

Explanation of Amendment

This amendment seeks to add three new sites to the Microsoft experimental license currently being used to develop and test Microsoft's FarmBeats Internet-of-things ("IoT") platform. As explained in Microsoft's original experimental license application, FarmBeats uses the advantageous propagation characteristics of TV White Spaces spectrum to connect IoT devices in agricultural and other rural-industry settings, allowing these rural industries to increase efficiency and overall productivity. Additional information regarding the use of White Spaces to increase productivity while reducing costs is available at Microsoft Research, Research Areas, FarmBeats: AI, Edge & IoT for Agriculture, <https://www.microsoft.com/en-us/research/project/farmbeats-iot-agriculture/>.

Consistent with the experimental objectives and methods detailed in Microsoft's original application,¹ these three new sites will allow Microsoft and its partners to test new capabilities of the FarmBeats platform and sensor systems as described below.

Beltsville, MD — Working with the USDA, the experimental authorization will allow Microsoft to evaluate the use of FarmBeats sensors and cloud-based AI systems to monitor and model the growth of cover crops used in agriculture. As noted on the application, operations at this location will be conducted at a reduced power level (40 mW EIRP) due to the less rural setting.

Aurora, NY — Microsoft, in collaboration with the Cornell Agriculture Department, will conduct experiments using FarmBeats technology to study the propagation of different crop phenotypes through a research farm.

Camano Island, WA — Microsoft will conduct an experiment using the FarmBeats system to monitor and study sharply declining salmon populations. In addition to improved understanding of this particular fishery, this experiment will allow Microsoft to evaluate the feasibility of using FarmBeats in an aquatic setting.

In each case, existing test locations would not be suitable for the proposed experimental operations. The new proposed experiments are parts of ongoing research projects already being conducted by researchers at different sites. In addition, the existing authorization does not cover aquatic sites suitable for tests such as those proposed to be conducted at the Camano Island site.

In addition to these new locations, the amended application would remove the Woodland, CA location and seek to add an additional 15 devices to support experiments at a larger number of locations.

¹ Microsoft Corporation, Experimental Licensing System File No. 0046-EX-CM-2019, https://apps.fcc.gov/oetcf/els/reports/442_Print.cfm?mode=initial&application_seq=90486&license_seq=91460.