

UAVs Give IBM Watson IoT Platform a Bird's-eye View



IBM and Aerialtronics, a Netherlands-based designer and producer of unmanned aircraft systems, have announced the first commercial UAVs featuring cognitive computing capabilities from the [IBM Watson Internet of Things \(IoT\) Platform](#) on IBM Cloud. Aerialtronics vehicles can provide high-quality inspection services for global organisations across multiple industries, from monitoring city traffic patterns to inspecting wind turbines, oil rigs and cell tower optimisation.

Now, rather than climbing towers, inspecting key areas and reporting back findings, teams can deploy Aerialtronics UAVs from the ground and, through high-definition cameras and Watson Visual Recognition APIs, immediately gain a complete 360-degree, high-resolution overview while understanding what it's seeing. UAVs can capture these important images

in minutes and immediately send them to the IBM Watson IoT Platform to be analysed in near real time.

Image analyses

Aerialtronics' commercial UAVs are the first to leverage the IBM Watson IoT Platform and the Visual Recognition APIs to analyse images and identify specific areas of concern such as loose or frayed cabling and damaged equipment that could impact the quality of telecommunications service to consumers. Constantly learning over time, IBM Watson IoT solutions provide a confidence rating to teams so they can determine if and when repairs should be made. As a result, businesses have the potential to significantly increase the number of daily cell tower inspections, reduce possible human error and help maintain the safety of workers.

Pairing the unlimited perspective of UAVs with Watson IoT can bring these powerful cognitive capabilities to any location, where it can be used to analyse unexpected traffic patterns resulting from nearby construction or how a train is performing while it's in transit, said Harriet Green, general manager, IBM Watson Internet of Things, Commerce & Education.

Applications

By putting Watson IoT capabilities into flight, Aerialtronics can help companies open up a number of possibilities to gain insight in places not easily accessible to humans. Possible scenarios include:

- **Crowd Safety:** City Law enforcement could gain a full aerial view of crowds at major events, tracking the flow of individuals and identifying any anomalies that might be cause for concern. For example, if an unusually large group of people gathers near an emergency exit, teams can be alerted to clear these areas for easy accessibility.
- **Damage Assessment:** Emergency First Responders could prescribe a specific flight plan for UAVs, which can then take capture images of their assigned grid. These images could then be analysed to access potential damage, dangers, and to drive immediate and appropriate emergency response.
- **Aviation Inspection:** An aircraft manufacturer could use a UAV to inspect the surface of a stationary aircraft as part of its regular maintenance and instance evaluation. The UAV could also be programmed to follow the same flight plan of an aircraft, taking images on the fuselage in-flight to provide an even more valuable layer of insight that teams could examine to help identify potential areas of concern and prescribe immediate and appropriate action.

Over time, Aerialtronics' Altura Zenith multirotor will be used to examine other aspects of cell tower performance. Firstly, it will ensure that new towers have a clear line of sight with existing structures and antennas are properly positioned to ensure that customer calls are not dropped as people move from one tower to the next. UAVs can also be used to measure the cell size and radio strength in 3D to determine the full range of each tower and which structure should service which location.