

Use of Spectrum in the 1.4 GHz Band in Support of the Development of Low-altitude Economy



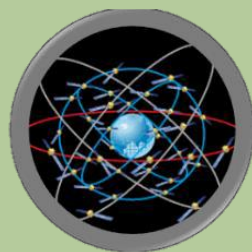
Telecommunications Regulatory Affairs Advisory Committee
21 August 2025



Low-altitude Economy (“LAE”)

- **2024 Chief Executive Policy Address:** To develop **LAE in Hong Kong**
- **Working Group on Developing LAE (“Working Group”):**
An **inter-departmental** Working Group, led by the Deputy Financial Secretary, was set up to facilitate LAE development and planning for low-altitude infrastructure etc.

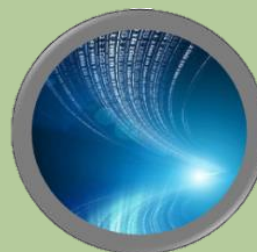
Low-altitude Infrastructural Facilities



Global Navigation
Satellite System



Mobile Radio
Network



High-speed
Data
Transmission



Vertiport and
Charging
Facilities

LAE – The Next Growth Engine

Oyster Farming

- ✓ Supporting Intangible Cultural Heritage Industry
- ✓ Environmental Protection
- ✓ Promoting HK Stories

Building Inspection

- ✓ Improved Safety
- ✓ Cost & Time Efficiency
- ✓ High-Quality Imaging & Data Accuracy

Food Delivery

- ✓ Speed & Efficiency
- ✓ Reduced Costs
- ✓ Expanded Accessibility

Drone Show

- ✓ Boosting Tourism & Hospitality

Boosting Economic Growth



Ways of Communications for Unmanned Aircraft Systems (“UAS”)

- **Functions:** Remote control, telemetry (e.g., location, altitude, speed, battery status), and payload transmission (e.g. video streaming, survey data)
- **Growing trend:** Deployment of **specific frequency channels** in addition to Wi-Fi bands and 4G/5G networks
- **Benefits of designated frequency channels:**
 - ✓ Provide additional exclusive frequency channels to ensure smooth operation of UAS
 - ✓ Avoid interference with other radiocommunications equipment



Channel	Wi-Fi Bands	4G/5G Network	Specific Frequency Channels
Flying Area	Localised	Territory-wide	Localised
Licensing Requirement for Frequency Channels	Licence-exempted (Wi-Fi bands)	Licensed (4G/5G frequency channels)	Licensed (Designated frequency channels)
Usage	Non-exclusive		Private and Exclusive

Mainland's Allocation of the 1.4 GHz Band

- In December 2023, the Ministry of Industry and Information Technology published a document entitled **《民用無人駕駛航空器無線電管理暫行辦法》**[^] (“Interim Arrangement”) with effect from 1 January 2024
- Under the Interim Arrangement, the 1430 – 1444 MHz (“1.4 GHz”) band is designated for use by UAS in the Mainland

[^] https://www.srrc.org.cn/kindeditor/attached/file/20231228/20231228091822_5909.pdf

民用无人驾驶航空器无线电管理暂行办法

第一章 总则

第一条 为了加强民用无人驾驶航空器无线电管理工作，维护空中电波秩序，保证各种无线电业务的正常进行，促进民用无人驾驶航空器产业高质量发展，依据《中华人民共和国无线电管理条例》《无人驾驶航空器飞行管理暂行条例》《中华人民共和国无线电管制规定》等相关法规，以及有关无线电管理部门规章，制定本办法。

第二条 本办法所称民用无人驾驶航空器，是指没有机载驾驶员、自备动力系统的民用航空器。

本办法所称微型民用无人驾驶航空器，是指空机重量小于0.25千克，最大飞行真高不超过50米，最大平飞速度不超过40千米/小时，无线电发射设备符合微功率短距离技术要求，全程可以随时人工介入操控的民用无人驾驶航空器。

本办法所称民用无人驾驶航空器通信系统，是指民用无人驾驶航空器以及实现与其有关的遥控、遥测、信息传输功

能的地面站及空中通信系统

Additional Allocation in Hong Kong

- The 1.4 GHz Band was previously allocated to fixed service only and assigned for fixed links
- The additional allocation of mobile service in the 1.4 GHz band for use by UAS in Hong Kong is **in compliance with** the Radio Regulations published by the ITU

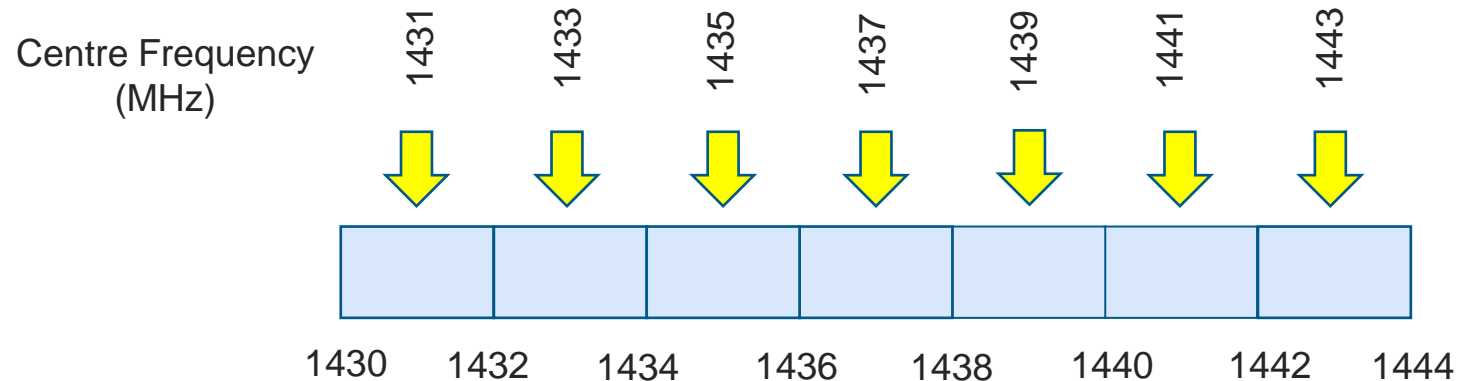
Region 3 and Hong Kong Allocation of the 1430 – 1444 MHz Band

Radio Regulations Region 3 Allocation	Hong Kong Allocation	
	Previous	New
1430 - 1444 MHz FIXED MOBILE	1430 - 1444 MHz FIXED	1430 - 1444 MHz FIXED <u>MOBILE</u>

Note: Service in capital letters denotes primary service

Channel Arrangement

- With reference to the Interim Arrangement, the 1.4 GHz band will be divided into **seven channels**, each with **a bandwidth of 2 MHz** for use by assignees on a **reusable, non-exclusive, geographically sharing** and **first-come-first served** basis
- To ensure equipment availability and spectrum compatibility for supporting LAE applications using UAS, Hong Kong **adopts the same channel plan as that of the Mainland** in the 1.4 GHz band



Channel Bandwidth	Centre Frequency (MHz)
2 MHz	$1429 + 2n$ where $n = 1, 2, 3, \dots 7$

LAE Regulatory Sandbox Pilot Projects



- In March 2025, the Government announced the first batch of LAE Regulatory Sandbox pilot projects (“LAE Projects”)
- Covering a wide range of fields and application scenarios, including emergency and rescue, logistics and distribution, inspection and safety maintenance, surveillance and low-altitude infrastructure

Emergency and
Rescue



Logistics and Distribution



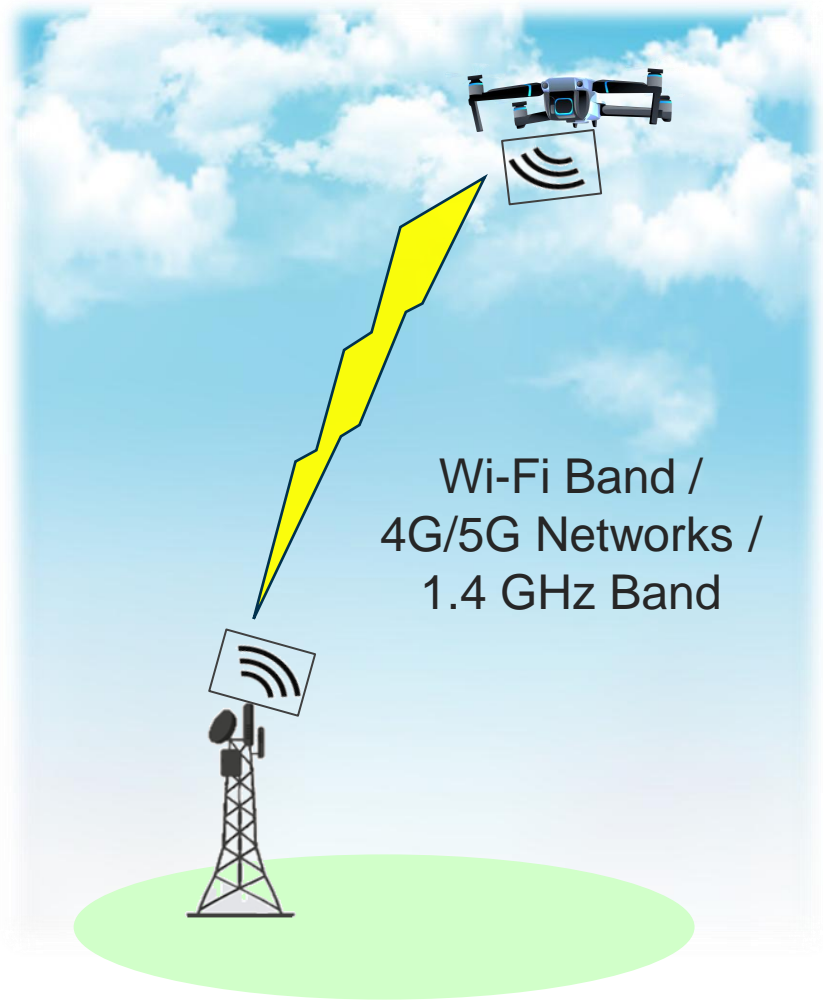
Infrastructure Inspection and
Safety Maintenance



Surveillance



Use of the 1.4 GHz Band in Hong Kong



- The 1.4 GHz band was vacated and additional allocation mobile service in the 1.4 GHz band **came into effect** in June 2025
- The 1.4 GHz band will be served as a **complementary radiocommunications means** in addition to Wi-Fi bands and 4G/5G networks for UAS
- A global leading manufacturer of **commercial UAS** announced that a new UAS model supporting the 1.4 GHz band was developed

Use Case: Modernising Oyster Farming

Deep Bay

- ❖ Large-scale oyster farming
- ❖ Intangible cultural heritage
 - Using raft culture method to breed and raise oysters



LAE Project

- ❖ Drone delivery service for oyster farming
 - Modernising this traditional industry
 - Enhancing management efficiency
 - Supporting environmental conservation



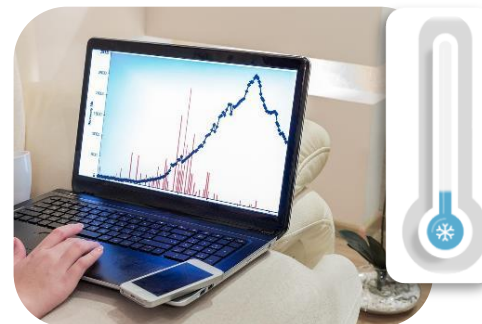
Use Case : Medical Delivery Service



Cheung Chau Hospital



North Lamma Clinic



LAE Project

- ❖ Medical delivery service from urban area (i.e. Cyberport) to outlying islands (i.e. Cheung Chau and Lamma Island)
- ❖ To overcome the existing maritime transportation limitations and provide fast logistics services for residents and businesses on outlying islands:

- **Cyberport to Cheung Chau**
 - Maritime: ~ 68 mins
 - UAS: ~ 22 mins*
- **Cyberport to Lamma Island**
 - Maritime: ~ 39 mins
 - UAS: ~ 11 mins*

* Including the time for take-off and landing of UAS



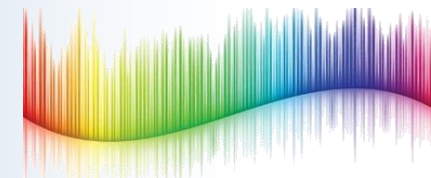
A LAE-enabling Regulatory Environment



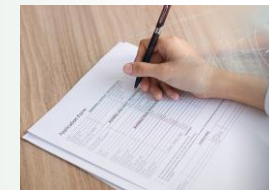
Participation in the Working Group on Developing LAE



Allocation of Dedicated Spectrum for LAE



Creation of a New Licence for LAE



Support the Development of LAE from Telecommunications Perspective



LAE



THANK YOU