

## CAA Operational Assessment

|                                   |   |
|-----------------------------------|---|
| Title of airspace change proposal | RPAS operations within TDA Southern North Sea |
| Change sponsor                    | Flylogix Ltd                                  |
| Project reference                 | ACP-2023-066                                  |
| Account Manager                   | [REDACTED]                                    |
| Case study commencement date      | 16 October 2023                               |
| Case study report as at           | 19 December 2023                              |

### Instructions

In providing a response for each question, please ensure that the 'status' column is completed using the following options:

- YES
- NO
- PARTIALLY
- N/A

To aid the SARG Lead it may be useful that each question is also highlighted accordingly to illustrate what is:

resolved YES not resolved PARTIALLY not compliant NO

### Executive Summary

This ACP proposes a temporary danger area (TDA) for a 90 day period, starting in March, following AIC publication in March (delayed due to late submission) to enable Flylogix to conduct Beyond Visual Line of Sight (BVLOS) surveying methane emissions of offshore installations situated in the Southern North Sea using an Unmanned Aircraft System (UAS). If approved, the RPAS would depart from Hollym Airfield, South Yorkshire and operate between surface and 800ft AMSL (760ft AGL) over land and up to 1,300ft AMSL within the complex of TDAs over water. The activation of the TDA would be for a maximum of 10 flights in the 90-day period of implementation.

The sponsor intends to only activate the TDA on the days the flights are taking place and for the period of the flights. The intended activity is planned for the weekends where possible to minimise impact on offshore helicopter operations which are the most frequent users of the airspace.

The sponsor has an agreement with Anglia Radar to provide a DACS, where possible, to allow aircraft to cross the TDA when it is safe to do so.

No amendments were made to the proposed airspace structure following engagement activity, although the sponsor has agreed to some enhanced notification with some stakeholders.

Given the above, the impact on other airspace users will be low while offering protection to the BVLOS RPAS operation.

| 1.  | Justification for change and options analysis (operational/technical)   | Status |
|-----|---|--------|
| 1.1 | Is the explanation of the proposed change clear and understood?   | YES    |
|     | The TDA complex is designed to support offshore energy platform methane survey flights.   |        |
| 1.2 | Are the reasons for the change stated and acceptable?   | YES    |
|     | <p>Yes, the activation of a TDA is currently the accepted way of mitigating the risk of non-participating aircraft interacting with a RPAS operating BVLOS. CAP 722 gives three ways that BVLOS operations can be completed:</p> <ul style="list-style-type: none"> <li>a. By showing a Detect and Avoid system that is equivalent to See and Avoid</li> <li>b. By segregating the operation</li> <li>c. By showing the operation has no aviation risk</li> </ul> <p>There is currently no certification or Acceptable Means of Compliance in the UK for UAS of the size of Flylogix's aircraft, flying BVLOS. This means option b is the only viable solution.</p> |        |
| 1.3 | Have all appropriate alternative options been considered, including the 'do nothing' option?  | YES    |
|     | It is current CAA policy that BVLOS RPAS activity without an approved DAA system shall be contained in segregated airspace, normally a Danger Area. A 'do nothing' option would not allow this activity to take place in the manner proposed by the sponsor. Temporary changes to the airspace design do not require options consideration.   |        |

|     |   |     |
|-----|---|-----|
| 1.4 | Is the justification for the selection of the proposed option sound and acceptable?   | YES |
|     | It aligns with existing policy and, provided that the Operational Safety Case (OSC) for the RPAS operations is accepted by the CAA, establishing a TDA is the most suitable option for the activity being proposed. |     |

| 2.  | Airspace description and operational arrangements  | Status |
|-----|--|--------|
| 2.1 | Is the type of proposed airspace design clearly stated and understood?   | YES    |
|     | The use of a TDA is appropriate for BVLOS operations. the sponsor is proposing two separate TDA complexes to service the two separate oil platforms. Each multi-segment TDA is proposed to have vertical extent from SFC to 1300ft AMSL. This allows the UAS to operate between surface and 800ft AMSL with appropriate vertical buffer. The sponsor proposed to operate VLOS from Hollym Airfield (on the South Yorkshire coast) and transition to BVLoS regime once offshore inside the TDA. Only one TDA will be activated at any one time.   |        |
| 2.2 | Are the hours of operation of the airspace and any seasonal variations stated and acceptable?  | YES    |
|     | Activation of the TDA will not be permanent, it is proposed to take place from the 5 March 2023 and run until 3 June 2024. The actual dates and times of activation will be promulgated by NOTAM. The TDA will only be active on days and at times where operations within that TDA are taking place. The TDA complex for each day will be activated via NOTAM with Anglia Radar as the controlling authority. As the RPAS progresses through each TDA segment a call will be made to Anglia Radar Watch Supervisor by the PIC to advise them that a particular segment has been cleared and progressing with the route. The RPAS will operate within the TDA segment surrounding the asset and the sponsor will call Anglia Radar prior to commencing the return journey. |        |
| 2.3 | Is any interaction with adjacent domestic and international airspace structures stated and acceptable including an explanation of how connectivity is to be achieved? Has the agreement of adjacent States been secured in respect of High Seas airspace changes?  | YES    |
|     | The TDA sits solely within the UK FIR and does not impact any CAS; mainly offshore it is up to 1300ft AMSL. The TDAs pass through a TMZ. This is managed by Anglia Radar who have also agreed to provide a DACS for the TDA. The UAS is Mode-S transponder equipped. The furthest point on the TDA is >100nm from the closest FIR boundary.  |        |
| 2.4 | Is the supporting statistical evidence relevant and acceptable?  | N/A    |

|     |   |     |
|-----|---|-----|
|     | There was no requirement for any statistical evidence, such as traffic numbers.   |     |
| 2.5 | Is the analysis of the impact of the traffic mix on complexity and workload of operations complete and satisfactory?  | YES |
|     | This TDA is from SFC to 1300ft AMSL in Class G airspace, with the RPAS expected to operate between the surface and 800ft AMSL. The DACS will be provided by Anglia Radar who are familiar with the nature of operations relating to the offshore energy platforms in the area. Engagement with Anglia Radar relating to HMRI 8, 9 and 10 has taken place. HMRI 8 are route indicators to platform areas and are managed by Anglia Radar. Anglia Radar are content to dynamically manage the traffic situation, for example in the event of potential weather implications Anglia Radar will take a decision as to whether the operations can take place. This has been the case within previous operations submitted by the sponsor and the sponsor will always adhere to the decision and guidance provided by Anglia Radar. |     |
| 2.6 | Are any draft Letters of Agreement and/or Memoranda of Understanding included and, if so, do they contain the commitments to resolve ATS procedures (ATSD) and airspace management requirements?  | YES |
|     | The only ATS unit involved is Aberdeen (Anglia Radar), who are providing the DACS. An LoA and TOI has been presented in support of the proposed TDA.  |     |
| 2.7 | Should there be any other aviation activity (low flying, gliding, parachuting, microlight site etc) in the vicinity of the new airspace structure and no suitable operating agreements or ATC Procedures can be devised, what action has the change sponsor carried out to resolve any conflicting interests?   | N/A |
|     | Aberdeen (Anglia Radar) will be providing a DACS. The precise shape and location of the TDA complex has been designed to minimise the impact on other airspace users. The DACS radio frequency will be provided in an AIC. All relevant local operators (including MOD) have already been notified via the stakeholder engagement process. In addition, the sponsor has agreed to contact several stakeholders to consult on timings of flights or to notify activation, depending on their requirements.   |     |
| 2.8 | Is the evidence that the airspace design is compliant with ICAO SARPs, airspace design & FUA regulations, and Eurocontrol guidance satisfactory?  | YES |
|     | This is a TDA in Class G airspace.  |     |
| 2.9 | Is the proposed airspace classification stated and justification for that classification acceptable?  | YES |

|      |   |     |
|------|---|-----|
|      | There is no change in airspace classification – the TDA facilitates potentially hazardous activity taking place with sufficient notification to other airspace users and mitigates the risk of interaction with non-participating traffic.  |     |
| 2.10 | Within the constraints of safety and efficiency, does the airspace classification permit access to as many classes of user as practicable?  | YES |
|      | The TDA will have a DACS within Class G airspace. Activation and utilisation will be periods of a few hours per day, with each individual TDA segment only activated as necessary in order to minimise the impact on other airspace users. The TDA is split into segments to ensure that other airspace users can access the TDA when not required by the RPAS operation.   |     |
| 2.11 | Is there assurance, as far as practicable, against unauthorised incursions? (This is usually done through the classification and promulgation.)   | YES |
|      | The precise shape and location of the TDA complex has been designed to minimise the impact on other airspace users and also the potential for incursions caused by confusion about the extent of the structure. The DACS radio frequency will be provided in an AIC. All relevant local operators (including MOD) have already been notified via the stakeholder engagement process. In addition, the sponsor has agreed to contact several stakeholders to consult on timings of flights or to notify activation, depending on their requirements. |     |
| 2.12 | Is there a commitment to allow access to all airspace users seeking a transit through controlled airspace as per the classification, or in the event of such a request being denied, a service around the affected area?  | YES |
|      | The TDA is in Class G airspace, mainly over the sea.  |     |
| 2.13 | Are appropriate arrangements for transiting aircraft in place in accordance with stated commitments?  | YES |
|      | Aberdeen (Anglia Radar) will provide a DACS.  |     |
| 2.14 | Are any airspace user group's requirements not met?   | NO  |
|      |   |     |

|      |   |     |
|------|---|-----|
| 2.15 | Is any delegation of ATS justified and acceptable? (If yes, refer to Delegated ATS Procedure).  | N/A |
|      | N/A   |     |
| 2.16 | Is the airspace design of sufficient dimensions with regard to expected aircraft navigation performance and manoeuvrability to contain horizontal and vertical flight activity (including holding patterns) and associated protected areas in both radar and non-radar environments?  | YES |
|      | <p>This will formally be confirmed by the acceptance of the OSC. However, as this TDA complex has been proposed by an experienced operator which is used to organising TDAs in this particular environment, CAA Airspace Regulation's expectation is that the TDAs have been sized appropriately and proportionately for the intended operation. The upper limit of the TDA complex is 200-500ft above the intended operating level of the UAS, and operations are intended to remain at least 1 mile inside the lateral limits of the TDAs. Approval of the OSC is a condition for any NOTAMs activating the TDA being approved.</p> <p>Due to the number of different platforms that they are proposing to fly to, the number of TDA sectors means that the structure is slightly complex. The sponsor responded to this issue being highlighted by one stakeholder by indicating that the flights will be planned for times when helicopter activity is low. The sponsor will ensure TDA activation requests and NOTAMs are published at least 24 hours in advance of any planned flights and any requested third-party notification is complete.</p> <p>There was no concern raised from identified stakeholders about the complexity of the TDA complex and a similar complex was submitted, but not used, in this area by the Sponsor previously.</p> |     |
| 2.17 | Have all safety buffer requirements (or mitigation of these) been identified and described satisfactorily (to be in accordance with the agreed parameters or show acceptable mitigation)? (Refer to buffer policy letter.)  | N/A |
|      | The internal buffer within the TDA is sufficient (subject to OSC approval) to contain the activity. There are no additional buffer requirements. The structure lies solely in class G airspace not adjacent to other structures. The TDA has been routed to avoid windfarms, where practical, and other oil platforms that are not the subject of this operation.   |     |
| 2.18 | Do ATC procedures ensure the maintenance of prescribed separation between traffic inside a new airspace structure and traffic within existing adjacent or other new airspace structures?  | YES |

|      |  |     |
|------|--|-----|
|      | The TDA in within Class G airspace and activated by NOTAM; DACS provided by Aberdeen (Anglia Radar).   |     |
| 2.19 | Is the airspace structure designed to ensure that adequate and appropriate terrain clearance can be readily applied within and adjacent to the proposed airspace?  | YES |
|      | The TDA complex is between SFC and 1300ft AMSL for use by an RPAS. The vast majority of the TDA is over the sea and there are no terrain issues between the take-off point and the coast.  |     |
| 2.20 | If the new structure lies close to another airspace structure or overlaps an associated airspace structure, have appropriate operating arrangements been agreed?   | N/A |
|      | The proposed structure traverses a TMZ associated with offshore windfarms. The UAS is Mode S transponder equipped with altitude information and the sponsor is working with Aberdeen (Anglia Radar) on provision of a DACS and a dedicated squawk. |     |
| 2.21 | Where terminal and en-route structures adjoin, is the effective integration of departure and arrival routes achieved?  | N/A |
|      |  |     |

| 3.  | Supporting resources and communications, navigation and surveillance(CNS) infrastructure  | Status |
|-----|---|--------|
| 3.1 | Is the evidence of supporting CNS infrastructure together with availability and contingency procedures complete and acceptable? The following are to be satisfied:  |        |
|     | <ul style="list-style-type: none"> <li><b>Communication:</b> Is the evidence of communications infrastructure including RT coverage together with availability and contingency procedures complete and acceptable? Has this frequency been agreed with AAA Infrastructure?</li> </ul>   | YES    |
|     | A DACS will be provided by Anglia Radar. In the event of loss of communication or a fault identified with the transponders the same procedures apply to all classification of airspace and it will instigate a return to base. Anglia Radar will be notified immediately. Anglia Radar also have the ability to request a return to base in the event that they identify a transponder failure. These procedures are detailed |        |

|     |   |     |
|-----|---|-----|
|     | within the Operations Manual which forms part of the OSC.   |     |
|     | <ul style="list-style-type: none"> <li><b>Navigation:</b> Is there sufficient accurate navigational guidance based on in-line VOR or NDB or by approved RNAV-derived sources, to contain the aircraft within the route to the published RNP value in accordance with ICAO/ Eurocontrol standards? For example, for nav aids, has coverage assessment been made, such as a DEMETER report, and if so, is it satisfactory?</li> </ul> | N/A |
|     | This will be a low altitude Class G operation over the sea, not reliant on any ground-based navigation aid. The aircraft itself uses GNSS capability to ensure that it remains within the TDA and procedures are in place if the navigation capability of the aircraft is diminished.   |     |
|     | <ul style="list-style-type: none"> <li><b>Surveillance:</b> Radar provision – have radar diagrams been provided, and do they show that the ATS route/airspace structure can be supported?</li> </ul>  | N/A |
|     | The operation is utilising a low altitude, small and slow-moving airborne platform operating in Class G airspace. Aberdeen (Anglia Radar) will provide a DACS to other aircraft that wish to cross a portion of the activated TDA, once the RPAS has left that section of the TDA.  |     |
| 3.2 | Where appropriate, are there any indications of the resources to be applied, or a commitment to provide them, in line with current forecast traffic growth acceptable?  | YES |
|     | Aberdeen (Anglia Radar) have indicated that they are content to provide the DACS in their response to Flylogix's engagement on the proposed TDA.  |     |

| 4.  | Maps/charts/diagrams  | Status |
|-----|---|--------|
| 4.1 | <p>Is a diagram of the proposed airspace included in the proposal, clearly showing the dimensions and WGS84 co-ordinates?</p> <p>(We would expect sponsors to include clear maps and diagrams of the proposed airspace structure(s) – they do not have to accord with aeronautical cartographical standards (see airspace change guidance), rather they should be clear and unambiguous and precisely reflect the narrative descriptions of the proposals.)</p> | YES    |
|     | The sponsor provided stakeholders with a suitable chart that depicted the TDA. WGS84 coordinates were provided to stakeholders and a draft AIC has been provided to describe the final proposal.  |        |



|     |   |     |
|-----|---|-----|
| 4.2 | Do the charts clearly indicate the proposed airspace change?  | YES |
|     | Yes.  |     |
| 4.3 | Has the change sponsor identified AIP pages affected by the change proposal and provided a draft amendment? | YES |
|     | A draft AIC has been submitted in part 5 of their submission.   |     |
| 4.4 | Has the change sponsor completed the WGS84 spreadsheet and submitted to the CAA for approval?               | N/A |
|     | There is no requirement for the trial sponsor to meet ADQ compliance for an AIC.                            |     |

| 5.  | Operational impact   | Status |
|-----|--|--------|
| 5.1 | Is the change sponsor's analysis of the impact of the change on all airspace users, airfields and traffic levels, and evidence of mitigation of the effects of the change on any of these, complete and satisfactory?<br>Consideration should be given to: | YES    |
|     | a) Impact on IFR General Aviation traffic, on Operational air traffic or on VFR General Aviation traffic flow in or through the area.  | YES    |
|     | The engagement indicates the sponsor has adequately considered the effects on traffic flow and sought mitigations where appropriate  |        |
|     | b) Impact on VFR Routes.   | N/A    |
|     | No VFR routes have been identified by the sponsor.   |        |

|     |  |     |
|-----|--|-----|
|     | c) Consequential effects on procedures and capacity, i.e. on SIDs, STARs, holds. Details of existing or planned routes and holds.  | N/A |
|     | There are no consequential effects on procedures and capacity.   |     |
|     | d) Impact on airfields and other specific activities within or adjacent to the proposed airspace.  | YES |
|     | All organisations involved in serving the platforms are aware and were part of the engagement phase. They are content with the arrangements proposed.  |     |
|     | e) Any flight planning restrictions and/ or route requirements.  | N/A |
|     | Nil  |     |
| 5.2 | Does the change sponsor consultation material reflect the likely operational impact of the change?   | YES |
|     | <p>The material used included relevant information to reflect the likely operational impact including a good quality chart extract, co-ordinates of the proposed structures, details on DACS provision and the fact that the TDA would only be activated for 10 flights during the 90-day period.</p> <p>The sponsor engaged with airspace users (oil and gas helicopter operators and other operators in the area, GA, SAR), NATS, MOD via DAATM and local airfields/flying clubs on safety and operational viability and have provided evidence in support of their engagement activities. The sponsor engaged directly with individuals at the organisations by emailing them and following up, as required by telephone, followed up by a confirmatory email. Within the engagement materials, the sponsor explained how feedback can be submitted and invited stakeholders to provide detail on any potential impacts of the proposal on their activities and requested suggestions as to possible mitigations. Overall, the sponsor has achieved meaningful two-way engagement with aviation stakeholders.</p> |     |

| Case study conclusions – to be completed by Airspace Regulator (Technical)  |  | Yes/No |
|---|--|--------|
| Has the change sponsor met the SARG airspace change proposal requirements and airspace regulatory requirements above? |  | YES    |

|  |
|--|
|  |
|--|

| RECOMMENDATIONS/CONDITIONS/PIR DATA REQUIREMENTS  | Yes/No |
|---|--------|
| <p>Are there any Recommendations which the change sponsor <b>should try</b> to address either before or after implementation (if approved)? If yes, please list them below.</p>   | NO     |
| <p><b><u>GUIDANCE NOTE:</u></b> Recommendations are something that the change sponsor <b>should try</b> to address either before or after implementation, if indeed the airspace change proposal is approved. They may relate to an area in which the change sponsor is reliant upon a third party to actually come to an agreement and consequently they do not carry the same 'weight' as a Condition.</p>  |        |
| <p>Are there any Condition(s) which the change sponsor <b>must fulfil</b> either before or after implementation (if approved)? If yes, please list them below.</p>  | YES    |
| <p><b><u>GUIDANCE NOTE:</u></b> Conditions are something that the change sponsor <b>must fulfil</b> either before or after implementation, if indeed the airspace change proposal is approved. If their proposal is approved, change sponsors <b>must observe</b> any condition(s) contained within the regulatory decision; failure to do so <b>will usually</b> result in the approval being revoked. Conditions should specify the consequence of failing to meet that condition, whether that be revoking the ACP or some alternative.</p> <p>Sponsor should ensure that any TOIs /LOA are assigned prior to commencement of flying. Approval of the OSC is a condition for any NOTAMs activating the TDA being approved.</p> |        |
| <p>Are there any specific requirements in terms of the data to be collected by the change sponsor for the Post Implementation Review (if approved)? If yes, please list them below.</p>   | YES    |

***GUIDANCE NOTE:*** PIR data requirements concern any specific data which the change sponsor ***must*** collate post-implementation, if indeed the airspace change proposal is approved. Please use this section to list any such requirements so that they can be captured in the regulatory decision accordingly.

Any impact on stakeholders and ANSP providing the DACS should be logged.

### General summary

The Sponsor has presented a temporary airspace structure that is safe, proportionate, and not impactful to other airspace users. Impact was mitigated significantly by provision of DACS by Aberdeen (Anglia Radar) and further measures such as sharing flying schedules with other local commercial operators. It is apparent that, due to the location being wholly over the sea, other aviation stakeholders do not anticipate major impact.

It is recommended that this TDA is approved with the conditions stated above.

### Comments and observations

| Operational assessment sign-off                                       | Name                                 | Signature  | Date         |
|---|--------------------------------------|------------|--------------|
| Operational assessment completed by<br>Airspace Regulator (Technical) | AR Technical Regulator<br>[REDACTED] | [REDACTED] | 6 March 2024 |
| Operational assessment approved by<br>Manager Airspace Regulation     |                                      |            |              |
| Manager Airspace Regulation Comments:                                 |                                      |            |              |

| Head AAA   | Name | Signature | Date |
|--|------|-----------|------|
| Operational assessment conclusions approved by Head AAA                          |      |           |      |
| Head AAA Comments:   |      |           |      |
| Group Director Safety and Airspace Regulation Group (GD SARG) comment / Decision | Name | Signature | Date |
| Operational assessment conclusions approved by GD SARG                           |      |           |      |
| GD SARG Comments and Decision:   |      |           |      |

**Level 2 ACP [please delete as applicable]**

| Operational assessment sign-off                                    | Name | Signature | Date |
|--|------|-----------|------|
| Operational assessment completed by Airspace Regulator (Technical) |      |           |      |
| Principal Airspace Regulator comment / Decision                    | Name | Signature | Date |

|   |            |            |            |
|---|------------|------------|------------|
| Operational assessment conclusions approved by Principal Airspace Regulator | [REDACTED] | [REDACTED] | 12/03/2024 |
| Principal Airspace Regulator Comments and Decision: PASSED with conditions  |            |            |            |