

**RADIO SPECTRUM AND TECHNICAL STANDARDS
ADVISORY COMMITTEE**

**Proposed Allocation of the 137 – 138 MHz and 148 – 150.05 MHz Bands
to Mobile-Satellite Service**

Introduction

This paper seeks Members' views on the proposed allocations of the 137 – 138 MHz and 148 – 150.05 MHz bands to mobile-satellite services ("MSS"), on top of the existing allocations, with details in **Annex**.

Background

2. According to the Radio Regulations of the International Telecommunication Union ("ITU"), in Region 3¹, the 137 – 138 MHz band is allocated to, among other services, meteorological-satellite (space-to-Earth) service ("MetSat") on a primary² basis, as well as MSS (space-to-Earth) in the 137 – 137.025 MHz and 137.175 – 137.825 MHz bands on a primary basis, and the 137.025 – 137.175 MHz and 137.825 – 138 MHz bands on a secondary² basis. The 148 – 150.05 MHz band is allocated to MSS (Earth-to-space), with the 148 – 149.9 MHz band also allocated to fixed and mobile services, all on a co-primary basis. In Hong Kong, the 137 – 138 MHz band is currently allocated to MetSat only. As for the 148 – 150.05 MHz band, the 148 – 149.9 MHz sub-band is allocated to and being used for land mobile service whereas the 149.9 – 150.05 MHz sub-band is unplanned, i.e. it is not allocated to any service and cannot be assigned for use by any user before an allocation is made. More information on frequency allocations is given in the Hong Kong Table of Frequency Allocations³.

¹ ITU divides the world into Region 1, Region 2 and Region 3 for the purpose of radio spectrum management. Hong Kong situates in Region 3.

² Radio stations of a secondary service shall neither cause harmful interference to radio stations of primary services to which frequencies are already assigned or to which frequencies may be assigned at a later date, nor claim protection from harmful interference from radio stations of a primary service to which frequencies are already assigned or may be assigned at a later date.

³ The Hong Kong Table of Frequency Allocations can be downloaded from the following hyperlink:
https://www.ofca.gov.hk/filemanager/ofca/common/Industry/broadcasting/hk_freq_table_en.pdf

3. The Office of the Communications Authority (“OFCA”) has lately received an application for provision of MSS in Hong Kong employing the Orbcomm satellite network (“Orbcomm”)⁴, which currently operates more than 30 low earth orbit satellites in the 137 – 138 MHz band for downlinks and the 148 – 150.05 MHz band for uplinks. As the 137 – 138 MHz and 148 – 150.05 MHz bands are not allocated to MSS in Hong Kong, before such use might be allowed in Hong Kong, there is a need to effect the additional allocations as detailed in **Annex**.

Proposed Frequency Allocation

4. The proposed allocations of the 137 – 138 MHz and 148 – 150.05 MHz bands to MSS with details in **Annex** is in compliance with the ITU frequency allocation.

5. Orbcomm has successfully completed the required ITU satellite network coordination for co-existence with MetSat sharing the 137 – 138 MHz band (downlink), and other MSS networks sharing the 137 – 138 MHz band (downlink) and 148 – 150.05 MHz band (uplink). Orbcomm employs a specialised system for dynamic assignment of uplink channels to subscriber mobile earth stations to facilitate their co-existence with other land mobile systems sharing the 148 – 149.9 MHz band save the need for conventional frequency coordination. While Orbcomm has been in operation globally for some 20 years, there is no known report of harmful interference to land mobile systems sharing the same band. Nevertheless, OFCA will ensure electromagnetic compatibility of the stations of legitimate services and the proposed earth stations of Orbcomm in Hong Kong during their applications for licence and frequency assignment on a case-by-case basis. Having duly considered the electromagnetic compatibility among MSS and the relevant existing services, and their compliance with the ITU frequency allocations, it is recommended that the 137 – 138 MHz and 148 – 150.05 MHz bands be allocated to MSS, on top of the existing allocations, as summarised in **Annex**.

⁴ Orbcomm is based in the United States and is designed to provide narrowband low-speed machine-to-machine data communications.

Advice Sought

6. Members are invited to offer comments on the proposed allocations as detailed in **Annex**. OFCA will take into account Members' comments and make a recommendation to the Communications Authority for the aforesaid frequency allocations to take effect.

Office of the Communications Authority
January 2020

**Existing and Proposed Allocation of
the 137 – 138 MHz and 148 – 150.05 MHz Bands**

EXISTING	PROPOSED
137-138 MHz METEOROLOGICAL-SATELLITE (space-to-Earth)	137-137.025 MHz METEOROLOGICAL-SATELLITE (space-to-Earth) <u>MOBILE-SATELLITE (space-to-Earth)</u>
	137.025-137.175 MHz METEOROLOGICAL-SATELLITE (space-to-Earth) <u>Mobile-satellite (space-to-Earth)</u>
	137.175-137.825 MHz METEOROLOGICAL-SATELLITE (space-to-Earth) <u>MOBILE-SATELLITE (space-to-Earth)</u>
	137.825-138 MHz METEOROLOGICAL-SATELLITE (space-to-Earth) <u>Mobile-satellite (space-to-Earth)</u>
148-149.9 MHz LAND MOBILE	148-149.9 MHz LAND MOBILE <u>MOBILE-SATELLITE (Earth-to-space)</u>
149.9-150.05 MHz TO BE PLANNED	149.9-150.05 MHz <u>MOBILE-SATELLITE (Earth-to-space)</u>
Note: Services in “capitals” : primary services Services in “normal characters” : secondary services	