Dear Mr Haire

With reference to IDA's letter soliciting comments on the use of UWB. CAAS advises further consultation and discussion with IDA on the usage of such devices in particular Type 3 devices. Following are comments in response to IDA's questions.

Question 1 on the proposal to allow UWB devices for other radio communication devices

CAAS recommends that such cross usage of these frequency bands be avoided in fixed-satellite, fixed services and radio navigation as these will have dire consequences on aviation operations.

Question 2 on the possible scenarios of harmful interference from UWB devices to other licensed band and possible measures to reduce the risk of interference

As UWB devices have not been tested for their compatibility with aeronautical facilities like radio navigational aids and radars which are precision systems, it is not possible to provide a detailed analysis on the potential impacts to our facilities.

Question 3 on the adoption of license exemption approach for UWB consumer and business data communication systems (Type 1 devices)

A license exemption approach for UWB consumer Type 1 devices should not be adopted due to its broad frequency operation. As the operating frequencies fall within the band used for radio navigational aids and radars, compatibility tests and where possible compatibility certification will be required as well.

Question 4 on the proposal to allow unlicensed UWB devices implemented with mitigation techniques to operate at higher peak emission level within the 3400 to 4800 MHz compared to generic UWB devices without mitigation techniques.

An unlicensed approach is not prudent. Usage of such devices will still need to be controlled in order to limit its operating range and use. Compatibility tests and where possible compatibility certification will be required.

Question 5 on the proposal to adopt licence-exemption approach for UWB vehicular radar devices (Type 2)

The use of such devices must ensure that there are no compatibility and interference issues for general usage prior to the safe operation of such devices.

Question 6 on the proposal to licence on a case by case basis the use of Type 3: Imaging Systems:

The licensing of type 3 imaging systems is required for its use. This is to mitigate any potential for interfering with frequencies operating below the 960 MHz or in the 3400 to 106000 MHz band.

Question 7 on whether licensing conditions for Type 3 devices are required as further safeguards to existing users in frequency bands below the 960 MHz or in the 3400 to 106000 MHz band.

Further licensing conditions are required to safeguard existing users. Until such time it is proven that there is no compatibility and interference issues, conditions must be imposed to control its use.

Question 8 on the proposed licensing fee structure for UWB devices.

The licensing fee structure of Type 3 devices should reflect its usage and should have an independent fee structure to ensure the safe and responsible use of such devices due to its potential to cause interference during handling.

VICTOR LEE For DIRECTOR GENERAL CIVIL AVIATION AUTHORITY OF SINGAPORE