

## Drone Industry Action Group

20 March 2019 - Cranfield Aerospace Integration Research Centre (AIRC)

### Attendees:

**Chair:** Iain Gray, Cranfield University  
Graham Brown, ARPAS-UK  
James Dunthorne, ARPAS-UK  
David Watson, Blue Bear  
Stuart McGlynn, Cyberhawk  
Geoff Pugh, ConsortiQ  
Nikos Pronios, Innovate UK  
Simon Ritterband, Moonrock Insurance  
Tris Dyson, Nesta  
Craig Roberts, PWC  
Ben Evans, PWC  
Dave Orton, Sky Futures  
Neil Watson, Thales  
Sameer Savani, ADS  
Dan Barlow, DIT  
Mark Westwood, TSC  
Alfred Jackson, TSC  
Officials from BEIS and DFT

### Guest:

Julian McGougan, TechUK

### Apologies:

Yoge Patel, Blue Bear  
Richard Deakin  
Richard Parker, Altitude Angel  
Mike Gadd, Altitude Angel  
Philip Tarry, Halo Drones  
Brian Hampson, ADS  
Simon Merriman, BSI  
Rikke Carmichael, Network Rail  
Officials from CAA

### 1. Welcome

Iain Gray welcomed all to Cranfield. He announced that past minutes were now online, thanked ARPAS-UK website for hosting and moved to the first of the series of updates on the agenda.

### 2. Updates

**DfT:** The airport proximity measures in the air navigation order have come into force. Details have been widely published via gov.uk and on dronesafe website. In January, [Government's response](#) to the future of drones consultation was published. The [Drone \(regulation\) Bill](#) is on track for Royal Assent in late Spring. Government's [Aviation Strategy consultation](#) is open, with responses due by 20 June 2019, except on airspace change legislation, where responses are due by 11 April. IAG members are encouraged to contribute.

ARPAS-UK provided feedback from their members regarding drone flights within flight restriction zones (FRZ) around aerodromes. Due to an apparent liability issue, some aerodromes are being reported as refusing all drone activity within the FRZ. DfT noted the matter would be investigated.

DfT also reported the CAA has launched a [call for evidence on electronic conspicuity solutions](#), open until the end of May.

**BEIS:** Chris Skidmore, Minister for Universities and Science, announced at the Robotics KTN showcase on 12 March he would be convening a new Robotics leadership group, bringing leaders together to accelerate the ambitions of the sector. This would have a focus on intelligent automation/ service robotics, and include perspectives from AI and the broad range of potential applications across sectors including drones, as well as driverless cars, medical, construction, agriculture, enterprise, consumer, etc.

**DFID:** UK drone operators are encouraged to consider two existing opportunities:

- [Lake Victoria Challenge](#) application window is open until 25 April.
- [Frontier Technology Livestreaming](#) is an award-winning DFID programme that focusses on quick testing and validation of technology concepts for development and humanitarian challenges. There are a number of small-scale proof-of-concept UAV pilots ongoing, and the Frontier Tech Hub broadcast opportunities through their [supplier database](#).

**DIT:** (contact: [daniel.barlow@trade.gov.uk](mailto:daniel.barlow@trade.gov.uk) ) provides international support for the Future Flight programme (including drones, urban air mobility and electrification), including:

- o Taking 20+ business and government colleagues to [Uber Elevate](#) in June 2019
- o Engaging with Norway on their aspirations for electric domestic flights by 2040
- o Exploring opportunities in Japan, South Korea and Africa (eg Rwanda drone testing corridor, with DFID)

**InnovateUK:** The Future Flight challenge, announced in December 2018, continues to make progress specifying the core elements of the programme. The programme was still on track for competitions by the end of the year. Colin Smith (Rolls Royce Director of Engineering and Technology) had been appointed as senior industry leader for the programme, supported by Lynn Gladden (EPSRC Chair). Nomination and appointment of candidates for interim Challenge Director are underway – seeking a senior individual from industry. A slide pack is attached with further details.

**ADS Urban Air Mobility:** Sameer Savani, Head of Engineering and Innovation at ADS, outlined the activities of this group, with some 60 organisations involved (including non-ADS members) exploring the future of UAM. He underlined this was not miniaturising existing planes, but a new approach to aviation and urban transport. The public would expect Uber levels of efficiency with aviation levels of safety. They had working groups across Vehicles, Finance, Markets, Networks, Operating Environment – detailed in the slides attached. ADS is non-profit, funded by member contributions and a good network for collaboration and business development.

He asked for IAG engagement around new business models, UTM ('U-Space'), public perception (recognising the challenge negative perceptions would have). What efforts were being or could be taken to showcase positive use cases and build understanding and acceptance of these emerging forms of transport?

In discussion the following points were made:

- Beware over-regulation. UK should welcome inward investors, such as [Joby Aviation](#), [Uber](#) and others. Delivery drones have been operating in [Reykjavik](#) successfully thanks to a permissive regulatory approach that weigh up risks against potential benefits.
- Public perception will be a challenge if air taxis are seen as only for High Net Worth individuals. This needs to be a nuanced debate, as most people are not rigidly for or against, eg would support emergency medical delivery but not pizzas.
- This growth potential underlines the importance of UAV traffic management (UTM) work and the technical challenges of BVLOS, sense and avoid and urban landing.
- Where are we best focusing our resources in the UK? What advantages and opportunities do we have and can we focus efforts there.

**Nesta:** Tris Dyson outlined their aspiration for Flying High to fit within the Future Flight programme. They are currently designing specifications to procure and deliver testing environments and scoping

a two year process (which CAA feel is ambitious but feasible) focused on urban solutions in three areas: medical delivery, emergency services and infrastructure monitoring. These initial 'proof cases' incl 'end-user' client partners. They anticipate a prize process of three rounds, each with funding support: 1. initial concept viability, 2. Rigorous testing, 3. Live demonstrators. There will be a significant and broad public perception component, including possible gaming simulations. They are working closely with CAA regulatory sandbox team.

### 3. DfT's Pathfinder

DfT updated on the refreshed Pathfinder Programme – see slides – which aims to articulate and prioritise a series of key challenges, with clear deliverables and progress. The 'challenges' are intended to sit alongside the Pathfinder Framework which is available on the [TSC's Pathfinder webpage](#) and describes the benefits and expectations of being part of it. Participants in the programme would be asked to agree to a 'charter' describing responsibilities. Next meeting of the Pathfinder Community is 3 April (am) to share progress and next steps. DfT welcomed suggestions for suggested focus areas, case studies and mechanics.

In discussion the following points were made:

- It should ensure it has at the core the commercial opportunities emerging, rather than push the technology. DfT confirmed that was part of the criteria. Projects should therefore have a clear end-user / market as a partner, eg a current project on long linear features was being funded by the energy sector innovation body (EIC). The programme had suggested potential service providers and the aspiration was for open solutions that any energy company could adopt.
- InnovateUK mentioned examples of wind turbine inspection that they had supported.
- Asked where this would fit with Flying High, DfT expected that the Pathfinder Framework could support Flying High, as well as other existing and planned test programmes or research.
- Could pathfinder address the core issue for so many – the length of time taken to approve operational safety cases, at least for core use cases in significant sectors (eg oil and gas). This already exists for emergency services via [E4506](#)
- Or address the core technical challenge of autonomous sense and avoid.
- Or the process of assuring certification of software (EASA are asking this)

### 4. Working Group updates

**Working Group on Public and Commercial perceptions:** Craig Roberts presented slides – see attached – outlining the group's approach and working conclusions. The group has proposed an approach to address public and commercial perception to maximise the potential for the growth of the UK drone economy. This includes how to target and influence groups that have the most negative perceptions and/ or the most potential to drive economic growth. The programme will leverage PWC's post-Gatwick drone trust survey to sanity check previous survey findings and ensure the group has a mandate for action. Aside from agreeing the strategic approach, one of the key points was whether the DIAG had the ambition and mechanisms to fund the working group actions.

In discussion the following points were made:

- Drone perception is one of the key blockers to the growth of the drone economy and the DIAG agreed that this should be addressed

- The DIAG and network should be able to generate a number of "drones for good" (human interest - public) stories and case studies (tangible business results - commercial)
- The aim should be to include and push out real human interest stories and positive use cases: eg the National Fire Chiefs Council report they do about 10k drone flights a year and has numerous good news stories
- The group should coordinate the contacts they had and where the natural 'industry champions' lay. ARPAS-UK was regarded as a key voice as the trade association
- A level of funding is required to ensure that such stories and case studies are effectively distributed, eg website, PR firm, etc
- Reaching the general public and financial press and headline news may be difficult and expensive
- TSC may have some modest marketing budget they could use to support
- The IAG was not yet seen as an independent, impartial or key voice of the sector. Many different models existed in other sectors. The IAG agreed to progress with the proposed strategy and to ensure that it linked into other key initiatives on drone perception.
- HSE are running webinars on drones on safety benefits of removing people from heights/harm. This activity should combine with their work. Other potential allies included CAA, UKRI, DCMS, Tech Nation and TechUK.

**Action:** Gordon Baker will arrange a follow-up phone call to address the challenge of taking this forward (proposed action, funding, contacts) with volunteers from the group.

**Working group on Operating Safety Case:** A short paper would be circulated to the group shortly. Once input was received, the group would engage with the CAA to take forward.

**Working Group on developmental airspace:** A draft paper had been prepared and would be discussed in a half day session with a number of IAG volunteers.

**Action:** Mark Westwood would convene, and update the group with progress

## 5. AOB

Transport Systems Catapult merges with Future Cities Catapult to become Connected Places Catapult as of 1 April 2019.

**Standards:** People willing to contribute to BSI activity should get in touch with Simon Merriman. New teams had been established at National European and International level – see attached paper. Blue Bear was engaged.

**Skills:** Organisations with details of specific skills needs or programmes were encouraged to share with Gordon Baker at BEIS. A range of activities were mentioned, including:

- Specific outreach programmes and material with schools (14-18 yrd olds) preparing them to be commercial drone operators.
- Trade body ARPAS-UK is working on a variety of information and training programmes, supporting NQEs, working with Industry Training Boards, targeting specific niches and additional accreditation options.
- New approaches within the NQEs (existing training bodies) including getting properly OFQUAL accreditation
- The CAA expectation that with the forthcoming requirement for all drone operators to be registered comes training

- Insurers requiring new operating capabilities to insure operators for eg oil and gas sector flights, etc
- Connections into the training bodies in existing industries (ECITB, CITB) providing bespoke training programmes. + Police and fire services have put hundreds of officers through training.
- Challenges facing air traffic control, CAA, in recruiting and retaining talent

**Membership:** The Chairman would consider approach and applications from new members and revert to the group at the next meeting.

**Next meeting** is scheduled for 12 June.