

**INTEGRATION OF UAVS**

**INTO UK AIRSPACE**



**Lieutenant Commander**

**Matt Lee**

**Directorate Airspace Policy**

**CIVIL AVIATION AUTHORITY**

# Report Documentation Page

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# AIM

To inform the conference of the ongoing work by DAP to integrate UAVs into all classes of UK Airspace



# UAV OPERATIONS



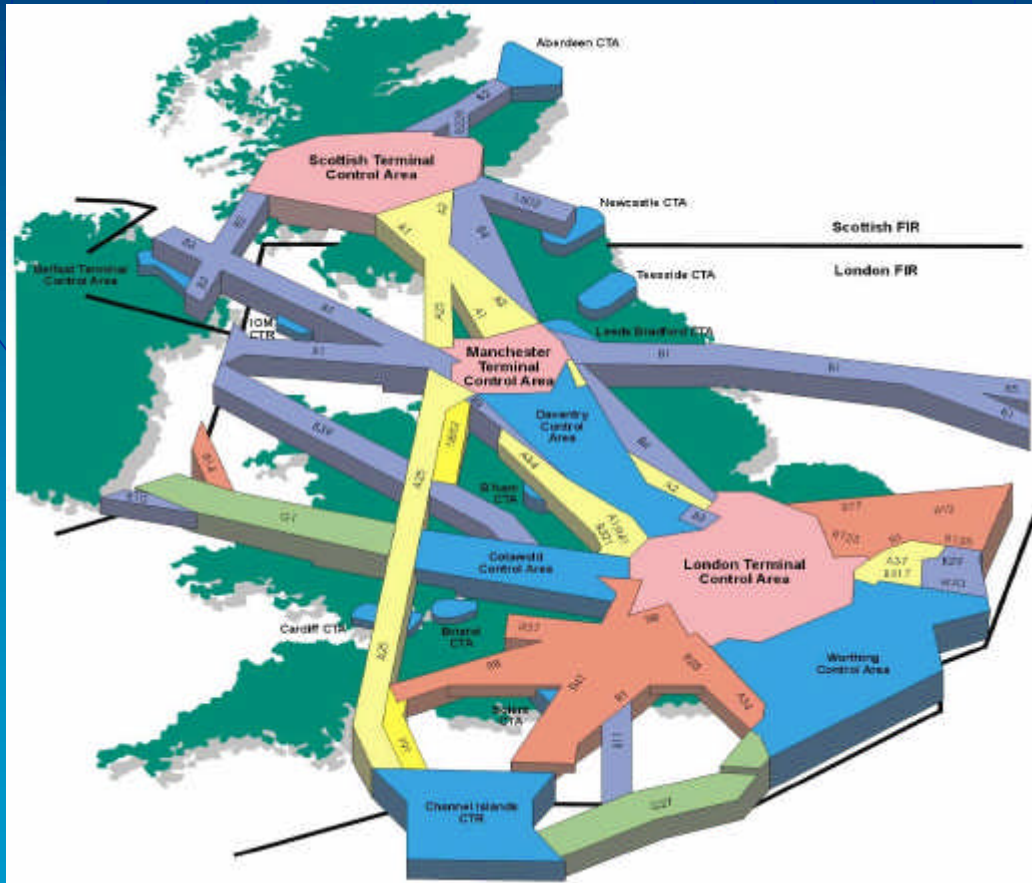
- UK Airspace
- Integrating UAVs with other airspace users.
  - UAV Operations in UK Airspace Guidance Doc
  - Sense and Avoid Criteria

# UK Airspace



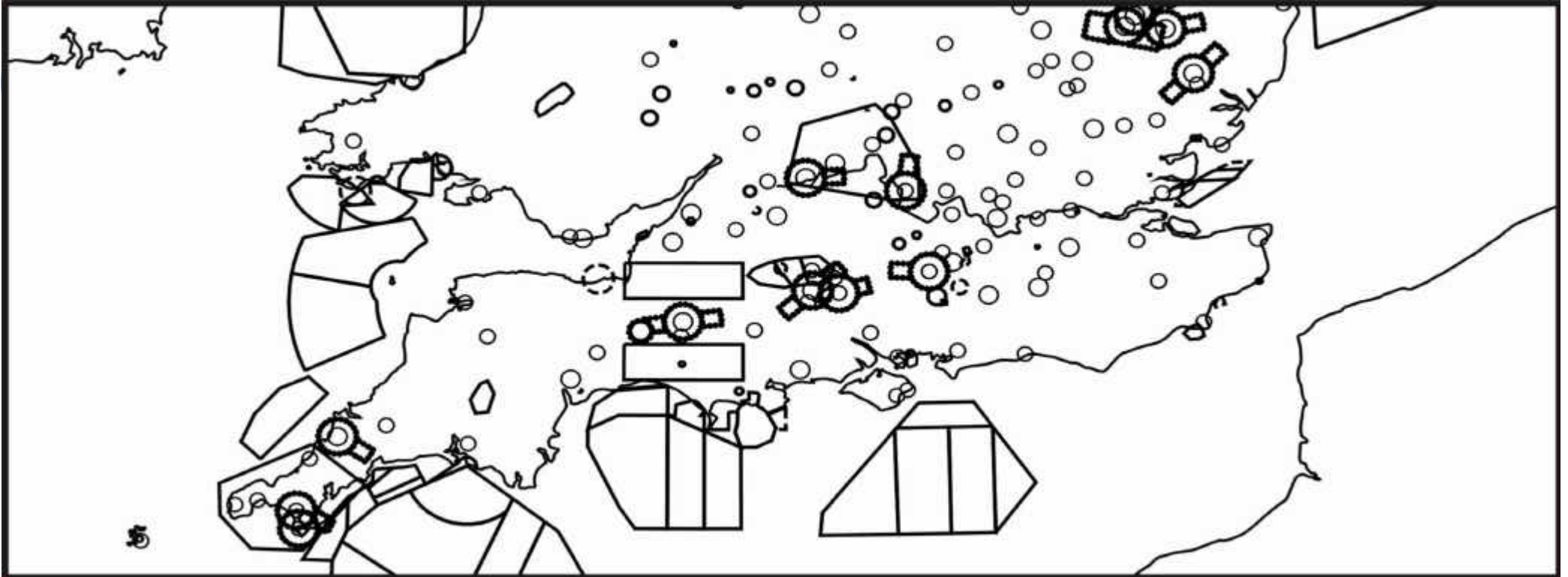
UK Sovereign  
airspace

# UK Airspace

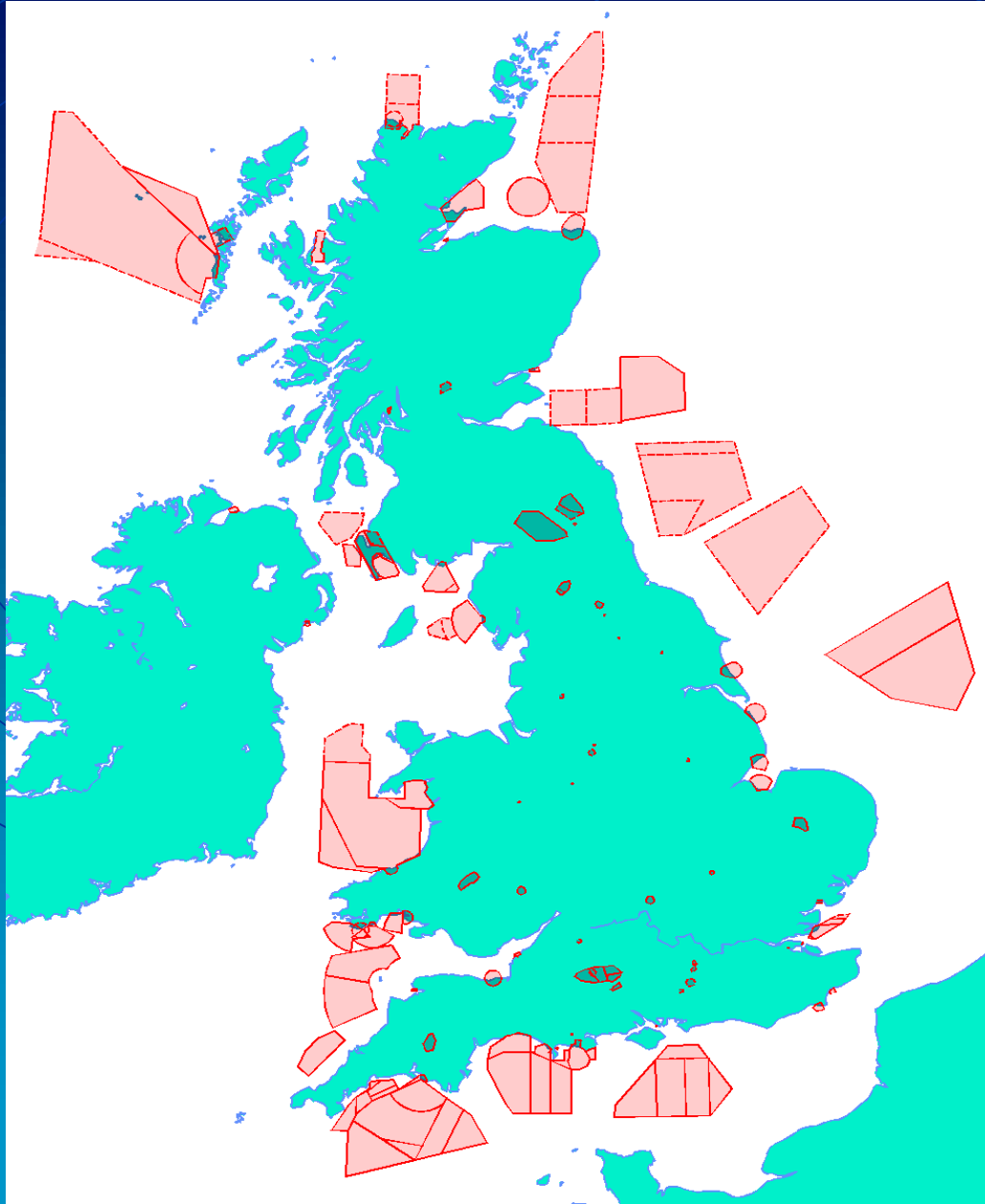


- UK Controlled Airspace (CAS)

# UK Airspace



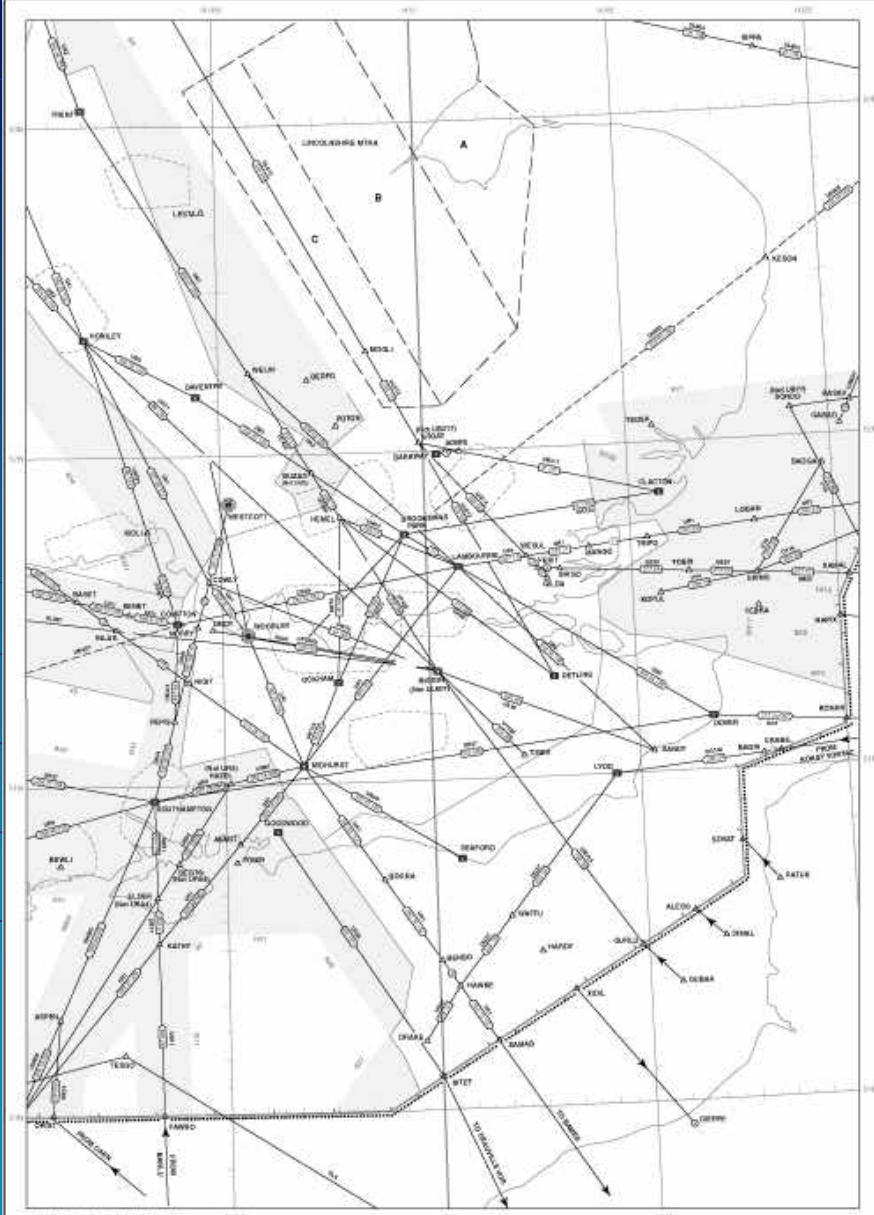
Examples of airspace divisions  
outside CAS



# UK Danger Areas



UK AIP UPPER AIRSPACE CONTROL AREA AND UPPER ATS ROUTES South East (2 Dec 99) ENR 6-3-2-3



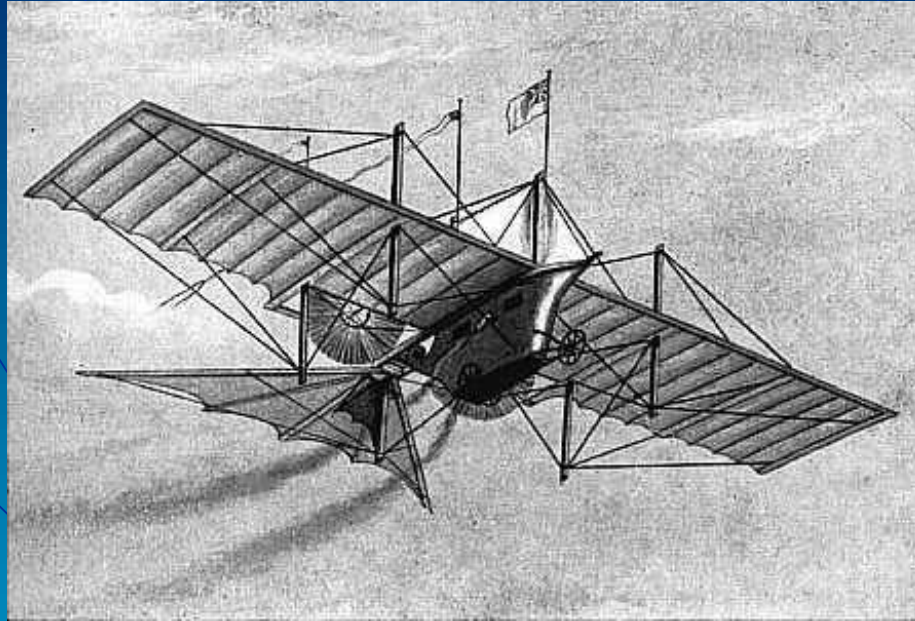
CHANGE GENERAL REVISION  
AERO INFO DATE 30 SEP 99 EFFECTIVE DATE 2 DEC 99  
Civil Aviation Authority AMDT AIRAC 12/99



# DAP Living Definition

**“An aircraft which is designed, or modified, not to carry a human pilot and is operated under remote or autonomous control.”**

# FIRST UK UAV FLIGHT



1848 Chard Somerset  
John Stringfellow

*Without CAA  
Approval*

# Key Players

Operations Steering Group – Meets 6

Monthly

Operations Working Group – Meets 3

Monthly

Includes experts from MOD (including Defence Procurement Agency), Unmanned Aerial Vehicle System Association (representing industry), other military and civil members and airspace regulators

# UAV Operations in UK Airspace - Guidance



- "UAV Operations in UK Airspace - Guidance" - "Signpost Document" for Industry and Operators.
- It will point the reader to the appropriate documentation, regulatory authority or policy makers according to their needs.
- [www.caa.co.uk/dap](http://www.caa.co.uk/dap)

# UAV Operations in UK Airspace - Guidance



- **Operator Qualifications**
  - **UAV Commander**
    - Overall responsibility
    - May command more than one UAV
  - **UAV Pilot (UAVp)**
    - Actively exercises remote control for non-autonomous flights, or monitors autonomous flights

# UAV Operations in UK Airspace - Guidance



## Airspace Principles

- ...operate within existing arrangements.
- ...no automatic right of airspace use..
- ...equivalent level of compliance...
- ...no increased risk to existing users..
- ...initially flights outside Danger Areas will be in temporary segregated airspace.
- ...provision of ATS must be transparent to the controller...callsign to include "Unmanned"

# UAV Operations in UK Airspace - Guidance



## General Principles - Outside Danger Areas

...ATC comms continuously monitored...

...Vehicle Operator must be able to take immediate control...

...special equipment mandated for airspace must be carried...

# UAV Operations in UK Airspace - Guidance



## General Principles - Outside Danger Areas

- ...an approved method of aerial collision avoidance is required...
- ...an approved method of terrain clearance is required...
- ...Standard Operating Procedures required..
- ...comply with the IFR or VFR as they affect manned aircraft - they may not fly VFR in IMC even with non-visual collision avoidance...

# UAV Operations in UK Airspace - Guidance



The CAA will consider any applications for “one-off” demonstration or proving flights outside the Danger Area structure.

# UAV Operations in UK Airspace - Guidance



- **Next Steps:**
- **Develop guidance in areas where it is lacking**
  - **Continue to address the “Sense and Avoid” issue**
    - **Await applications for UAV flights**

# Top Tip



**Manufacturers should not base their collision avoidance system on equipment currently fitted to other aircraft - they cannot wholly rely on an SSR-based system**

# Summary



The CAA anticipates the need for UAV integration in all classes of UK airspace - guidance and regulation for both civil and military will go hand in hand, wherever possible.

