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Title of Airspace Change Proposal	BEYOND VISUAL LINE OF SIGHT (BVLOS) REMOTELY PILOTED AIR SYSTEMS (RPAS) OPERATIONS IN EGD 128 - EVERLEIGH
Change Sponsor	DIO SD Training
SARG Project Leader	
Case Study commencement date	16 November 2017
Case Study report as at	24 November 2017
File Reference	20171116-Operational Assessment BVLOS UAS EG D128

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 Project Leader's efficient Project Management it may be useful that each question is also highlighted accordingly to illustrate what is: resolved Green not resolved Amber not compliant Red as part of the AR Project Leader's efficient project management.

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1.	Justification for change and “Option Analysis”	Status
1.1	Is the explanation of the proposed change clear and understood? Yes, the sponsor has clearly explained proposal to include UAS BVLOS as an approved activity within EG D128.	YES
1.2	Are the reasons for the change stated and acceptable? Yes, the sponsor has clearly explained that the military are increasing their use of BVLOS UAS and that there is an associated need to properly train those persons who will be operating these systems. In addition the sponsor has stressed the specific reasons why it has been deemed necessary to accommodate UAS BVLOS within EG D128; namely to co-locate the operational training areas with the ground school training facility to realise efficiencies in their training system. Secondly, it would enable training on larger BVLOS UAS from an austere site.	YES
1.3	Have all appropriate alternative options been considered, including the ‘do nothing’ option? Yes. The sponsor considered 3 options and concluded that due to concurrent military activity within the SPTA (including advanced plans to relocate some rotary wing aircraft to the SPTA), the location of infrastructure (including training school facilities and runway surfaces) and the training efficiencies that would be realised, they have opted to propose that BVLOS UAS be an authorised activity within EG D128.	YES
1.4	Is the justification for the selection of the proposed option sound and acceptable? Yes – see 1.3	YES

2.	Airspace Description and Operational Arrangements	Status
2.1	Is the type of proposed airspace clearly stated and understood? Yes, the proposal does not require any changes to airspace design.	YES
2.2	Are the hours of operation of the airspace and any seasonal variations stated and acceptable? Yes, the sponsor has indicated that the requirement to operate UAS BVLOS will not exceed a total of 16 weeks per year. When conducting the activity the upper level of EG D128 will be increased to either 2500ft or FL 80 dependent on the size of UAS being used. The temporary increase in the upper level of the Danger Areas will be promulgated by NOTAM and local ANSPs informed through the extant process used by SPTA operations.	YES

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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
	Yes, all adjacent airspace structures impacted by the proposal are either part of the SPTA Danger Area complex or military aerodromes. The only exception is the Thruxton ATZ, the boundary of which is approximately 1.5nm from the boundary of EG D128. The Sponsor met with representatives from Thruxton aerodrome and provided written evidence that all parties were satisfied that the use of BVLOS UAS would not have any adverse effects on aircraft operating from Truxton.	
2.4	Is the supporting statistical evidence relevant and acceptable?	YES
	Yes, the sponsor has clearly demonstrated that EG D128 is occasionally activated above the normal upper limit of 1400ft to cater for extant military activity. The sponsor has confirmed that the additional activations above the normal upper level will be based on actual requirement rather than need and won't exceed 16 weeks per year.	
2.5	Is the analysis of the impact of the traffic mix on complexity and workload of operations complete and satisfactory?	YES
	Yes, the MoD is responsible for the separation of military aircraft within the active Danger Areas. The Sponsor has articulated the safety measures in place to cease UAS operations should an aircraft inadvertently penetrate EG D128.	
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
	Yes, DIO SD TRG provided copies of LoAs with LACC, the Police and Filleton Manor. These LoAs articulate airspace access arrangements and therefore do requie amendment as a result of this proposal.	
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 sponsor carried out to resolve any conflicting interests?	YES
	The only other aviation activity that is conducted within the confines of EG D128 is military sponsored and internally deconflicted. See 2.3 regarding the proximity of Thruxton aerodrome. The Sponsor has engaged with all published gliding clubs that are within 20nm of EG D128 and provided written evidence that the occasional increase in the upper level of EG D128 will not adversely affect their gliding activity. There is one private aircraft operator based within D128 at Fittleton. SPTA has an extant LoA with the individuals operating out of this site which contains procedures and agreed routing. Due to its location within the Danger Area, the operator's activity is covered by Byelaw SI1965/1327 under the Military Lands Act 1892 and Air Navigation Order Sect Para 74 (3) whereby the operators must adhere to the conditions and procedures therein.	

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2.8	Is the evidence that the Airspace Design is compliant with ICAO SARPs, Airspace Design & FUA regulations, and Eurocontrol Guidance satisfactory?	N/A
	N/A – there is no change to the airspace design.	
2.9	Is the proposed airspace classification stated and justification for that classification acceptable?	N/A
	N/A – there is no change to the airspace classification.	
2.10	Within the constraints of safety and efficiency, does the airspace classification permit access to as many classes of user as practicable?	YES
	Yes, the airspace classification remains Class G and the SPTA DACS will be extended to include EG D128 when the upper level is increased to FL80. A DAAIS is available H24. The proposal has considered access to the airspace for the emergency services and priority flights. SPTA have existing arrangements to cease military activity to enable them to transit the SPTA Danger Area complex.	
2.11	Is there assurance, as far as practicable, against unauthorised incursions? (This is usually done through the classification and promulgation)	YES
	The increase in the upper level of EG D128 to cater for the BVLOS UAS operations will be promulgated by NOTAM. In addition the Danger Area Air Ops Staff have access to Secondary Radar Surveillance and are scheduled to have primary radar cover of the Danger Area in August 2018. This will enable the airspace to be monitored during BVLOS UAS activity to safeguard against unauthorised incursions. In addition SPTA Air Ops often receive warnings from Boscombe Down ATC of approaching unknown traffic.	
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?	N/A
	N/A – EG D128 sits within Class G uncontrolled airspace.	
2.13	Are appropriate arrangements for transiting aircraft in place in accordance with stated commitments?	YES
	Yes, SPTA will extend a DACS to incorporate EG D128 when the upper level is temporarily increased to FL 80.	
2.14	Are any airspace user group's requirements not met?	NO
	No, the sponsor has engaged with airspace user groups within the vicinity of EG D128 and all have indicated that this proposal will not adversely affect their operations.	

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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 structure 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?	N/A
	N/A – there is no change to the airspace structure.	
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).	YES
	Yes, the Sponsor has considered the Safety Buffer policy for airspace design and has set a maximum Danger Area upper limit of FL80 for BVLOS UAS operations. This restriction provides separation from the lower limit of P2 (FL105) of 2500ft and therefore incorporates a safety buffer into the procedures for BVLOS UAS operations within EG D128.	
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 MoD remains responsible for separation of military aircraft with EG D128 and the adjoining SPTA Danger Area complex. SPTA have extant arrangements with both civil and military aerodromes in the vicinity of EG D128.	
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?	N/A
	N/A	
2.20	If the new structure lies close to another airspace structure or overlaps an associated airspace structure, have appropriate operating arrangements been agreed?	YES
	The introduction of BVLOS UAS operations within EG D128 does not require any changes to the extant operating arrangements other than those stated at 2.17.	
2.21	Where terminal and en-route structures adjoin, is the effective integration of departure and arrival routes achieved?	N/A
	N/A	

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3.	Supporting Resources and 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: ▪ Communication: 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? N/A. There is no change to extant communications infrastructure required as a result of this proposal.	N/A
	▪ Navigation: 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? Eg. Nav aids – has coverage assessment been made eg. a DEMETER report, and if so, is it satisfactory? N/A.	N/A
	▪ Surveillance: Radar Provision – have radar diagrams been provided, and do they show that the ATS route / airspace structure can be supported? Yes, SPTA Air Ops have access to secondary radar surveillance to monitor the airspace. The proposal states that they will also have access to primary radar cover in August 2018.	YES
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 growths acceptable? Yes, see 3.1.	YES

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4.	Maps/Charts/Diagrams	Status
4.1	Is a diagram of the proposed airspace included in the proposal, clearly showing the dimensions and WGS84 co-ordinates? (We would expect sponsors to include clear maps and diagrams of the proposed airspace structure(s) – they do not have to accord with AC&D aeronautical cartographical standards (see CAP725), rather they should be clear and unambiguous and reflect precisely the narrative descriptions of the proposals. AC&D work would relate to regulatory consultation charts only). N/A, there is no proposed change to the airspace.	N/A
4.2	Do the charts clearly indicate the proposed airspace change? N/A, there is no proposed change to the airspace.	N/A
4.3	Has the Change Sponsor identified AIP pages affected by the Change Proposal and provided a draft amendment? Yes, the only AIP change required is to ENR 5.1 to include BVLOS UAS in the remarks column.	YES

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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? Consideration should be given to: a) Impact on IFR GAT, on OAT or on VFR general aviation traffic flow in or through the area.	YES
	The sponsor has considered the impact to all airspace users; engaging with local GA units and aviation sporting organisations to consider the impact to their operations. They have placed restrictions on the operating limits of BVLOS UAS to ensure that there is no interaction with GAT and they have considered the method of promulgating the temporary increase to the upper level of EG D128. The proposed mitigations are either extant due to the current military activity conducted within the Danger Area or designed to remove the hazard – namely restricting the upper limit to FL 80 and therefore build in a vertical safety buffer between BVLOS UAS activity and GAT. The sponsor has also articulated that the airspace will be activated up to 2,500ft for small UAS (>20Kg) for a total of 8 weeks in the year and up to FL 80 for large UAAS (<20Kg) for a total of 8 weeks per year; thereby limiting the impact to GA further by capping the length of time that EG D128 can be activated above 1400ft to cater for BVLOS UAS operations.	
	b) Impact on VFR Routes.	N/A
	N/A. There is no change to existing arrangements for VFR routes as a result of this proposal.	
	c) Consequential effects on procedures and capacity, ie on SIDS, STARS, holds. Details of existing or planned routes and holds.	N/A
	N/A. The procedural restrictions within the proposal separate BVLOS UAS activity from GAT.	
	d) Impact on Airfields and other specific activities within or adjacent to the proposed airspace.	YES
5.2	Does the Change Sponsor Consultation letter reflect the likely operational impact of the change?	N/A
	N/A. The Sponsor engaged with local aviation organisations all of whom concluded that the proposed change would not adversely impact	

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	their operations. The proposal does not alter the airspace design or the current permitted levels of activation in accordance with the AIP ENR 5.1. Furthermore the Sponsor provided adequate evidence that EG D128 has been activated above the routine upper limit of 1400ft in the recent past. Therefore the CAA agreed with the Sponsors assessment that no formal consultation was required.
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6.	Economic Impact	Status
6.1	Is a provisional economic impact assessment to all categories of operations and users likely to be affected by the change included and acceptable? (This may include any forecast capacity gains and the cost of any resultant additional track mileage). Due to the lateral dimensions of EG D128 the estimated maximum track distance required to navigate around the Danger Area is 8nm. The Sponsor has stated that the Danger Area will be activated with an upper level of 2500ft for a maximum of 8 weeks per year and activated with an upper level of FL 80 for a further 8 weeks. Therefore, due to the probability and negligible impact of temporary increase of the upper limit of EG D128, the economic impact is considered negligible.	YES

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Case Study Conclusions – To be completed by SARG Project Leader	Yes/No
Has the Change Sponsor met the SARG Airspace Change Proposal requirements and Airspace Regulatory requirements above?	YES
Yes.	

Outstanding Issues		
Serial	Issue	Action Required
1	Nil.	
2		

Additional Compliance Requirements (to be satisfied by Change Sponsor)	
Serial	Requirement
1	EG D128 is not to be activated with an upper limit exceeding FL80 for BVLOS UAS activity.
2	As articulated in the formal change proposal, EG D128 shall not be activated for longer than at total of 16 weeks for BVLOS UAS activity per year from 1 April to 31 March.
3	DOI SD TRG is to record each occasion that EG D128 is activated for BVLOS UAS stating the duration and maximum upper limit.

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Recommendations	Yes/No
Is the approval of the SoS for Transport required in respect of the Environmental Impact of the airspace change?	NO
No	
Is the approval of the MoD required in respect of National Security issues surrounding the airspace change?	NO
No	

General Summary

The Sponsor has clearly articulated the need to facilitate the use of BVLOS UAS within EG D128, namely to realise training efficiencies and to make use of the most appropriate runway surfaces within the SPTA. The proposal caps the vertical extent of EG D128 at FL 80 for BVLOS UAS operations to negate the need to apply the Safety Buffer Policy for Airspace Design. DIO SD TRG engaged with local aviation stakeholders to consider the potential impact that the addition of BVLOS UAS activity within the airspace may have. All responses indicated that this proposal would not adversely impact their operations. The AIP ENR 5.1 currently facilitates the occasional activation of EG D128 to a maximum vertical extent of 50000ft. The sponsor has articulated that the airspace will be activated up to 2500ft for small UAS (>20Kg) for a total of 8 weeks in the year and up to FL 80 for large UAAS (<20Kg) for a total of 8 weeks per year. The time limitation specified in the proposal is considered within the scope of the phrase 'occasional' stated in the AIP.

Comments & Observations

Nil.

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Operational Assessment Sign-off/ Approvals	Name	Signature	Date
Operational Assessment completed by:	 AR Case Officer		24 November 2017
Operational Assessment approved:	Stu Lindsey Mgr AR		24 November 2017
Mgr AR Comments: No comment.			