

From: William Smith

To: Behnam Ghaffari

Date: July 29, 2020

Subject: FCC File No. 0910-EX-ST-2020

Message:

Hello Behnam Ghaffari,

This is in response to your 6/30 email (correspondence reference number 56027) concerning the University of Kentucky license application (file number 0910-EX-ST-2020). In that email, I was asked to address three items. Below are the responses, which will be supplemented with attachments to the application uploaded to the OET website.

1. Incorrect Iridium frequencies. The Iridium frequency band has been corrected in the application.
2. A companion Iridium license was requested. One of the documents attached to this application is my email correspondence with Mr. Joseph Godles, who is an outside FCC counsel to Iridium. After a series of emails and descriptions of our project, Mr. Godles expressed that he thinks our project/capsules should be covered by "Iridium's blanket mobile earth station license" for the altitudes we will be transmitting. That is from our most recent email contact (7/24). Please read the email thread (document titled "KREPE FCC Iridium companion license correspondence") and let me know if I need to continue to pursue the companion license with him. The email thread should be read from the bottom up. Note that the "attached document" referred to in the 7/9 email is the "KREPE FCC technical document" which was previously attached to our application.
3. Iridium transmit times and RF transmit inhibits in the event of a malfunction. A new attachment has been uploaded to the application – KREPE FCC Radio inhibits. Here is an outline of that document:

- KREPE mission functional description with a block diagram of the flight computer that controls the Iridium transmission.

- Description of Iridium RF transmit inhibits and mitigation of abnormal operation, including:

- o The initial unpowered state
 - o RF shield
 - o Power anomaly protection, software anomaly protection, Iridium modem transmitter control.
- Mitigation of anomalies in these cases results in power being removed from the Iridium modem, preventing unwanted RF transmissions.
- o Limited battery capacity.

I will be glad to answer any further questions you may have. Thank you for your assistance in processing the application.

Regards – Bill Smith