveillance.

Unmanned Aerial Vehicle (UAV) use may outpace the use of Unmanned Ground Vehicles (UGV), but this should not limit the assessment of each platform, with highly specific detection modes, for a specific application. In fact, there are many places where technical personnel, or aerial drones, cannot go due to configuration or environmental limitations.

In many cases, aerial drones can quickly acquire and perform tasks over large areas, while ground drones have exceptional up-close inspection, payload capability and endurance. Drone service providers must keep this in mind when determining, with their customer, the right platform with the right detection for a specific application.

Drones promise many new applications in energy, aviation, law enforcement, transportation, security, logging, mines, security, agriculture and emergency response. Drones allow increased efficiency and capacity for many safety and environmental applications and should be a recognized part of the safety managers tool kit for minimizing risk and liability.

DRONE APPLICATIONS

Energy - Flare stack inspection; in-service, pipe flare, utility flare, multi-flares, variable slot flares, gas assisted multi-flares

Energy - Pipeline inspection

Energy - Offshore structure decommissioning

Energy - Power cable and insulator inspection

Energy - Wind tower and blade inspection

Construction – project management and inspection

Infrastructure – Highway, dam and bridge inspection

Transportation - Railway track bed and power line inspection

Industrial – site inspection, emergency response, geo-fence security and perimeter surveillance, and small item transport

Logging – forest status, log flow, and illegal logging

Photography – marketing, advertising, movies

Sensors; ground penetrating radar, chemical and biological agents, near and far infrared, thermal, ultraviolet, high resolution visual, LIDAR, radioactivity, volatile compounds

Emergency response – Wilderness search and rescue

Emergency response – Wildland fire behavior and fight planning

Emergency response – urban search and rescue

Emergency response – disaster site monitoring and mapping

Emergency response - Hazardous material spill response management

Law Enforcement - Crime scene surveillance, recording, and situational awareness

Law Enforcement; - crowd surveillance and situational awareness, border surveillance, critical infrastructure surveillance,

Law Enforcement - illegal activity control; anti-looting, anti-terrorist, drug cultivation/trafficking, hazardous material dumping or burning, ship bilge venting,

Ice flow and iceberg tracking and monitoring

Migratory mapping

Agriculture – canopy profiling, crop status and counting, weed detection, CH4 and CO2 sensing, and 3D terrain mapping

Geospatial; google earth, global mapper, quantumGIS, ERDAS Imaging, and ArcGIS

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