



Unmanned Aircraft Systems (UAS) or “Drones” and their Relationship to Electric, Gas and Water Utilities

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SUMMARY

Electric, gas, and water utilities are increasingly interested in taking advantage of the capabilities of unmanned aircraft systems (UAS), also known as “drones,” to support their operations. Some are using UAS for Visual Line-of-Sight (VLOS) applications, such as to provide aerial views of a substation. Others are actively investigating the use of UAS to inspect transmission towers and power lines as an alternative to costly and potentially more dangerous helicopter deployment. Many utilities use the capabilities of the UAS in connection with, and as a supplement to, existing inspection operations performed by line crews. UAS are also uniquely suited to assess the damage to utility infrastructure in the aftermath of natural disasters.

For utilities to take full advantage of the promise UAS can offer, they need to be able to operate UAS beyond VLOS (BVLOS). Securing authority to operate BVLOS is a critical piece for utilities. In that context, the Utilities Technology Council (UTC) supports utility efforts to gain access to dedicated licensed spectrum to facilitate the safe, reliable and effective use of UAS for utility operations. The radio portion of the electromagnetic spectrum is needed to enable wireless applications such as those used to operate UAS. This radio spectrum is subdivided into various “bands” (measured by “hertz”) that have different properties.

UTC is working with utilities and industry organizations to support utility applications for UAS and to influence the regulatory and legislative landscape so that this technology can enhance utility operations and, in turn, the utility customers' experience.

BACKGROUND

On August 29, 2016, the Federal Aviation Administration (FAA) adopted rules under Part 107 for small (*i.e.* under 55 lbs/25 kg) VLOS UAS operations. These rules were put into place as a result of language included in the “Federal Aviation Administration Reauthorization Act of 2016” signed into law on March 9, 2016. These rules restrict operations, such that: they must stay within VLOS of an operator; stay under an altitude of 400 feet; and, avoid flights over people who are not a part of the UAS operation.

It is possible to apply for a waiver from these restrictions. For example, some utilities have applied for waivers to permit them to operate UAS for BVLOS applications. A small number of UTC members have already conducted BVLOS flights in one of the six test sites designated by the FAA. Several utilities have conducted successful flights under VLOS conditions. The data collected from these flights is then incorporated into the utilities' geographic information system (GIS) to facilitate analysis. By incorporating several departments in the analysis of the data, utilities are looking to create synergies and enhance the effectiveness of their operations.

UTC POSITION

UTC is working with utilities and industry stakeholders to promote reliable communications for UAS. This will likely require making available licensed spectrum for use by UAS for command and control functionality. In addition, licensed or unlicensed spectrum may need to be made available for video applications. UTC looks forward to working with the FAA and other agencies on this important

effort. UTC is also reviewing, in cooperation with other industry associations, what spectrum band or bands would be the most suitable for utility drone operations, especially for BVLOS operations. UTC is concerned about possible interference to drones that communicate solely using unlicensed spectrum, and it is exploring the opportunities that may exist to access licensed spectrum as a supplement to or as an alternative to the use of unlicensed spectrum. This could also extend the range for communications with drones, which, in turn, could facilitate utility service restoration over a wide area in the aftermath of a hurricane, storm or other natural disaster.

ABOUT UTC

The Utilities Technology Council (UTC) is a global trade association dedicated to serving critical infrastructure providers. Through advocacy, education and collaboration, UTC creates a favorable business, regulatory and technological environment for companies that own, manage or provide critical telecommunications systems in support of their core business.

History: UTC was founded in 1948, to advocate for the allocation of additional radio spectrum for power utilities. Over the last 68 years, UTC has evolved into a dynamic organization that represents electric, gas and water utilities, as well as natural gas pipelines, critical infrastructure companies and other industry stakeholders.

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