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Paul Blais  
International Bureau  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW, Room CY-A257  
Washington, D.C. 20554

Re: SES-MOD-20170425-00465

Dear Mr. Blais,

This letter is submitted in response to the Satellite Division's request for supplemental information on SES-MOD-20170425-00465 regarding human exposure to radiation hazards.

Exhibit C of the application provided a Radiation Hazard Analysis. Herewith, Inmarsat provides further information regarding antenna use and means to avoid human exposure to radiation hazards.

The Swarm45 antenna will be used only by trained operators and is not intended for use by the general public. The terminal is cost prohibitive for purchase by the general public. Moreover, although the terminal is quick to assemble, the operator needs to be trained. The manufacturer's User Manual is very explicit in providing warnings regarding potential for radiation hazard. It warns the user not to power on the device until it is safe to do so; to always remove power from the device when performing any maintenance; that the equipment should not be touched during operation and installation is intended in restricted access locations. Further the manual outlines that during transmission, personnel should not be allowed to pass into the transmission path of the antenna. From an operational perspective, given the transportability of the terminal, it is not a terminal that would be left unattended, such that the trained operator will be with the antenna at all times; but if the antenna is left unattended at any time during transmission, the User Manual makes clear that a safety cordon should be erected preventing access to the area within the transmission path of the antenna. The User Manual also explains that for safe operation the terminal should be located on a stable surface before transmission (using an associated tripod if necessary on uneven ground) and warns the operator not to attempt to

operate the terminal on an unstable surface or when in motion.

As a visual aid the radiating face of the terminal has a radiation hazard label as shown below:



As described above the manual includes written warnings which outline how to operate the terminal safely and these same warnings are embedded in the Swarm45 graphical user interface which the operator uses to control/manage the terminal. The terminal cannot be operated while in a backpack.

As described in Exhibit C, the terminal is designed to cease transmitting if the receive signal from the satellite is blocked, which could be caused by a person standing in front of the terminal or from other blockage. If the receive signal is blocked, the transmitter is shut down and will not resume operating until the signal from the satellite is reacquired. In fact there is a double shut down protection in the event that someone or something obstructs the RF path to the satellite. Not only does the terminal automatically turn off its Transmit capability if it loses the satellite Receive signal, i.e. the transmission path is compromised, but the radio frequency amplifier is additionally muted via its monitor and control so that no radio frequency can be transmitted.

Respectfully submitted,

*/s/ Giselle Creeser*

Giselle Creeser  
Director, Regulatory