

STA Application Exhibit

By this application, T-Mobile License, LLC seeks special temporary authorization (“STA”) so that its affiliate, T-Mobile, USA, Inc. (“T-Mobile”), may experiment by using Advanced Wireless Service 3 (“AWS-3”) spectrum on unmanned aircraft systems (“UAS”) for a period of six months from the date of grant. As described further below, the STA will permit T-Mobile to assess the feasibility of using these UAS devices as “flying COWs” (“Cells on Wings”) to restore or provide wireless services where terrestrial cell sites may not be feasible or available. Experimental authorization is required because T-Mobile is not the licensee of the spectrum it proposes to use.

As noted above, T-Mobile seeks temporary authority to operate AWS-3 spectrum on UAS devices to assess their ability to communicate with mobile handsets located at ground level within 10 km of the UAS. These systems have been utilized by other carriers, including in post-disaster environments when physical infrastructure has been damaged. For example, press reports indicate that [AT&T to utilized a flying COW in Puerto Rico](#) following Hurricane Maria, and [Verizon is testing a similar device](#) as well. T-Mobile expects that this testing will enable it, like other carriers, to utilize flying COWs in situations in which additional network capacity is needed.

T-Mobile will fly the UAS at up to 400 feet above ground level (“AGL”), but it will be attached by a tether to T-Mobile-operated buildings; the tether will keep the UAS in place directly at the coordinates provided and will also supply power to the UAS and the base station. While the UAS is not directly attached to the ground or building, because it will be connected to the ground via tether, T-Mobile has represented it as a fixed site for purposes of this application.

Spectrum Requested:

T-Mobile requests use of the AWS-3 G-Block (1755-1760 MHz / 2155-2160 MHz) in the Bellevue, WA area. This spectrum is currently licensed to SNR Wireless LicenseCo, LLC under the call sign WQWQ994. Although this spectrum is licensed, service has not yet been deployed using it. Therefore, operation will not cause harmful interference to any Commission licensed station.

The Commission has already authorized T-Mobile to use this spectrum on an experimental basis (call sign WN9XAW, file no. 1269-EX-ST-2018, effective September 1, 2018-March 1, 2019) and that authorization remains in effect. The current STA covers T-Mobile’s use of the precise spectrum for which T-Mobile seeks authorization in this application -- at the precise locations specified in this application. T-Mobile is now simply requesting a new STA only for the purpose of using the spectrum under parameters not covered by its existing STA – in particular at up to 400 ft in the air.

Nature of UAS Operations:

T-Mobile will operate the UAS in full compliance with all applicable Federal Aviation Administration (“FAA”) regulations. Under the FAA’s Part 107 rules governing UAS operations, the device will remain below 400ft AGL and outside the vicinity of any airport, heliport, or seaplane base. Because operations in compliance with these rules do not, according to the FAA, constitute a hazard to manned aircraft, T-Mobile has not completed the fields in the application form related to aircraft hazards.

Time Requested:

T-Mobile plans to begin testing the flying COW immediately – in preparation for, among other things, the ongoing hurricane season. It will begin tests upon Commission grant of authorization and expects to continue testing for a period of 6 months.

Non-interference Condition:

T-Mobile is a licensee of AWS-3 spectrum and is familiar with the use of the band. T-Mobile also acknowledges its obligation under an experimental STA to not cause harmful interference to, and accept harmful interference from, any station operating in accordance with the Table of Frequency Allocations of part 2 of the Commission’s rules (47 CFR § 2.106).

Federal Users:

T-Mobile acknowledges that the requested frequency band had previously been allocated for federal government use and that under the transition plan adopted to provide for non-federal use, some federal stations may still be operating in the band. T-Mobile does not believe that any federal operations will be affected by operation of this STA. However, T-Mobile will abide by any requirements the Commission may impose regarding federal stations. In addition, T-Mobile has designated the following stop buzzer point of contact in the unlikely event that harmful interference were to occur.

Stop Buzzer Point of Contact:

Chris Wieczorek
Director, Spectrum Policy
202-654-5913