



PUBLIC NOTICE

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**OFFICE OF ENGINEERING AND TECHNOLOGY SEEKS COMMENT ON LEICA
GEOSYSTEMS AG'S REQUEST FOR WAIVER OF SECTION 15.255 OF THE RULES TO
OPERATE RADARS ON A COMMERCIAL UNMANNED AERIAL VEHICLE (UAV)**

ET Docket No. 19-350

Comment Date: [30 days after release]

Reply Comment Date: [15 days after comment date]

On September 5, 2019, Leica Geosystems AG (Leica) filed a request for waiver of Section 15.255 of the Commission's rules¹ to allow the operation of its "Ictos" radar system installed on commercial unmanned vehicles (UAV), i.e., flying drones.² The Ictos system is composed of multiple radar modules operating in the 60-64 GHz frequency band that will be used for hazard detection while in flight, which it claims will permit a UAV to acquire close-up views of structural exteriors that would otherwise be difficult to safely obtain.³ The Commission's Office of Engineering and Technology (OET) seeks comment on this request.

Leica states that the collision between a UAV and a structure that it is scanning risks damage to the UAV and to the structure, as well as injury to persons on the ground; therefore, Leica argues that the prevention of such collisions and their associated harms to both buildings and people by use of the Ictos system is in the public interest.⁴ Leica states that use of the 60 GHz band to provide full 360-degree spherical obstacle detection provides the necessary bandwidth to identify potential hazards to flight safety, such as cables and ropes, that can be as small as 2.5 millimeters. Leica further states that the design of the Ictos radar system along with their proposed waiver conditions would not cause harmful interference to other radio services.⁵

Leica requests a waiver of the on-board aircraft prohibition on UAVs in Section 15.255(b)(2) of the Commission's rules.⁶ This section requires that, when operated on-board aircraft, airborne operation

¹ 47 C.F.R. § 15.255.

² Waiver Request of Leica Geosystems AG (*Request*), filed Sep. 5, 2019.

³ *Id.* at 2-3 (explaining how Ictos-equipped UAVs could be used to visually capture of the outside of structures such as bridges and buildings to provide safety inspections, assess structural integrity after accidents or natural disasters, take measurements for planned construction or installations, or perform similar tasks).

⁴ *Id.* at 13.

⁵ *Id.* at 12. The proposed conditions include limits on duty cycle and out-of-band emissions, restriction to operation of the radar only while in-flight not while hovering, and a limitation on U.S. sales to no more than 800 UAVs per year over five years.

⁶ 47 C.F.R. § 15.255(b)(2).

for 60 GHz transmitters must be part of a closed exclusive on-board communications network within an aircraft that provides substantial radio frequency (RF) attenuation, in order to protect passive services such as EESS and RAS from harmful interference. Further, sub-section 15.255(b)(2)(ii) prohibits on-board aircraft operation of 60 GHz transmitters on UAVs.

Leica also argues that the Ictos system is not a field disturbance sensor (FDS) as defined in the rules.⁷ This is relevant because Section 15.255(a)(2) of the rules prohibits mobile FDS operation unless being used under a limited exception for short-range interactive motion sensing,⁸ and Section 15.255(c)(3) limits power of an FDS to -10 dBm peak conducted and +10 dBm peak equivalent isotropically radiated power (EIRP).⁹ Operation of the Ictos system as an FDS would appear to be inconsistent with these rules. Accordingly, Leica seeks a determination that the Ictos system is not an FDS, but if the Commission determines that it is, asks that that we also waive Sections 15.255(a)(2) and (c)(3) of the rules.¹⁰

OET seeks comment on the waiver request. OET has concluded that, in order to develop a complete record on the issues presented by this request, this proceeding will be treated, for *ex parte* purposes, as "permit-but-disclose" in accordance with Section 1.1200(a) of the Commission's rules, subject to the requirements under Section 1.1206(b).

Pursuant to sections 1.415 and 1.419 of the Commission's rules, 47 CFR §§ 1.415, 1.419, interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS). *See Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121 (1998).

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: <http://apps.fcc.gov/ecfs/>.
- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number.

Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

- All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th St., SW, Room TW-A325, Washington, DC 20554. The filing hours are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes and boxes must be disposed of before entering the building.
- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9050 Junction Drive, Annapolis Junction, MD 20701.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554.

⁷ 47 C.F.R. § 15.3(l); *Request* at 5-8.

⁸ 47 C.F.R. § 15.255(a)(2).

⁹ 47 C.F.R. § 15.255(c)(3). The Ictos system transmits at 0 dBm average EIRP and +18.7 dBm peak EIRP.

¹⁰ *Request* at 8 and 11-12.

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Parties should also send a copy of their filings to Anh T. Wride, Office of Engineering and Technology, Federal Communications Commission, Room 7-A363, 445 12th Street, S.W., Washington, D.C. 20554, or by e-mail to anh.wride@fcc.gov.

Documents are available for public inspection and copying during business hours at the FCC Reference Information Center, Portals II, 445 12th Street, S.W., Room CY-A257, Washington, D.C. 20554.

By the Chief, Office of Engineering and Technology

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