Drone Ready Cities

Roadmap to a Regulatory Framework for Commercial Drones in Urban Environments

Regulatory Workshop

8th May 2024

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Ultimate outputs

A regulatory framework for use by other local authorities so that the whole UK can unlock the value of urban drone use

Defining necessary future drone trials

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Pre-workshop briefing – online

23rd April

- Context setting
- Share use cases
- Overview of airspace regulation
- Introduce draft regulatory framework
- Brief for workshop

Participant prep

- Add important missing use cases
- Read draft regulatory framework

Workshop

8th May

Coventry

- Identify areas where regulation is good, adequate, lacking
- Required actions for improvement

Output

- Regulatory framework with shortcomings identified and required actions to address

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Agenda

10:00-10:30	Registration and coffee	
10:30-10:35	Welcome to Coventry city council	Umutcan Erdogan, Transport Innovation Officer, Coventry City Council
10:35-10:40	Introducing Midlands Aerospace Alliance	Andrew Mair, Chief Executive, Midlands Aerospace Alliance
10:40-10:50	Objectives, agenda	
10:50-11:40	Breakout 1.1	Identify areas of good regulation, gaps and areas needing development
11:40-11:55	Check how it's going	
11:55-12:30	Breakout 1.2	Potential solutions and stakeholders
12:30-13:00	Lunch	
13:00-13:35	Breakout 2.1	Identify areas of good regulation, gaps and areas needing development
13:35-14:15	Breakout 2.2	Potential solutions and stakeholders
14:15-14:45	Review output and next steps	

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OUTPUT

Planning

CURRENT FRAMEWORK	WHAT AREAS ARE GOOD?	WHAT GAPS ARE THERE?	AREAS REQUIRING DEVELOPMENT	SOLUTIONS - WHAT IS NEEDED?	WHAT NEEDS TO HAPPEN? WHO NEEDS TO BE INVOLVED?
• Each of England, Wales, Scotland and Northern Ireland have a 'plan-led' system overseen by the country's Secretary of State responsible for national policy, guidance and a framework for local planning. The four countries' policies are, respectively, o England - National Planning Policy Framework o Scotland - National Planning Framework 4 o Wales – Planning Policy Wales o Northen Ireland - Policy Statement for Northern Ireland (SPPS) • Planning policy for any given area is set out in a Local Development Plan developed and overseen by the relevant Local Planning Authority (LPA) • Aviation matters within Local Development Plans are assessed against the UK wide Aviation Policy Framework • The planning policy hierarchy is summarised as o National aviation policy ▯ Aviation Policy Framework 2013 ▯ Jet Zero Strategy 2022 o National planning policy ▯ National Planning Policy Framework (for the country) ▯ Planning Practice Guidance (for the country) o Spatial Strategy o Local Development Plans	Smaller infrastructure installation e.g. drone in a box - largely no planning requirement Click or tap here to type Click or tap here to type	No guidance for when planning required or not There is not specific Use Category No Permitted Development rights e.g. drone infrastructure at logistics centre LPAs are not expected to be cognisent of avation regulation but may need to be involved in corridor planning No mechanism for safeguarding airspace of drone ports that are not 'Aerodromes'	Consideration of future proofing for drones in 106 Opportunity to incorporate drones mandatory inspection requirements Routes could be trans-authority - need for coordination	Guidance for when 1. planning not required e.g. drone in box on a fire station 2. planning being required e.g. vertiport. Ideally with no new regulations. (including when the application of existing or new Use Category and/or PD rights applies Case studies to form guidance Consultation by LPA to encourage public/media reaction - using 'public good' use cases first LPA involvement in determining routes as part of the risk assessment LPA dynamic data provision to CAA for temporary restrictions (AIP) e.g. events Future requirement for transport hubs developments to be ready to accomodate drones in Local Development Plans	Guidance and case studies developed by Planning experts Planning expert to assess whether addition Use Category appropriate or possible application of PD rights Click or tap here to type Capture the requirements for future that would be required in transport hubs Could central Govn' mandate inclusion of requirements in local development plans

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Building Regs

CURRENT FRAMEWORK	WHAT AREAS ARE GOOD?	WHAT GAPS ARE THERE?	AREAS REQUIRING DEVELOPMENT	SOLUTIONS - WHAT IS NEEDED?	WHAT NEEDS TO HAPPEN? WHO NEEDS TO BE INVOLVED?
• The Building Act 1984 is the most wide-reaching law controlling building in England and Wales. It sets the enforcement powers. • The Building Regulations 2010 go into more detail about building work. • Building work generally includes building new buildings, making buildings bigger, altering buildings and changing what they are used for. It is highly lightly that the installation of drone infrastructure will fall into one of these categories. • The Building Safety Act 2022 amends the Building Act 1984 in the case of Higher-Risk Residential Buildings (HRRB) in the wake of the Grenfall Tower tragedy and could have implications for drone infrastructure installed on or around HRRBs. • HM Government has published a Manual to the Building Regulations in two volumes. Volume 1 is a high level guide to the building regulations system and Volume 2 provides more detailed guidance.	Thought not likely to apply in take-off and landing Click or tap here to type Click or tap here to type	Are current fire protection regs adequate for charging and storage of Li Ion batteries or hydrogen No guidance of when building regs would apply if new of retrofitted building - weight, fire, electrical	Click or tap here to type Click or tap here to type Click or tap here to type	Assess whether building regs can accodomedate battery storage, charging or are new regs required Click or tap here to type Click or tap here to type	Click or tap here to type Click or tap here to type Click or tap here to type

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Environmental Protection

CURRENT FRAMEWORK	WHAT AREAS ARE GOOD?	WHAT GAPS ARE THERE?	AREAS REQUIRING DEVELOPMENT	SOLUTIONS - WHAT IS NEEDED?	WHAT NEEDS TO HAPPEN? WHO NEEDS TO BE INVOLVED?
The section below provides an overview of domestic and international regulatory frameworks which relates to environment protection in relation to the CAA and Environmental Agency within the United Kingdom. As there is no set Environmental Act' towards drone aviation within urban environments it is not intended that this should be taken as the only policy/legislation which applies to environmental protection. • The Environment Act 2021' Provides a legal framework for environmental governance and brings in measures for the improvement of the environment in relation to waste, resource efficiency, air quality, water, nature and biodiversity, and conservation. It does so by providing the Government with powers to set new binding targets, including for air quality, water, biodiversity and waste reduction. The Department for Environment, Food and Rural Affairs (DEFRA) published these targets in 2022 after consultation. • The UK is a founding member of the International Civil Aviation Organisation's (ICAO) Committee on Aviation Environmental Protection (CAEP). As the UK is a founding member the operator must adhere to ICAO and 'Standards and Recommended Practices' SARPs for uniformity in regulations, standards and procedures. • CAEP established assists the ICAO Council in developing new policies and SARPs in relation to aviation noise, emissions and other environmental impacts. The ICAO Council subsequently reviews and adopts CAEP recommendations, including amendments to the SARPs, and in turn reports directly to the ICAO Assembly where the main policies on environmental protection are defined. The UK is represented in ICAO and CAEP by the 'Department for Transport' (DfT), while the CAA and other specialists are nominated by the UK to CAEP's technical working groups. • Nature Conservation (Scotland) Act 2004. The Bill for this Act of the Scottish Parliament was passed by the Parliament on 5th May 2004 and received Royal Assent on 11th June 2004. An Act of the Scottish Parliament to make provision in relation to the conservation of biodiversity; to make further provision in relation to the conservation and enhancement of Scotland's natural features; to amend the law relating to the protection of certain birds, animals and plants; and for connected purposes. • Byelaws apply to many areas of the UK that specifically restrict the use of drones for the protection of wildlife.	Click or tap here to type Click or tap here to type Click or tap here to type identification of regulations not relating to drone aviation	Police and emergency services ink with Enviornment - biodiversity - wooded areas Impacts on wildlife and biodiversity - drone polution on bird population etc Impact of noise for wildlife Emergency services exemptions - Section for FW - could link with Environment eg public - with explanation Different stakeholder engagement with enviornmental agency Battery storage / General storage of drones - Monitoring system regulations End of Life Regulations for drones - currently no regs for recycling Drone prodcution / transportation Drone age for usage what is the requirement for age of a drone to be used without harming the environment? MOT for drones / inspections for drones (Air Worthiness regs for drones) Sustainability Development Goals Guidlines for nature protection Impacts on bird strikes Updated current legislation to incorporate drone usage	Emergency Services - Police Research within wildlife and biodiversity Stakeholder enegements Process for disposing hazardous materials through regs Circular Economy process for drones - End of life process Drone Inpections Wildlife impact on drone aviation	A Section regarding emergency services Enhancement of the circular economy for drones End of life process for drones Research regarding biodiversity for drone aviation	Click or tap here to type Click or tap here to type Click or tap here to type

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Electrical Safety/Inspection

CURRENT FRAMEWORK	WHAT AREAS ARE GOOD?	WHAT GAPS ARE THERE?	AREAS REQUIRING DEVELOPMENT	SOLUTIONS - WHAT IS NEEDED?	WHAT NEEDS TO HAPPEN? WHO NEEDS TO BE INVOLVED?
• The Electricity at Work Regulations 1989: This regulation requires that all electrical systems, equipment, and installations are maintained to prevent danger. This includes regular inspections to ensure that they are safe to use. • The Health and Safety at Work Act 1974: This regulation places a duty on employers to ensure the health and safety of their employees while at work. This includes providing a safe working environment, which requires electrical inspections to be carried out regularly. • The Management of Health and Safety at Work Regulations 1999: This regulation requires employers to assess and manage the risks associated with their work activities. This includes identifying and controlling risks associated with electrical systems and equipment, which require regular inspections. • The Provision and Use of Work Equipment Regulations 1998: This regulation requires that all work equipment, including electrical equipment, is suitable for its intended use and is maintained in a safe condition. This includes regular inspections to ensure that equipment is safe to use. • The Wiring Regulations (BS 7671:2018+A2:2022): This standard sets out the requirements for the design, installation, and maintenance of electrical systems in the UK. It requires that electrical installations are inspected and tested at regular intervals to ensure that they are safe to use.	Certification processes which are required for drone aviation depending on size of batteries Click or tap here to type Click or tap here to type	Fire hazrads due to uncontained thermal runaways Electrical infrastructure for drone aviation Storage of electronical equipment / battery storage Regular inspections for drone charging stations Scalability and intergrasion for eelctrical infrastructure Enahanced maintenance of electrical equipmenet Procedure for storage and containment - high voltage equipment Quality of electrical equipment ie batteries Click or tap here to type	Updateing regulations to current date Innovation within technology - 5G standards Monitoring drones and storage due to electrical equipement Defining of the regulations preventing overlap - definign key areas of current regulations	Amendments to current regulations Click or tap here to type Click or tap here to type	Click or tap here to type Click or tap here to type Click or tap here to type

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Privacy & data Protection

CURRENT FRAMEWORK	WHAT AREAS ARE GOOD?	WHAT GAPS ARE THERE?	AREAS REQUIRING DEVELOPMENT	SOLUTIONS - WHAT IS NEEDED?	WHAT NEEDS TO HAPPEN? WHO NEEDS TO BE INVOLVED?
The Civil Aviation Authority's remit is limited to safety and does not include concerns over privacy, though advises that pilots using drones with cameras should be aware of relevant Data Protection Regulation. The Drone and Model Aircraft Code offers multi-faceted advice regarding respecting people and their privacy The Information Commissioner's Office (ICO) is an independent body responsible for upholding information rights. The ICO recognises that drone flight can involve collecting, using and/or sharing personal data, and poses the potential for collateral intrusion. The ICO distinguishes between hobbyists and professional or commercial flyers, describing compliance with data protection law (e.g., provision of privacy information, undertaking a Data Protection Impact Assessment) and asserting that where required, drone pilots must comply with the Surveillance Camera Code The Biometrics and Surveillance Camera Commissioner advise that the use of drones with cameras by 'relevant authorities' is covered by the Surveillance Camera Code. The Code is not technology specific, rather is principles based and applies to the use of surveillance cameras in public places. It encourages other operators and users of surveillance camera systems to adopt voluntarily. The code specifies that covert surveillance by public authorities is not covered and is instead regulated by Regulation of Investigatory Powers Act 2000.	Click or tap here to type Click or tap here to type Click or tap here to type Click or tap here to type Click or tap here to type Click or tap here to type	Dealing with "Content Creators" No existing provisions for segregation of operational and personal data. How do you differentiate between images captured via smartphones on the ground and drones in the sky? Answer you can't! A multi-regulatory authority that can deal between safety and privacy, simply washing hands by the CAA of not my problem is hard to do AJ - The earlier point about overwatch/ unintended capture is interesting too, eg, unwanted intrusion - as this relates to the potential misuse of private information Capture, storage and distribution of unintended information, for example where a drone doing Building Safety Inspections capture images of bystanders. Should there be a difference between hobbyists and professionals, given the CAA doesn't treat them differently Where is the data stored, EU/UK/overseas (AJ)	Should the SCC be voluntary? How do LAs deal with competing data protection interests (drone v ground based) Requirement for Data Protection Impact Assessments for drone operators? Training for all operational users in the use of data and drones. Also 3rd party understanding of use/intent of a drone. What data flows within LA admin can be digitised to deal with some of the admin increased enquiries can handle e.g. Customs/Border last night at LHR and other airports Permissions to access data e.g. FOIA and transparency of process/data? Where does the money come from to pay for LAs to deal with all this paperwork? (from voice conversation) AJ - I think there are also data and privacy-related questions about data at different points - e.g. not just collection, but processing and wider storage KB - Our traffic surveys can also give us indicitaive speed data from vehicles	Recording positional data in a central repository and having a record of flight paths to ensure that drones are doing what they were approved to do The need for a government/regualtor operated platform where an uninvolved person should be able to reqisition top level data and escalate it if appropriate. A mechanism for data provinence for e.g. public, police, LAs, ICO, CAA so you have enough to assuage privacy fears. review of existing legal cases and guidance for lawyers (e.g CPS) to further understand data privacy / data protection legal issues and responses more coordination between CAA and ICO (and other relavant bodies - eg biometrics and surveillance camera commissioner) in terms of accessible advice on privacy and data protection related issues further guidance on how drones fit with existing law regarding electronic communications (e.g. wireless telegraphy act) further work with LAs to understand concerns, and respond with messaging, communication and advice embedding privacy by design? e.g. actions by industry Workflow for Local Authorities to deal with drone applications based on an operators safety case Anything further the drone industry can do in terms of communication, engagement and/or messaging about privacy concerns	Click or tap here to type Click or tap here to type Click or tap here to type

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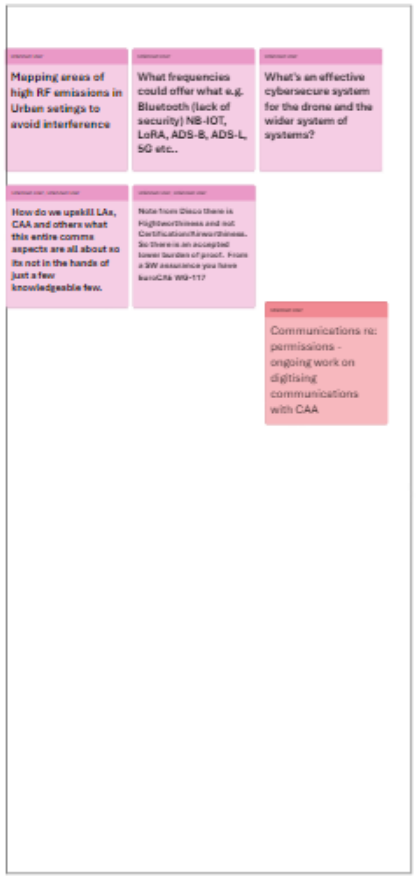
Electronic Communications

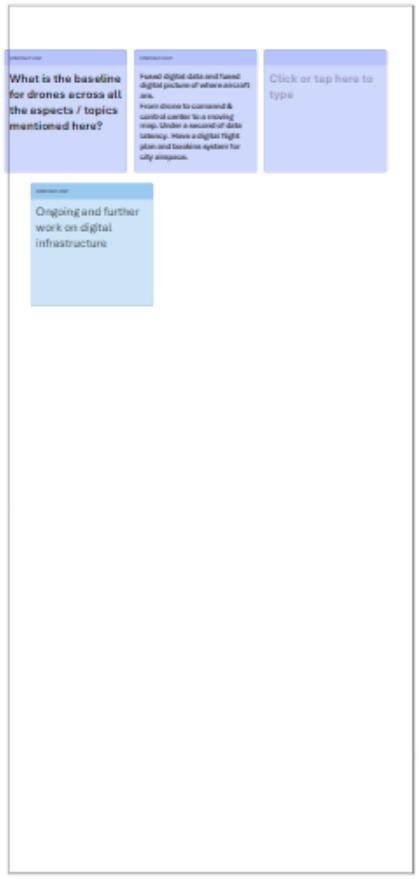
CURRENT FRAMEWORK	WHAT AREAS ARE GOOD?	WHAT GAPS ARE THERE?	AREAS REQUIRING DEVELOPMENT	SOLUTIONS - WHAT IS NEEDED?	WHAT NEEDS TO HAPPEN? WHO NEEDS TO BE INVOLVED?

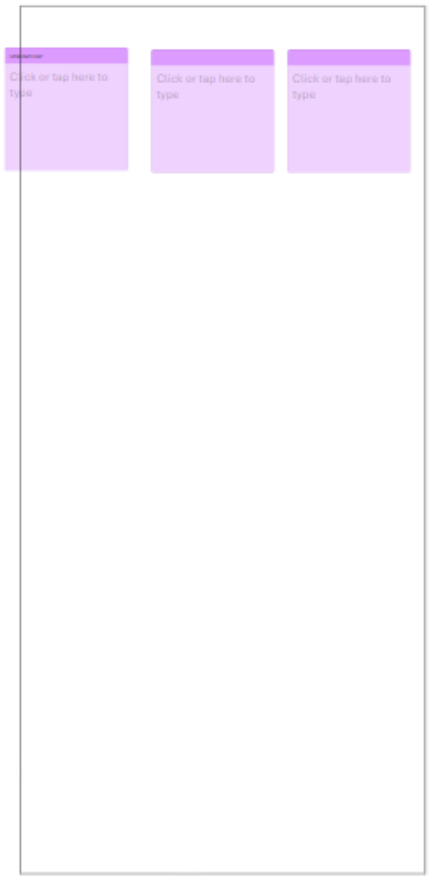
- The United Nation's International Telecommunications Union (ITU) maintains the Radio Regulations which contracting States, including the UK, are required to ensure compliance with.
- The UK electronic communications regulatory framework is mainly contained within:
  - the Communications Act 2003
  - the Wireless Telegraphy Act 2006
- This domestic legislation governs the regulation of the telecoms markets, guarantees basic user rights, and sets out the powers and duties of the Office of Communications (Ofcom) as the national regulator, including how radio spectrum in the UK is managed.
- The EU Common Regulatory Framework is implemented through the above legislation.
- European Electronic Communications Code (EECC) - was adopted by the EU in December 2018 with EU countries applying the new directive to their national law by 21 December 2020.
- The UK transposed the European Electronic Communications Code (EECC) Directive into UK law ahead of the transposition deadline of 21st December 2020.
- The Electronic Communications and Wireless Telegraphy (Amendment etc.) (EU Exit) Regulations 2019 is secondary legislation made in February 2019 to ensure that the UK telecoms regulatory framework remained operable when the UK left the EU.

HMG 2020

- The Radio Equipment Regulations 2017: Great Britain, applies to radio equipment supplied in or into Great Britain
- The Radio Equipment Regulations 2017: Northern Ireland, applies to radio equipment supplied in or into Northern Ireland
- CAA - Under agreement with Ofcom and the Ministry of Defence, CAA is the band manager for several sets of radio spectrum frequencies







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Carriage of Dangerous Goods

CURRENT FRAMEWORK	WHAT AREAS ARE GOOD?	WHAT GAPS ARE THERE?	AREAS REQUIRING DEVELOPMENT	SOLUTIONS - WHAT IS NEEDED?	WHAT NEEDS TO HAPPEN? WHO NEEDS TO BE INVOLVED?
• "The global principles governing the safe transport of DG by air are described in Annex 18 to the Convention on International Civil Aviation (the Chicago Convention) • These broad principles have been amplified into the detailed 'Technical Instructions for the Safe Transport of Dangerous Goods by Air' (Doc 9284) • These technical instructions are reproduced in the Dangerous Goods Regulations (DGR) published by the International Air Transport Association (IATA)" GROTE et al 2021 • EU Regulation (EU) 2002/2786 was retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 and amended by the CAA's Air Navigation (Dangerous Goods) Regulations 2002 • CAP2248 Fundamentals: Carriage of Dangerous Goods by Remotely Piloted Aircraft Systems gives guidance for carrying dangerous goods falling within UN3373 Biological Substances, Category B as cargo • In 2023, the CAA published CAP2555 Guidance on the Carriage of Dangerous Goods as Cargo for UAS/RPAS Operators in the Specific Category – note that this is guidance rather than regulation	COVID showed that infectious substances can be carried BVLOS with DG training using , crash protected, lockable packaging with learnings from aviation Click or tap here to type Click or tap here to type	If an operator notifies a Local Authority of carriage of DG, what do they do with it? Apparent lack of trust with some stakeholders e.g. air ambulance Every local authority set up differently, drone issues could be with planning or other dept.	CAA sign-off on case-by-case basis. How does it become routine? Click or tap here to type Click or tap here to type	Click or tap here to type Click or tap here to type Click or tap here to type	Click or tap here to type Click or tap here to type Click or tap here to type

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Other areas identified to be covered by the framework

- Health & Safety