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## **FREEDOM OF INFORMATION DISCLOSURE**

### **UNMANNED AERIAL VEHICLES**

#### **1) INTRODUCTION - THE FREEDOM OF INFORMATION REQUEST**

In November 2009, Kent Police received a Freedom of Information request from the Guardian newspaper, requesting the following information;

*'All documents and correspondence held by Kent Police relating to the potential use of Unmanned Autonomous Systems (UAS).*

*'correspondence, including emails and letters, written between Kent Police and BAE Systems.'*

This request had been sent to several forces involved in the South Coast Partnership, a project to explore the potential of unmanned aerial vehicle technology in a variety of civil applications, including policing.

Assistant Chief Constable Allyn Thomas of Kent Police is the portfolio holder for this area of business for the Association of Chief Police Officers (ACPO) as part of the ACPO Air Support Working Group. Consequently, ACC Thomas was ideally placed to provide information for this request, as the central point via which any relevant information was likely to have passed.

The Freedom of Information team contacted the applicant in November and advised him of the above. It was explained immediately that there was a good deal of information likely to be held that could be relevant to his request, but that it would be necessary to consider the public interest in the release of information where disclosure may adversely affect Law Enforcement or the legitimate Commercial Interests of third parties such as BAE systems, or because other exemptions may apply to the information. Nevertheless the Force was confident that a good deal of information would be suitable for disclosure and the journalist was invited to visit Kent Police to receive the information during a meeting with ACC Thomas, where he might also have the opportunity to ask any questions about the project. This meeting occurred on 15<sup>th</sup> January 2010.

A quantity of information was provided to the applicant, prior to and following the meeting, and all of this information is included within this disclosure document. The information has been edited into date order and so far as possible duplications of information, such as repeated strings of e-mail conversations, have been deleted in the interests of clarity.

## 2) REDACTED OR REFUSED INFORMATION

It became apparent that it would be necessary to redact or refuse some limited information from the documents. Firstly, it was necessary to redact the names and specific contact details of certain individuals under section 40(2) of the Freedom of Information Act (Personal Information) where those individuals were/are not employees of public authorities or where the individual was at a sufficiently junior level in a public authority that they might reasonably expect that their details would not be disclosed. However, where relevant their roles within their organisations remain included, as do general business addresses and some employees of other organisations have not objected to disclosure of their names.

The documents necessarily considered the application of vehicles currently employed in a military context. Furthermore, the potential uses of such technology for surveillance purposes in the fight against terrorism is obvious. As a consequence, it has been necessary to remove or redact some of the information because it relates to security agencies that are exempted from the Act under section 23(1), or could otherwise prejudice national security as outlined in section 24(1).

When a public authority refuses to provide certain information, the applicant is entitled under section 1(1) to receive a notice that states a) the fact of the refusal, (b) specifies the exemption in question and states why the exemption applies. However, section 17(4) of the Act, which covers refusal notices, also provides that in circumstances where the provision of an explanation would itself disclose exempt information, the requirement to provide the explanation at 1(1)(c) does not apply.

To explain this further, in normal circumstances, the refusal notice would explain which exemption applied to which redaction, and where possible, why this is the case. However, in regard to these documents, to provide details of which exemption applied to which part in all cases would provide a context that could itself risk the disclosure of exempt information, and so we are unable to specify this. For the same reason, while some of the exemptions have required that we apply a public interest test to determine whether the exemptions should be maintained, those considerations cannot be released. However, wherever it is reasonable to do so, exemptions, and changes to exemptions, have been explained in footnotes. Please note that in all cases, the number of characters shown does not necessarily correspond with the number of characters redacted.

Please note that Kent Police are unable to confirm nor deny that any further information is held that relates to exempt security agencies or is information that otherwise could prejudice national security, by virtue of the provisions of section 23(5) and 24(2) of the Freedom of Information Act 2000. Kent Police have determined that, in all the circumstances of this case, the public interest where it is applicable in maintaining the exclusion of the duty to neither confirm nor deny outweighs the public interest in confirming whether or not information is held.

Added to the above, it would not be fair to other countries to disclose any information relating to the use of such technology abroad, and this would be likely to prejudice relations between the United Kingdom and those countries, thereby engaging the exemption at Section 27(1)(a).

Kent Police thank the applicant for his ready appreciation of the need to apply these exemptions.

### 3) THE INTERNAL REVIEW

Some further information was originally refused as we were advised that to disclose the information would adversely impact upon the commercial interests of BAE systems. The applicant disputed the application of this exemption and an internal review was carried out to reconsider whether it was necessary to maintain the exemptions.

It was determined that although some information contained within the documents would harm the commercial interests of BAE, who were in every case the originators and the copyright holders of the exempted material, not all of the information could be exempted under the commercial interests exemption, as for example, some of the information was already in the public domain or could not otherwise prejudice those interests.

It also became apparent that BAE had originally provided the information with an expectation of confidence, and that at that time Kent Police had entered into a non-disclosure agreement with the company.

Although it is recognised that it is not possible for a public authority to 'contract out' of its legal responsibilities under the Freedom of Information Act, it is clear that BAE systems did provide the information with a reasonable expectation of confidence and that they feel the information has the quality of confidence in as much as disclosure would diminish the value of the information to the company. However, the non-disclosure agreement did contain clauses that outlined that some information, for example that which was already in the public domain, or was released subsequent to the agreement, would no longer be bound by the contract.

Consequently, BAE systems were requested to examine the exempted material in order to identify precisely which information would harm their interests; was provided with an expectation of confidence, and was still bound by the agreement. After examination of the information, BAE consented to the disclosure of a quantity of the information contained in the previously exempted documents, although in their view some information remained unsuitable for disclosure.

It must be borne in mind that the principal public interest in the disclosure of this information centres around the openness and accountability of public authorities and any intended use of this type of equipment by those public authorities, and not necessarily upon the capabilities of equipment under development by private concerns such as BAE. Kent Police consider that the material that has been disclosed more than sufficiently serves the principal public interest as outlined above.

In the main, the information that has been withheld concerns the specifications and capabilities of BAE products (and products by BAE's partners), and information concerning user requirements on projects where release would benefit other companies wishing to compete in the same marketplace. Kent Police concur that the remaining redacted information either constitutes a trade secret or would genuinely be contrary to the legitimate commercial interests of BAE as a third party. Where the public interest test applies, we have determined that in all circumstances the public interest in withholding the information outweighs any public interest in disclosure. Therefore the section 43 exemption is maintained, although it is extended to include (where applicable) section 43(1) as well as the previously applied 43(2).

Further, disclosure of the remaining exempted information would amount to an actionable breach of confidence. Therefore, the exempted information from the documents at appendices 1,2 and 3, are also to this extent exempt under the absolute exemption at section 41(1)(a) & (b) of the Freedom of Information Act 2000 (Information Provided in Confidence).

Kent Police thank BAE systems for their diligent and openhanded cooperation with the review process.

### **IMPORTANT NOTE**

Readers of this Freedom of Information Disclosure should be aware that where documents or information contained within are subject to copyright by any party, the restrictions of copyright remain in place and are passed to the recipient of this document. Therefore, none of the information contained therein should be reproduced without permission of the copyright owners.

## **4) THE SOUTH COAST PARTNERSHIP PROJECT**

This workstream is only indirectly a Kent Police project, in that it has links with existing work being carried out within the Force with regard to the provision of Air Support Services. At this time the goal is only to explore the possibilities presented by such devices. No significant or identifiable funds have been expended in pursuing the project and no intentions to employ this technology exist at this time, meaning that no plans or requests for funding have been presented to the Kent Police Authority.

Since 2007, Kent Police have been exploring collaboration opportunities with other Forces, in particular Essex Police, to improve efficiencies and reduce expenditure in certain business areas as part of the 2015 project. One such example is that Kent Police have an agreement to use the Essex Police helicopter to deal with incidents and operations.

However, although helicopters have been constantly demonstrated as extremely useful, even vital to policing operations, they are also highly expensive and have an environmental impact, not simply in terms of fuel exhausts but also as regards noise pollution.

At a national level, the ACPO Air Support Working Group are keen to examine alternatives to the current arrangements for the provision of aerial policing services. ACC Thomas of Kent Police is exploring the possibilities presented by UAVs as part of his ACPO portfolio.

It is clear that there is justifiable public concern about the level of surveillance in our society. However, the ever-changing challenges of modern policing also require the exploration of innovative solutions. Some information has already been released into the public domain in the early stages of the project by BAE systems' press office.

Although elements of the media and groups with a particular interest in civil liberties have chosen to focus upon the surveillance aspects of these devices, and to use terminology such as 'spy planes' to describe them, this technology is capable of being employed in a number of other imaginative ways that could be highly beneficial in a civilian role.

The potential for the use of such devices for surveillance purposes is obvious. However, any such use is already subject to regulation and inspection by appropriate bodies such as the Office of Surveillance Commissioners.

Of more interest to the police service are the benefits that such devices could bring in the fight against numerous other varieties of modern crimes and offences, including environmental offences, thefts of farm equipment and illegal immigration and trafficking offences. Further to this, such devices could also be used more effectively than a helicopter for purposes such as traffic monitoring during long periods, and for public safety and security monitoring during large-scale public events, such as the 2012 Olympics.

Kent Police feel that the disclosure of these documents will inform the public more accurately and completely than the presentation these devices have received thus far in the media. Kent Police are committed to openness and transparency and it has been our intended position from the outset of this request to disclose as much information as possible in the public interest. ACC Thomas' reply to the Guardian newspaper is included below.

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#### **ACC Allyn Thomas' response to the Guardian Article (Jan 2010)**

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**ALLYN THOMAS  
ASSISTANT CHIEF CONSTABLE (HR AND CORPORATE COMMUNICATIONS)**

The Editor  
The Guardian

Direct Line: 01622 652603  
Fax: 01622 652009  
E-mail: acc-pt@kent.pnn.police.uk

Date: 25 January 2010

Dear Sir,

I would like the opportunity to correct some factual inaccuracies in recent media reports of Kent Police's involvement with Unmanned Aerial Systems.

Kent Police has examined the technological possibilities of these systems in partnership with a number of other forces and government agencies through the South Coast Partnership. We have not committed any money to this, made any decision about its use nor committed to any future use of this technology and indeed this technology is not yet licensed to fly in the UK by the Civil Aviation Authority (CAA).

This project is not new and has been reported publicly since 2007. However, any reports that we plan to use such Unmanned Aerial Systems are simply untrue.

Yours faithfully,

Allyn Thomas.

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## 5) THE DISCLOSED DOCUMENTS

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### Memorandum (January 2007)

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To: Chief Officers' Tuesday Afternoon Meeting  
From: ALLYN THOMAS ASSISTANT CHIEF CONSTABLE (SPECIALIST OPERATIONS)  
Date: 2<sup>nd</sup> January 2007  
Subject: **UNMANNED AERIAL VEHICLES (UAV'S)**

We are due to bring back to Planning in April a further paper looking at the feasibility of the force procuring Air Support in the form of a helicopter.

At the same time as developing that proposal we have been exploring alternatives. A promising line of development concerns UAV's. These are the pilotless planes much in evidence in military settings.

We have met with BAE Systems and subject to any observations, intend to engage in some development work with BAE whose product should come to market in stages over the next two years.

The BAE Herti System is a fully autonomous small aeroplane. That is to say it takes off, flies around and lands without the direct control of a pilot or person on the ground. The plane is the size of a small glider and can stay aloft for up to 29 hours.

The promise that such a system offers is very low running costs, i.e. no crew and very few support staff and as a result pounds rather than thousands of pounds an hour to fly.

The developmental work we will engage in concerns identifying the range of functions it can perform, for example coastal patrol to identify illegal channel crossings, surveillance applications – as a military offshoot the plan is inaudible and almost invisible, traffic enforcement on problem roads as well as all the more conventional air support applications.

It is likely that we will be part of a several force grouping working with BAE. This would include forces who operate helicopters and fixed wing aircraft. Many forces are soon to replace their helicopters and given the decline both in Home Office grants and force budgets such technology may be very timely.

I am also keeping the ACPO lead Chief Constable McWhirter informed of developments (and his successor when announced).

The cost to us of taking part in this work will be the small amount of staff time involved in describing our potential operational requirements and benefits.

With your support I will press on with the project. This seems beneficial whatever the outcome of the discussion in April Planning.

Allyn Thomas.

## **Visit Agenda (MAY 2007)**

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### **VISIT BY BAE SYSTEMS TO INTERVIEW STAKEHOLDERS RE\_ UAV'S**

#### **PROPOSED AGENDA**

Date	Time	Stakeholders	Roles	Venue
16 <sup>th</sup> May 2007	11.30	Superintendent Paul Brandon Chief Inspector John Frayne Sergeant David Hall	Public Order, Critical Incidents, Major Events Traffic Enforcement Air Support	Coldharbour - Maidstone
	14.00	D/Superintendent David Gladstone D/Superintendent David Spink	Major Crime Surveillance	Kent Police HQ, Sutton Road, Maidstone, Kent, ME15 9BZ
17 <sup>th</sup> May 2007	10.00	DCI Robbie Graham DCI Andrew Lyttle	Supervising Frontiers	Kent Police Bouverie House Bouverie Road West Folkestone Kent, CT20 2RW *

\* Not Dover

NB. ACC Thomas does not need a specific appointment but will be at Coldharbour during the morning of 16<sup>th</sup> May 2007 so will probably have the opportunity to say hello etc., then.



## **E-Mail from ACC Thomas to BAE Systems (August 2007)**

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**From:** Allyn THOMAS ACC 11490  
**To:** Andrew.Mellors@baesystems.com  
**CC:** GRANSDEN PSE 53656, Sonya; WATSON INSP 7470, Richard  
**Date:** 23/08/07 10:06  
**Subject:** HERTI

Andrew I have a note from my colleagues Richard Watson saying that you are in touch and that we will assist in completing the story board. It sounds like this is going well, are you happy with our support? I am away next week but either Richard Watson or my staff officer Sonya Gransden will assist as they can.

I will be discussing our engagement with my chief officers colleagues on the 4th of September so we don't need any material for that. The next Police Authority meeting will be early in November so that's an easy date to get something ready for.

I see we have another meeting set for the 26th September. Sonya will be in touch and sort out a more convenient venue such as near Heathrow.

Regards,

Allyn

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Item No. 2

## **KENT POLICE AUTHORITY**

MINUTES of the 61<sup>st</sup> meeting of the Kent Police Authority, held at Kent Police Headquarters, Sutton Road, Maidstone Kent on 12 September 2007

### **4. Air Support**

The Authority received a report, which set out the case for having more formalised Air Support capability in Kent and presented the recommended options of the joint Force/KPA Air Support working group balancing capability with financial constraints.

The papers were discussed at length, members were extremely supportive and identified Air Support as a key component of collaborative work.

Members noted the report and unanimously agreed to the recommendations proposed by Mr Salt and seconded by Mr Hill to:

1. Support Option 3 - to invest in Essex Air Support capability
2. Delegate authority to the Budget Review Group to consider the revenue funding and to explore medium and long term planning for renewal/replacement of air support equipment
3. Support a bid to the Home Office for 40% of capital set up costs
4. The Air Support group continues to meet and examine at contractual/insurance arrangements and establish criteria for a full and comprehensive evaluation.



### **Unmanned Aerial Vehicles**

Unmanned Aerial Vehicles (UAVs) have been used for a number of years in a military operational environment. Technology has advanced considerably over the past few years and it now recognised there is an opportunity to bring this technology into the civilian market.

ACC Thomas has been in consultation with BAE Systems in relation to a proposal to set up a UK national project, which would help demonstrate a responsible approach to the early adoption of a UAV for operational duties over the next 5 years. The rationale for Kent's involvement is the maritime operational environment and close working with other enforcement agencies.

On 27th July 2007 a meeting was held to discuss the opportunities. Attendees included:

- Kent Police
- Border & Immigration Agency
- HM Revenue & Customs
- Representatives from BAE Systems

The approach was to be centred on a developed & shared understanding of the future operational requirements. The day had three clear objectives:

- Create a vision
  - Agree a shared vision for the potential future use of UAVs to carry out relevant operations over the English Channel.
- Propose a plan
  - Create a high level "Route Map" of how this vision might become a reality within a logical (and certifiable) timescale.
- Empower the plan
  - Jointly analyse the stakeholders who would need to be associated with the plan, the key requirements to empower the plan (e.g. resources, funding, permissions etc) and the actions that would need to be taken for the plan to be delivered.

Throughout the day the meeting discussed operational requirements, which were balanced against current technology and Civil Aviation Authority (CAA) flight restrictions. There are currently significant restrictions on licensing of such aircraft, however, with advances in technology these restrictions are expected to be eased over the next 2-3 years. At present the restrictions would inhibit use of such aircraft in urban and populated areas.

The meeting outlined an agreed vision:

The South Coast Consortia will be using UAVs for routine operational exercises over the English Channel by 2012. The use of these vehicles will be routine to the point that the Police will only "task" the vehicle and wait for the intelligence output gathered by the system to be delivered to the existing operational control environment."

In order to deliver the vision the meeting outlined a timeline of key decisions and milestones:

**2007:**

- Draft Customer Needs
- Stakeholder Analysis
  - Aspirations
  - Potential Funding
- Simulated Operational Environment
- Project Structure

**2008:**

- Project Launch
  - Communication Plan
  - Detailed Costing
  - Source Project Funding – including European Development Agency
  - Detailed Synthetic Environmental Model

**2009:**

- System Specification
- Further Project Funding – Partnership agreements
- Develop Operational Procedures
- Develop Business Model
- System Testing
- First System Available

**2010:**

- Prototype Testing
- Operational Training
- GA22 (Airship) Testing – In lieu of UAV to overcome CAA restrictions
- Production Procurement

**2011:**

- Flight Testing

**2012:**

- Full operational use

## Notes:

1. ACC Thomas will update ACPO colleagues of this project and then present to the KPA Joint Working Group for Air Support at the November meeting
2. Minimal initial funding required to scope project. Assistance of Kent Police TV Unit has been offered to BAE Systems to develop an operational storyboard video
3. BAE Systems are in consultation with other UK Police Forces to develop similar technology
4. The opportunity for Government and European funding is being explored by BAE Systems
5. It is recognised this technology is not seen as a replacement to traditional air support but as an opportunity to be at the forefront of development within the civilian market, particularly in the maritime and frontier operations environment

**Richard Watson****Inspector 2015 – Collaboration**

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\* The above document was referred to at a meeting of the Kent Police Authority (KPA) under the previously included 'item 2' dealing with Air Support issues in general, in particular arrangements to employ the Essex Police helicopter. However, the presentation was not formally or specifically delivered to the KPA.

## **South Coast Partnership Stakeholders Meeting (Oct 2007)**

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**29 October 2007 - Warton**

### **Attendees**

Andy Cole (AC)	HM Inspector	Border & Immigration Agency
Gill Armistead (GA)	Assistant Director	Border & Immigration Agency
Jon Dodman (JD)	Chief Inspector, Special Operations	Essex Police
Oliver Dismore (OD)	Home Office Aviation Advisor	Home Office / NPIA
Richard Watson (RWa)	Inspector	Kent Police
Sonya Gransden (SG)	Staff Officer to ACC Thomas	Kent Police
Andy Adamson (AA)	Unit Executive Officer	Merseyside Police
Ian Humphreys (IH)	Crime Reduction Inspector	Merseyside Police
Andy Mellors (AM)	Head of Civil Autonomous Systems	BAE Systems
Caroline Dolman (CD)	Delivery Manager SCP	BAE Systems
Mark Veevers (MV)	Requirements Manager	BAE Systems
Richard Sleeman (RS)	Senior Engineer	BAE Systems
Richard Williams (RWi)	Director Civil Autonomous Systems	BAE Systems
Rob Brockie	Business Development	BAE Systems
Billy Beggs	Concept Demonstrations Manager	BAE Systems

### **Agenda**

- Introductions
- Recap of concept and summary of progress
- Names and vision
- Direction
- Project planning and working structure
- Requirements

### **Key points from discussion**

#### **Operational**

- Further potential uses for a UAV system included preventing theft of/from cash machines, preventing theft of tractors and monitoring antisocial driving. The key advantage here will be in noticing unusual activity to enable enforcement action and being able to be quickly on the scene, and in the longer term monitoring and building up a picture of such activity. (AT)
- Part of the payload could be a commercial vehicle tracker device for tractors and cars (AA) and if that were the case it might be possible to obtain commercial funding for that item. (AT)
- The potential exists to offset some of the running costs by using 'downtime' in the air to conduct commercial work, eg mapping surveys.

#### **Certification**

- Newly issued FAA guidance suggests that flying over congested areas will be a bigger barrier to certification than flying in non-segregated airspace. (OD)

### **Business model**

- One of the main advantages of a UAV system is rapid deployment – in setting up an operating system or organisation we need to be careful not to negate that advantage by spreading bases too thinly and adding travel time. (AT)
- It will be important to set up working groups as soon as possible for discussion on developing business models (RWi)

### **Project/Direction**

- Agreed that both the group of stakeholders and the project we are undertaking will be referred to as the 'South Coast Partnership'. This is on the understanding that it does not exclude potential stakeholders who are not south coast based, and that the word partnership does not carry any legal connotations.
- Agreed that the wording for the SCP Vision Statement should be:

'From 2012 UAVs will be routinely used by border agencies, the police and other government bodies. These systems will be automated so that operators task the vehicles and receive the relevant imagery and intelligence. This product will be delivered to existing command and control systems.'
- Agreed that the SCP should have an Memorandum of Understanding between stakeholders to define aims, objectives and working structures etc. This will not be a legally binding agreement, but will ensure cohesion and eliminate any future confusion
- Agreed that the working structure for the project should include a top level steering group meeting every four months, supported by working groups meeting more frequently as required.
- A target for 2008 was proposed – to reach the stage of using a Jetstream for demonstrations (RWi)

### **Actions**

- Check that the name 'South Coast Partnership' is not already in use – **CD**  
[Complete – no obvious clashes found.]
- Circulate a briefing paper on Tyciant, Astraea and EDA – **RWi**
- Draft a Memorandum of Understanding (a non-binding agreement) for the SCP –**CD**
- Prepare a one-page press release for the police aviation conference, and circulate to stakeholders for comment/approval – **CD**
- Provide a briefing note to GA on European partners and funding – **RWi**
- Speak to Tyciant management to determine the relevant lead police force in Wales – **Rwi**

## E-Mail from ACC Thomas to CInsp Watson (Oct 2007)

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**From:** Jane BRAZIER PSE 52124  
**To:** WATSON INSP 7470, Richard  
**Date:** 16/10/07 10:50  
**Subject:** South Coast Partnership

Richard,

As discussed.

Some other suggestions, what do you think?

### The Vision

By 2012 UAV's will be routinely used by border agencies, the police and other emergency services. This will be so automated that operators simply task the vehicle and wait for the imaging and other intelligence to be gathered and delivered to the existing command and control systems.

### The Roles

Frontier Security  
Maritime Surveillance  
Harbour Security  
Road and Rail Monitoring  
Initial Assessments of incidents/damage  
Search and Rescue Support (Land or Sea)  
Event Security  
Communications Relay

Regards.

Allyn Thomas

**MEMORANDUM**

To: ACC Thomas  
Kent Police

Your Ref:

From: Ch Insp 821 Jon Dodman  
Special Operations  
Ext: 480606  
Date: 1<sup>st</sup> November 2007  
My Ref:

Use Of UAVs

Sir, at the meeting on Monday 29<sup>th</sup> October 2007, you asked me to consider uses for UAVs, here are my thoughts:

1. Aerial photography (events, RTCs, planning operations etc)
2. Monitoring of Traffic at large scale road closures
3. Surveillance of premises, vehicles etc
4. ANPR operations either to locate offenders or stolen vehicles
5. KSI reduction – via signage on trunk roads and publicity re aerial Gatso etc (this could help with our motorcycle KSI issues on country roads also)
6. [REDACTED]
7. Maritime security
8. Monitoring of incidents involving airborne threats eg. CBRN or large scale Hazchem incidents
9. [REDACTED]
10. Locating hydroponics sites
11. MISPER searches in open countryside

The opportunities are endless. As discussed, I see the UAV as a complement to, rather than a replacement for the helicopter.



**Jon Dodman**  
**Chief Inspector**  
Special Operations

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**E-Mail from PSE Gransden (ACC Thomas' staff officer) to ACC Thomas (Nov 2007)**

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**From:** Sonya Gransden  
**To:** THOMAS ACC 11490, Allyn  
**Date:** 02/11/07 08:49  
**Subject:** Press Release - UAVs

Sir,

BAE have sent us the following press release for comment, for use at the Police Aviation Conference next week:

\*\*\*\*

UNMANNED AIR SYSTEM PROJECT FOR SOUTH COAST FORMALLY LAUNCHED Unmanned aircraft could be used for police and coastal patrol work on Britain's south east coast from as soon as 2012, following the launch of new project that sees BAE Systems partnering with a range of government bodies. Although some trials of remote-controlled air vehicles have been carried out by police forces in Britain, this will be the first time that autonomous aircraft will be used by civil bodies in the UK. 2012 is the date currently accepted by ASTREA and other bodies concerned with the development and certification of UAVs as the earliest achievable date for UAVs to operate in controlled airspace. The project, called the South Coast Partnership, will see BAE Systems using its expertise in the field of fully autonomous unmanned air systems, or UAS, to work with its partners, including Kent Police, Essex Police and the Border and Immigration Agency to ensure UAS are introduced as efficiently and effectively as possible. Speaking at the launch of the South Coast Partnership, at the Police Aviation Conference 2007 currently taking place in the Hague, Andrew Mellors, Head of Civil Autonomous Systems at BAE Systems, said: "From 2012 fully autonomous unmanned air systems will be routinely used by border agencies, the police and other government bodies. These systems will be fully autonomous so that operators task the vehicles and receive the relevant imagery and intelligence direct to the ground control station in real time." UAS can undertake a range of tasks that are difficult or expensive for manned aircraft. With their long endurance and ability to operate in potentially hazardous environments, UAS offer real potential in the fields of maritime and coastline surveillance as well as showing broader potential for areas such as pipeline, plant and infrastructure surveillance.

About BAE Systems

BAE Systems is the premier global defence and aerospace company delivering a full range of products and services for air, land and naval forces, as well as advanced electronics, information technology solutions and customer support services. With 96,000 employees worldwide, BAE Systems' sales exceeded £15 billion (US \$27 billion) in 2006.\*<sup>\*</sup>On a pro forma basis, assuming BAE Systems had owned Armor Holdings Inc for the whole of 2006"

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Richard Watson has commented that they mention Essex Police specifically and therefore would you be happy for me to forward the press release onto C/I Jon Dodman/ACC Peter Lowton for their views?

I will also update Liz Dickens in case we asked for comment following the conference.

Regards,  
Sonya

PSE Sonya Gransden  
Staff Officer - ACC Thomas (Specialist Operations)  
Kent Police Headquarters  
Sutton Road, Maidstone  
Kent ME15 9BZ  
Tel: 01622 652265 (Ext. 19 2265)  
Mobile: [REDACTED]  
E-mail: [REDACTED]

## **Conference Notes (Nov 2007)**

### **Police Aviation Conference**

07 - 08 November 2007

World Forum Convention Centre, The Hague

### **Purpose**

- Launch the South Coast Partnership to the right audience
- Find and engage other useful stakeholders or interested parties
- If possible improve visibility for/of potential funding source

### **Attendees**

- Andy Mellors – BAE Systems
- Richard Watson – Kent Police
- Caroline Dolman – BAE Systems
- Andy Cash – BAE Systems
- David Waters – BAE Systems
- David Arrow – BAE Systems

### **Approach**

- Speaker presentation and associated Q&A on South Coast Partnership (purpose, requirements, programme etc) and on UAVs and their wider potential uses in the civil sector – Andy Mellors and Richard Watson
- Exhibition stand displaying SCP, Herti, Hero and Talisman. Data card handouts on SCP, Civil Herti, Hero and Talisman. SCP, Hero, Talisman and autonomous systems videos playing.
- BAE sponsored conference bags
- Press release launching SCP

### **Points of interest from conference presentations and subsequent discussions**

- None of the European police forces /Coastguards etc who presented (France, Germany, Italy, Sweden, Netherlands, Malta, Belgium) were aware of any move within their forces to introduce UAVs for general use. The view seemed to be that either it would be unacceptable or too difficult in the near future for safety reasons, or that it would be unaffordable to have a vehicle which could only do surveillance and not any of the other tasks carried out by existing air assets. All stated that they expected to wait for 2012 and see what the state of play was then – except for the German Cdr Gunter Carloff of the Federal Police, who did not believe that UAVs would come into general use any time soon.
- Ollie Dismore presented a clear picture of police aviation in the UK, both pros and cons. He spoke about the introduction of UAVs as an inevitable progression, and gave a summary of what his key requirements would be:

- - o Safe
  - o Cheap
  - o Quick to deploy
  - o All weather (especially wind)
  - o Long endurance
  - o Good image quality

He also gave a very good introduction to the SCP.

- Some air support units are very defensive about the possible introduction of UAVs, seeing them as a replacement for helicopters and thus a threat.
- The SCP presentation was very successful, generating a lot of interest and discussion – more so than any other presentation
- The presentation by Lt Col Martin Cauchi Inglott (CO Maritime Squadron, AF of Malta) led to a useful discussion and the opening up of a potentially excellent opportunity for HERTI to take part in the next FRONTEX operation based in Malta, against illegal migrants travelling from North Africa. If it can be arranged this would provide a perfect situation in which to demonstrate and test Herti's capability in a real operational scenario with significant similarities to the initial maritime surveillance scenarios that the SCP is working on.

### **Other contacts / Points of interest**

- A good contact was made with Nigel Lemon from Police Aviation Services, the company which operates a significant proportion of UK police helicopters, and which may be a potential service provider for operating a UAV pool.
- Various information was gathered from other exhibitors on technologies. Of these the one which could have the most direct application to the SCP was imaging enhancement software to track individuals, monitor crowd volume etc.

### **Conclusion**

Attendance at the event was definitely worthwhile overall, both in terms of a successful project launch and in terms of generating new opportunities – so the first two objectives were achieved, although there was no discussion on funding of any sort, so the third objective was not met.

However in this case an exhibition presence was probably of minimal value due to the limited potential for delegates to visit the stand and engage in discussion, so the second objective was not achieved to the degree we had hoped. The display usefully illustrated autonomy across land sea and air systems, but the hostility of some delegates (from both PAC and neighbouring Helipower), almost all of whom were connected with use of helicopters in civil or military arenas, meant that although they came to look they were reluctant to engage in discussion.

## E-Mail from BAE to ACC Thomas (Nov 2007)

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>>> "Williams, Richard J (UK Warton)" <Richard.J.Williams@baesystems.com> 24/11/07  
13:07:40 >>>

Allyn, Jane,

I have just realised that I don't have your telephone contact details in my blackberry. I hope this gets to you before tomorrow. Please see attached from our head of communications. It looks like the South Coast Partnership may be covered in this weeks Sunday times. The times have already contacted Gavin Foxall at the BIA, so you might want to talk to Gill? I believe Gavin planned to give a positive response. Let me know if there are any issues which I can help with? Richard Williams

---

Sent using BlackBerry

----- Original Message -----

From: Bunce, Andy (UK)  
To: Williams, Richard J (UK Warton)  
Sent: Fri Nov 23 16:40:42 2007  
Subject: SUNDAY TIMES - HERTI - SOUTH COAST PARTNERSHIP

### Activity Details

Subject: SUNDAY TIMES - HERTI - SOUTH COAST PARTNERSHIP

Activity Type: Telephone Call

Created By: Andy Bunce

Journalists: Abul Taher (The Sunday Times), +44 (0)20 7782 5000, abul.taher@sunday-times.co.uk

Clients: Military Air Solutions (Dept)

Press Officers: n/a

Activity Date: 23/11/2007

Activity Time: 15:45

Location: Warton

Department: Corporate Communications, Military Air Solutions

Notes: Abul Taher from the Sunday Times rang to follow-up on our South Coast Partnership press release issued on 7th November. He also had our HERTI Frontline Success release. He was asking about the generic tasks Herti could perform, which I gave him. He then wanted info on the specific tasks that the likes of the Kent Police were interested in - I advised him to speak direct to them. He then went on to ask about HERTI's capabilities which I again gave from the brochure material. I stressed on more than one occasion that the South Coast Partnership was very much in the early stages and was about looking at the potential of UAVs operating in such areas etc. He also repeatedly called HERTI a drone which I corrected him on but I'm not sure he got it. I also have a concern that he was trying to go down the 'big brother is watching you' route and again I tried to steer him away from this by talking about generic roles such as border patrols, reconnaissance, surveillance, homeland security etc. He wouldn't commit as to whether he would run a story this week-end - I think a lot will depend on what if anything he gets from the likes of the Kent Police.

**Text of E-mail from Caroline Dolman, Ministry of Defence, to attendees of South Coast Partnership stakeholder's meeting (19<sup>th</sup> Dec 2007)**

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All,

The next meeting of the South Coast Partnership will be on Thursday 28 February 2008, 1000-1500. Kent Police have kindly offered to host the meeting, so it will be held at their headquarters. The address is:

Kent Police Headquarters  
Sutton Road  
Maidstone  
Kent  
ME15 9BZ

A map is attached. Further details of the room, and agenda etc, will be sent nearer the time.

Could you please let me know whether you will be attending or not so that we have an idea of numbers.

Also attached are the following:

- \* A brief update on progress with the project since the last meeting in September
- \* A summary report on the Police Aviation Conference, where the SCP was publicly launched
- \* A copy of the presentation about the SCP given at the PAC
- \* A copy of the press release made at the time of the PAC, for those who have not yet seen it
- \* Copies of the two datacards handed out to interested parties at the PAC and subsequently at other events and meetings
- \* Copies of the two articles about the SCP that have appeared recently in the press

In addition, if you would like to receive a copy of the video we used at the PAC, which shows a day in the life of a UAV over the South Coast, could you please let me have an address to post it to. If you would like several copies to give to other people as well, just let me know.

thanks, and Merry Christmas!

Caroline

Caroline Dolman

Civil Autonomous Systems  
Warton Aerodrome  
W427D  
Preston  
Lancashire  
PR4 1AX  
[caroline.dolman@baesystems.com](mailto:caroline.dolman@baesystems.com) <<mailto:caroline.dolman@baesystems.com>>

## **South Coast Partnership Project Update (19 December 2007)**

---

Since the last meeting of the Partnership on 29 October:

### **Membership**

Two new members have been added to the Partnership: [REDACTED] and the Marine & Fisheries Agency (MFA).

So the list of member organisations currently stands at:

Kent Police  
Essex Police  
Merseyside Police  
Borders and Immigration Agency  
HMRC  
MFA  
[REDACTED]

In addition, Greater Manchester Police and the West Midlands Fire Service have both expressed interest and are discussing with us the possibility of becoming part of the project.

### **Requirements capture**

Work is ongoing to develop a detailed picture of the requirements of each partner and to amalgamate them into an overall requirement. Some initial discussions have taken place, and more will be scheduled with other partners for the new year. The first draft of a document defining the operational scenario for maritime surveillance is being circulated for comment and amendment. A round table discussion including practitioners from all partner organisations will be arranged for around February.

### **Project Launch**

The Partnership was launched publicly at the Police Aviation Conference in the Hague at the beginning of November with a joint presentation by Richard Watson and Andy Mellors. The event was very successful, and the Partnership generated a lot of interest. See conference report for full details.

### **Police Audience**

On 17 January Richard Watson will be giving a presentation on the SCP to the ACPO Tech and Training Sub Group of the main Air Ops Working Group. We understand that the Air Ops Working Group, which meets on the same day, will be setting up a separate working group specifically to look at the various UAV related projects, of which SCP is one, taking place with police forces around the UK.

## **Media**

A press release, which was circulated to stakeholders at the time, was made to coincide with the project launch at the beginning of November. Over the following weeks there has been increasing media interest, with an article appearing in Kent on Sunday (11 Nov) and one in the Sunday Times (02 Dec.) In addition Richard Williams was interviewed for BBC South Today (04 Dec) as part of an article on border controls, and Richard Williams and Allyn Thomas were interviewed on BBC Radio Kent (06 Dec.) On 07 Dec Richard was also interviewed by Look North West (TV) and by Lancashire FM. Other partners have also received enquiries from both the media and the public.

As time goes on and more interest in the project is generated (as we expect will happen) it will become increasingly difficult to remain fully consistent in our responses across the Partnership. We are therefore considering how best to address this potential problem.

## **Dates for your diary**

Thurs 28 February - Stakeholder meeting – Kent Police HQ, Maidstone

Wed 25- Thur 26 June – ParcAberporth Unmanned Systems 2008 – Herti demonstration

Wed 25 **or** Thurs 26 June (TBC) – Stakeholder / Steering Group Meeting – ParcAberporth

Mon 14- Sun 20 July – Farnborough International Airshow 2008 – details TBC

## **Other Events**

We are in the process of deciding which exhibitions and conferences during 2008 will be appropriate forums for showcasing the South Coast Partnership and extending its potential. Likely candidates so far include:

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
12-Mar	13-Mar	HOSDB Exhibition	RAF Halton, Aylesbury, Bucks.
24-Jun	26-Jun	ACPO and APA conference & exhibition	Liverpool
25-Jun	26-Jun	ParcAberporth Unmanned Systems	ParcAberporth, Cardigan, Wales
14-Jul	20-Jul	Farnborough International Airshow	Farnborough, Hampshire
Summer date tbc		Homeland Security Europe	Brussels
05-Nov	06-Nov	Police Aviation Conference	Olympia, London

Any comments on these or suggestions for additional or alternative events would be much appreciated. Please also let me know if you would be willing to attend any of these events in order to jointly promote the Partnership.

Caroline Dolman  
Delivery Manager, SCP  
BAE Systems

## **Forwarded E-mail String re SCP (January 2008)**

The following information is an e-mail discussion that has been included in total. However, for the sake of clarity it has been re-arranged into chronological order, rather than the form in which it was originally held. The e-mails via BAE and NPIA were forwarded to Kent Police.

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### **E-Mail from BAE to National Police Improvement Agency (NPIA)**

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-----Original Message-----

**From:** "Dolman, Caroline (UK) (MOD)" <[Caroline.Dolman@baesystems.com](mailto:Caroline.Dolman@baesystems.com)>  
[<mailto:Caroline.Dolman@baesystems.com>]

**Sent:** 07 December 2007 14:51

**To:** Dismore Oliver

**Cc:** [Andrew.Mellors@baesystems.com](mailto:Andrew.Mellors@baesystems.com)

**Subject:** South Coast Partnership

Ollie,

I'm just in the process of setting up the next meeting for the SCP, which will be the senior steering group. Would you be free on 28 February for a meeting in Kent? Allyn Thomas has kindly offered to host the meeting to save everyone having to come all the way up to Warton. Alternative dates we have at the moment are 12 or 14 Feb, if you can't manage 28th?

Also, I gather that you have discussed with Andy before the possibility of arranging a meeting with Bernard Hogan-Howe, and of briefing him jointly on the SCP? Would you still be able to help us with that please? Obviously it would be very useful if we could make sure that the SCP is firmly on his agenda, get his views, answer any questions etc.

thanks very much

Caroline

Caroline Dolman

Civil Autonomous Systems  
Warton Aerodrome  
W427D  
Preston  
Lancashire  
PR4 1AX

[caroline.dolman@baesystems.com](mailto:caroline.dolman@baesystems.com)

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## **Reply from NPIA to BAE**

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>>> Dismore Oliver <[Oliver.Dismore@npia.pnn.police.uk](mailto:Oliver.Dismore@npia.pnn.police.uk)> 07/12/07 15:51 >>>  
Hi Caroline,

28 Feb is fine - should be nicely jet-lagged post HAI Heli-Expo in Houston! 12 and 14 are also doable at the moment.

There is certainly value in exposing BH-H to the project, in due course, especially as he is already warm to UAV innovation. The formal route for new capabilities is through the ACPO Tech and Training Sub Group (ACPO T&T) of the main Air Ops Working Group (AOWG), chaired by Ch Supt Dick Rothwell from West Yorkshire - next meeting am 17 Jan 08 in Liverpool.

I have copied Ch. Insp. Jon Roy (BH-H's ACPO Portfolio Staff Officer) on this e-mail and would suggest the best way forward would be for Kent's regional representative (which is Essex, I believe) or Richard Watson (as a co-opted presenter) to bring the project to wider attention at the Tech & Training meeting. If Jon Roy is free, it would be useful if he attended the SCP meeting as well, as BH-H's eyes and ears in this area. Sorry to separate the Police and commercial interests but it is important to get ACPO T&T buy-in to the concept, which will benefit all in the long run.

Downstream, BH-H's diary permitting, we can then set up a briefing for AOWG & T&T interested parties - ideally at RAF Woodvale (Merseyside Police helicopter base) where HERTI can be seen in context.

I hope that helps - please feel free to discuss further.

Regards

Ollie

**Captain Ollie Dismore**  
Home Office Aviation Advisor

T: 020 7147 8444  
[REDACTED]

---

## **E-Mail from CInsp Watson to ACC Thomas (with regard to the communications above)**

---

>>> Richard WATSON INSP 7470 12/12/07 10:56 >>>  
Sir

The attached E mail is from Ollie Dismore to BAE Systems. In summary it asks Ollie's view on making representations to Mr Hogan-Howe about the proposed new technology. Ollie has suggested taking the concept and South Coast Partnership to the Tech and Training Group for Air Support. This group is due to meet on 17th January 2008.

I would value your views, there is a meeting of the SCP planned for February, it may be more appropriate to wait until after this meeting to present it to the national stage as we may be a little more advanced in the planning.

Richard

---

**(Reply from ACC Thomas to CInsp Watson - undated)**

---

Richard,

I think it would make sense for you to take the model and the partnership to the Jan tech meeting. This would be a police - police discussion. I don't think that causes the SOP any problems but it would move it along in the police world a bit.

Allyn Thomas.

---

**E-mail from CInsp Watson to ACC Thomas**

---

**From:** Richard WATSON INSP 7470  
**To:** THOMAS ACC 11490, Allyn  
**Date:** 07/01/08 13:35  
**Subject:** Fwd: RE: South Coast Partnership

Sir

Thank you. I have been in contact with the secretary of the Tech and Training Group and have asked for a slot on the agenda. The meeting has now been slipped back to 18th February. This meeting is then followed by the Main Air Support meeting chaired by Mr Hogan-Howe.

I will come and speak with you over the next two weeks to discuss what you would like included.

Richard

---

## **Internal E-Mail (4<sup>th</sup> Feb 2008)**

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-----Original Message-----

From: Jane BRAZIER PSE 52124  
To: WATSON INSP 7470, Richard <richard.watson@kent.pnn.police.uk>

Sent: 04/02/2008 13:46:23

Subject: UAV's + Helicopters

Richard,

I guess you have seen the other e-mail about the tethered balloon that the Highways Agency wish to buy to work with us. Looks like fun.

To see if this will work we need to get some video of what distance can be seen from hovering 400, 600 and 800 feet above the ground. Could we get the Essex helicopter to hover at Junction 10, near Sellindge over the M20 half way between 10 and 11 and over Junction 11.

If they would then take a video to show what distance can be seen that would assist in the business case for the balloon.

[REDACTED]

\*

Allyn Thomas.

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## **E-Mail Reply (5<sup>th</sup> Feb 2008)**

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**From:** Richard WATSON INSP 7470  
**To:** BRAZIER PSE 52124, Jane  
**Date:** 05/02/08 07:17  
**Subject:** Re: UAV's + Helicopters

I will arrange the footage to be taken over the next week.

[REDACTED]

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\* All information exempted from this document is exempt under section 27(1)(a) as it refers to the interests of another state outside the UK and may if disclosed prejudice those interests.

## **Agenda for SCP Stakeholders Meeting (Feb 2008)**

### **South Coast Partnership Meeting of Stakeholders**

**Thursday 28 February 2008, 1000-1500**  
**Kent Police HQ, Maidstone**

#### **Agenda**

1000	Welcome and introductions	ACC Allyn Thomas, Kent Police
1015	2008 planning	Richard Williams, BAE Systems
1100	ACPO Technology & Training meeting feedback	Insp Richard Watson, Kent Police
1130	Operational Analysis and role development	Mark Veevers, BAE Systems
1215	Lunch	
1245	SCP business model	Richard Williams, BAE Systems
1330	Project Morrigan overview	[REDACTED]
1415	ASTRAEA and Tyciant progress report, and 2008 opportunities for SCP	Richard Williams, BAE Systems
1500	Close and depart	

#### **Expected attendees**

[REDACTED]	Graham	Ford-Keyte	[REDACTED]
[REDACTED]	Gary	Owen	MFA
[REDACTED]	Allyn	Thomas	MFA
[REDACTED]	Richard	Watson	Kent Police
[REDACTED]	John	West	Kent Police
[REDACTED]	Ollie	Dismore	Kent Fire Service
[REDACTED]	Nigel	Stockdale	Home Office / NPIA
[REDACTED]	Phil	Crabtree	Borders and Immigration Agency
[REDACTED]	Samantha	Harrison	[REDACTED]
[REDACTED]	John	Lees	BAE Systems
[REDACTED]	Andy	Mellors	BAE Systems
[REDACTED]	Mark	Veevers	BAE Systems
[REDACTED]	Richard	Williams	BAE Systems

#### **Unconfirmed attendees**

Jon	Dodman	Essex Police
Keith	Hulbert	HMRC
Andy	Adamson	Merseyside Police
Ian	Humphreys	Merseyside Police
Jonathan	Roy	Merseyside Police

## **Notes of SCP Stakeholders Meeting (Feb 2008)**

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## **South Coast Partnership Stakeholders Meeting**

28<sup>th</sup> February 2008

Kent Police Headquarters, Sutton Road, ME15 9BZ

### **Attendees**

Nigel Stockdale (NS)	Assistant Director	Border & Immigration Agency
Jon Dodman (JD)	Chief Inspector, Special Operations	Essex Police
Oliver Dismore (OD)	Home Office Aviation Advisor	Home Office / NPIA
Keith Hulbert (KH)	Maritime and Aviation Ops	HMRC
John West (JW)		Kent Fire & Rescue Service
Allyn Thomas (AT)	Assistant Chief Constable	Kent Police
Bryn Price (BP)	Staff Officer to ACC Thomas	Kent Police
Richard Watson (RWa)	Inspector	Kent Police
Andy Mellors (AM)		
Mark Veevers (MV)	Head of Civil Autonomous Systems	BAE Systems
Philip Crabtree (PC)	Requirements Manager	BAE Systems
Richard Williams (RWi)	Business Development Manager (UK)	BAE Systems
Samantha Harrison (SH)	Director Civil Autonomous Systems	BAE Systems
	Delivery Manager SCP	BAE Systems

### **Attachments**

- BAE Systems slides "20080228 presentation SCP stakeholder meeting RW & AM.ppt"
- Operational Analysis slides
- SCP Contacts List

### **Agenda**

- Welcome and Introductions
- Summary of SCP
- Project Morrigan Overview\*
- Progress so far
- Operational Analysis and Role development
- 2008 Planning
- Close and Depart

### **Status of Actions from Previous Meeting**

- Check that the name 'South Coast Partnership' is not already in use – **CD [Closed]** – no obvious clashes found.]
- Circulate a briefing paper on Tyciant, Astraea and EDA – **RWi [Closed]**
- Draft a Memorandum of Understanding (a non-binding agreement) for the SCP – **CD** [Ongoing action – approach discussed further at meeting and new action placed to review the Project Morrigan documentation]
- Prepare a one-page press release for the police aviation conference, and circulate to stakeholders for comment/approval – **CD [Closed]**
- Provide a briefing note to GA on European partners and funding – **RWi [Closed]**

- Speak to Tyciant management to determine the relevant lead police force in Wales – **RWi**  
[**Closed** Lead Police Force in Wales would be South Wales Police]

## Key points from discussion

### Project Morrigan Overview

- [REDACTED] gave a detailed brief on the Project activities including the recent Air Warfare Centre trials of BAE systems Hert1 in an operational theatre.
- [REDACTED]

### Progress so far

- SCP project was successfully launched at the Police Aviation Conference in The Hague on 7<sup>th</sup> Nov 2007. A joint presentation was given by Andrew Mellors and Richard Watson.
- This years Police Aviation Conference is being held in London Olympia and so it is expected that there will be a greater presence from UK police services. It was proposed that SCP should attend to provide an update on progress since the launch.
- The CAA was briefed in Feb 2008 on the SCP activities and now has a much better understanding of the relationship between SCP and other key programmes such as ASTRAEA.
- Richard Watson attended the technical training sub-group of the ACPO Air Support working group where it was successfully recommended that any future Air Support strategy should include consideration of UASs.
- ATC Ops Northamptonshire has been tasked with leading a working group to look into the Police's use of UAVs. Richard Watson will be the South Coast Partnership point of contact on this group.
- The 'South East Collaboration' was reported to have done some work to assess and compare the roles of Police Helicopters, Fixed Wing assets and UAVs. BAE Systems has also carried out some operational analysis work to look at strengths of roles for Helicopters and UAVs and assess how they can work together to provide the most efficient co-operation. It was proposed that the SCP should contact the South East Collaboration and request a brief on their work so that a joint comparison can be made with the BAE Systems activity.

**Action** OD to provide points of contact.

- Project Tyciant has recently received renewed impetus from The Welsh 1<sup>st</sup> Minister and the Welsh Assembly Government. Various communications in the last few days have confirmed their support to making Tyciant happen and an understanding that this needs to be in the timescales of the SCP. A further expression of interest will be submitted today.

### Operational Analysis and Role Development

- A draft SCP Operational Requirements document has been developed to capture the requirements for the 2 SCP maritime surveillance scenarios identified over the English Channel. The document is currently a result of discussions with Kent Police and the Border and Immigration Agency. **Action** SH to circulate the document for review.
- To develop the document further and to get it to a first issue, BAE Systems requested similar discussions with those agencies who have not already contributed. To assist in this process, RWi offered that BAE Systems would be happy to conduct wider stakeholder briefings within individual organisations. **Action** all to consider whether a wider stakeholder briefing would be of interest.

- As part of further discussions with agencies a further objective will be to collect any additional requirements to the maritime surveillance scenario and prioritise these for further detailed studies.
- M Veevers outlined the next steps for the operational analysis work which will include a sensor study to establish what sensor equipment is required to carry out the operations defined in the Requirement Document and understand the extent to which this capability currently exists.

## 2008 Planning

- The BAE Systems team now has John Lees in place who will be investigating and developing business models for civil UAS. **Action RWi** to ask John Lees to arrange to see both OD and AT to discuss.
- It was agreed that the SCP should consider again the need for a Memorandum of Understanding (or Terms of Reference document) between partners, particularly to ensure co-ordination of communications to the media and other key stakeholders. The way forward was agreed as:
  - Review the Morrigan document set for relevance to SCP. **Action JH** to release the Morrigan documents to SCP.
  - Develop a simple NDA that sets out the process for how the SCP partners will agree communications such as press releases. **Action SH**
- Events and shows were discussed to identify those in 2008 that may be relevant for SCP partners to attend or present at. BAE Systems identified 4 events (mainly air shows); of which Farnborough is a key focus in July 2008. Other potential events were suggested:
  - National ACPO conference. **Action RWa** to advise dates / venue for 2008
  - National Chief Fire Officers conference, May 2008
  - **Action SH** to create events list and circulate
- It was suggested that the next stakeholder meeting could be held during Farnborough air show from 14<sup>th</sup>-20<sup>th</sup> July.

## Summary of Actions

- Provide points of contact for the South East Collaboration – **OD**
- Circulate the Draft Operational Requirements document to all SCP participants – **SH**
- All Agencies to indicate if a wider stakeholder briefing on SCP from BAES would be useful to them - **All**
- Request John Lees to talk to OD and AT regarding business models – **RWi**
- Investigate release of the Morrigan documents into the SCP for review – **JH**
- Develop an NDA for SCP communications - **SH**
- Provide dates for the ACPO conference – **RWa** [Post meeting note: Conference is to be held on 24-26 June 2008 at the Arena and Convention Centre, Liverpool]
- Circulate an events list for SCP for review and addition of further relevant events – **SH**

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\* Some information concerning Project Morrigan, which is a project concerning the use of UAV technology in a military context, was originally redacted due to defence and national security concerns. However, the review has determined that some limited information concerning the existence, purpose and progress of Project Morrigan is available from press releases and other information on the BAE Systems website. Further information concerning the project remains exempt by virtue of section 26 (Defence).

**ALLYN THOMAS  
ASSISTANT CHIEF CONSTABLE (SPECIALIST OPERATIONS)**

John Aspinall B.Eng(Hons) Ceng MICE MIHT  
Traffic Operations Director  
South East  
Highways Agency  
Federated House  
London Road  
Dorking  
Surrey RH4 1SZ

Direct Line: 01622 652603  
Fax: 01622 652009  
E-mail: accco@kent.pnn.police.uk

Date: 3<sup>rd</sup> March 2008

Dear John,

I mentioned before some development work we have been doing with BAE Systems about the use of Unmanned Aerial Vehicles in a range of settings.

I enclose some promotional material they have produced around this and other products.

Are you interested in engaging with the South Coast Partnership as a potential future user of such aerial surveillance? Happy to discuss further. I must be due to buy you a coffee again soon!

Yours sincerely,

Allyn Thomas.

**Letter from ACC Thomas to The Times newspaper (April 2008)**

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**ALLYN THOMAS  
ASSISTANT CHIEF CONSTABLE (SPECIALIST OPERATIONS)**

The Editor  
The Times  
(via Fax)

Direct Line: 01622 652603  
Fax: 01622 652009  
E-mail: accco@kent.pnn.police.uk

Date: 24<sup>th</sup> April 2008

Dear Sir,

**Not for publication**

I write following your article in The Times last Saturday on the police use of unmanned aerial systems, to ensure you have accurate information for future reference on the background to and benefits of the project.

The partnership with BAE Systems involves not only the police, , but also includes organisations with whom we already work closely, such as the new UK Border Agency and the Maritime and Coastguard Agency. The Serious and Organised Crime Agency and other public sector partners are also interested in joining.

What attracts us all to the technology is that it can meet the needs of several partners at the same time. Thus a UAS flying over the Channel can look for maritime pollution, inappropriate fishing, smaller craft carrying prohibited goods, as well as crime prevention and counter terrorism security. There are clear public safety benefits, too, for example in locating missing people or those in difficulty on the cliffs, shoreline and sea. The relatively low cost per flying hour means that for some functions the UAS may offer much enhanced efficiency and value for money - particularly important for public sector organisations such as the police.

The technical capabilities of the equipment are well covered in the article, but I fear the agencies' intentions for its use may have been misunderstood given the comments by Shami Chakrabarti in response, I assume, to information put to her.

I am happy to provide further information should you return to this issue in the future.

Yours faithfully,

Allyn Thomas.

**Internal E-mail conversation– ACC Thomas to CInsp Richard Watson, (via Jane Brazier, ACC Thomas' P.A) (February 2009)**

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**Original Message from ACC Thomas**

>>> Jane BRAZIER PSE 52124 24/02/09 08:26 >>>

Richard,

Thank you for your help with ANPR.

On the airship, can we fix a date (no really!) for when it will be here. Then I could write out to a range of partners inviting them to come down and look at it and its operation?

If we had it for a week, we could do it at the end when we had something to show. Are we still ok to use this to link the equipment on the airship to the FCC?

On a different note, did the helikite even get off the ground - so to speak!

Allyn Thomas.

---

**CInsp Watson to ACC Thomas**

>>> Richard WATSON CH INSP 7470 26/02/09 10:09 >>>

Do you have CCTV on my office??? Your timing is uncanny...

I was due and have met with Martin Salmons this morning for our regular update.

The small helikite is up and running. It is held at present at Leybourne but will be based at Stamford,(J11 M20) or Farthing Corner so easily accessible to us. The contact is Martin or Chris Clifford (Ex Traffic PC) I have put a couple of pictures in the post to you to illustrate its use, I have to say the images are quite impressive. There is an amusing story around one of the pictures which I will explain in a note attached to it.

The larger version has been more problematic than was originally expected. However, there are now in a firmer position having developed the new camera set up and PTZ (How to remotely move the camera once in the air). Trials will be taking place at a secret location [REDACTED]\* to test the equipment. The delays have not been helped by the weather (not directly in flying the kite but diverting his resources to maintenance of the road network)

Martin will keep me informed as to how it is progressing and has invited me along to the trial at the end of March.

In order to ensure operational use of this equipment, when I take up my post in the FCC, I will arrange for a menu of equipment available through Martin which extends to mobile CCTV, portable signage and the helikite and the necessary communication to the potential users (RPU, TSU etc)

In relation to the Airship I am meeting with two people from BAE for a 'sensor study' on Tuesday 3rd March. We have been in conversation with CAA (through Paul Marrion from Essex Air Support) to propose the use and they are receptive to the idea although mindful of the need for the technical certification to be proven at the earliest stage. I will make enquires as to the stage of development on Tuesday and report back to you. Andy Mellors is fully aware of our eagerness to

show this to the partnership and anyone else who may be interested. The mandate from the national UAV group was gratefully received by Richard and Andy.

Richard

\* Exempt under Section 43(1) Commercial Interests (Trade secret)

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### Reply from ACC Thomas

From: Jane BRAZIER PSE 52124  
To: WATSON CH INSP 7470, Richard <richard.watson@kent.pnn.police.uk>  
Sent: 27/02/2009 09:46:28  
Subject: Re: Airship

Richard,

Lots of good progress! With you in the FCC you are perfectly placed to develop the sensor linkage into our systems

Do you know whether we have got the H.A. cameras linked into our network yet or is this something that traffic were doing?

Allyn Thomas.

---

### CInsp Watson to ACC Thomas

**From:** Richard WATSON CH INSP 7470  
**To:** BRAZIER PSE 52124, Jane  
**Date:** 27/02/09 09:56  
**Subject:** Re: Airship

Having spoken to Martin i don't believe it has been achieved. It may be subject to the return of the FCC to their building. I will continue to liaise with Martin and can work from within once in the FCC.

R

---

**Text of E-Mail Exchange Between Paul Marrion (Cambs, Essex and Suffolk Police Air Support) and Rick Newson/ Tony Eagles (Civil Aviation Authority), forwarded to CInsp Watson, Kent Police - on the subject of UAV licensing and permissions (Nov 2008 – March 2009)**

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**E-mail from Cambs, Essex and Suffolk Police Air Support to CAA (1)**

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**From:** Paul Marrion [mailto:[Paul.Marrion@essex.pnn.police.uk](mailto:Paul.Marrion@essex.pnn.police.uk)]

**Sent:** Tue 11/11/2008 11:45

**To:** Newson Rick

**Cc:** Richard WATSON T/CH INSP 7470; [andrew.mellors@baesystems.com](mailto:andrew.mellors@baesystems.com)

**Subject:** UAV Proposal [RESTRICTED]

**Classification:** RESTRICTED

Dear Rick,

Following our conversation of last week can I ask that you please consider and distribute as appropriate the following conceptual proposal in relation to the testing and possible future operational use, within a policing environment, of the GA22 UAV platform.

Following discussions with BAE Systems it has been identified that the GA22 may fulfil a useful operational policing function at large public events. In particular Essex Police are responsible for policing the Virgin (V) festival at Hylands Park just outside Chelmsford each August and it is perceived that the GA22 may have a role to play in such an event.

The GA22 is currently in the approval process for remote operation with a longer term objective for fully autonomous operations. It is possible that both of the above objectives could be tested, evidenced and progressed at the V event subject to relevant approval.

The general proposal is that the GA22 be tested, possibly at Boreham Airfield then again at the V Festival site prior to the actual event. If successful in testing then the GA22 be deployed operationally at the event itself under whatever constraints and controls are required under any approval.

I have been deliberately non specific above as I believe it is only correct to seek the views and guidance of the Civil Aviation Authority prior to any substantive proposal being drafted.

At this stage I have not discussed this with Essex Police senior management and would envisage doing so until the considered CAA view is known.

Best regards  
Paul Marrion  
Inspector/UEO  
Cambs, Essex & Suffolk Police  
Air Ops/Support Units  
01245 451564

## **CAA response to Cambs, Essex and Suffolk Police Air Support (1)**

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**From:** Newson Rick  
**Sent:** 12 November 2008 21:53  
**To:** Paul Marrion  
**Cc:** Eagles Tony; [REDACTED]  
**Subject:** RE: UAV Proposal [RESTRICTED]

Thanks Paul,

Tony Eagles has taken over from Chris Finnigan in the coordinating and setting of UAS policy within the CAA. Please give us a day or two to discuss this and we'll get back to you soonest. It may be best if we have a meeting, either at Boreham or here at Gatwick.

All the best, Rick

## **CAA response to Cambs, Essex and Suffolk Police Air Support (2)**

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**From:** Eagles Tony [<mailto:Tony.Eagles@caa.co.uk>]  
**Sent:** 13 November 2008 10:13  
**To:** Newson Rick; Paul Marrion  
**Cc:** [REDACTED]  
**Subject:** RE: UAV Proposal [RESTRICTED]

Paul, thanks for the inquiry. In the first instance I draw your attention to CAP 722 which gives good guidance and information for the operation of UAV's in the UK. This should give you a good steer towards such operations and the considerations and safety case that will need to be established along with all the other factors. The operation of a UAS cuts across most areas of the CAA but we can and will facilitate the process as best we can. There is also an ACPO UAS working group I believe who may also be developing useful information regarding the use of UAS by police units.

CAP 722:

<http://www.caa.co.uk/application.aspx?catid=33&pagetype=65&appid=11&mode=detail&id=415>

Will pass more information when we have had time to consider your proposal.

Regards

**Tony Eagles**  
Manager  
Flight Operations Policy (GA)  
Safety Regulation Group  
UK Civil Aviation Authority  
[REDACTED]

## E-mail from Cambs, Essex and Suffolk Police Air Support to CAA (2)

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**From:** Paul Marrion [<mailto:Paul.Marrion@essex.pnn.police.uk>]

**Sent:** 23 February 2009 15:21

**To:** Eagles Tony

**Cc:** [REDACTED]

**Subject:** RE: UAV Proposal [NOT PROTECTIVELY MARKED]

**Classification:** NOT PROTECTIVELY MARKED

Dear Tony,

There is a meeting of the South Coast partnership (UAV) on 3rd March. There is now an ACPO link into this group as you suggest below. Is there any further information you could provide at this time in order to update the group on the 3rd.

Best regards

Paul Marrion  
Inspector/UEO  
Cambs, Essex & Suffolk Police  
Air Ops/Support Units  
01245 451564

---

## CAA response to Cambs, Essex and Suffolk Police Air Support (2)

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**From:** Eagles Tony [<mailto:Tony.Eagles@caa.co.uk>]

**Sent:** 24 February 2009 10:20

**To:** Paul Marrion

**Cc:** Duncan George; [REDACTED]

**Subject:** RE: UAV Proposal [NOT PROTECTIVELY MARKED]

Paul I am sorry not to have responded before but have been waiting for some clarification from other departments and in particular with the progress of airworthiness certification for the GA22 which I know is still ongoing with the European Aviation Safety Agency (EASA).

I understand that there are still some issues with the airworthiness certification of the airship to be resolved and that this is ongoing between the company and EASA.

Operation of such a machine will require us to be satisfied that the operation can be undertaken safely and that any condition of the Permit to Fly has been met.

This will require the compilation of a safety case that would undoubtedly include such things as operating limitations, pilot experience and training, safety measures, actions in event of control

failure etc. Depending on the airspace requirements and proximity to other air users there may also be a need to operate within geographic restrictions and operation at night might be restricted or prohibited. Consideration for flying within proximity to persons, vehicles, structures and so on and necessary mitigation will need to be demonstrated.

Once you have developed your safety case and operational procedures, including the pilot training requirements and meeting any conditions set down in the Permit to Fly, then you should liaise with my colleague George Duncan for consideration of the application to operate this airship in the manner described.

Best regards

**Tony Eagles**

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### **E-Mail from Cambs, Essex and Suffolk Police Air Support to CInsp Watson, Kent Police**

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>>> "Paul Marrion" <[Paul.Marrion@essex.pnn.police.uk](mailto:Paul.Marrion@essex.pnn.police.uk)> 05/03/09 08:13 >>>

**Classification:** NOT PROTECTIVELY MARKED

Hi Richard,

The name at the CAA is George Duncan as below.

Regards

Paul Marrion  
Inspector/UEO  
Cambs, Essex & Suffolk Police  
Air Ops/Support Units  
01245 451564

---

### **E-Mail from CINSP WATSON to ACC THOMAS**

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**From:** Richard WATSON CH INSP 7470  
**To:** THOMAS ACC 11490, Allyn  
**Date:** 05/03/09 08:53  
**Subject:** Fwd: FW: UAV Proposal [NOT PROTECTIVELY MARKED]

Sir

George Duncan will be the recipient of the letter to CAA as discussed.

Many Thanks

Richard

---

**Letter from ACC Thomas to George Duncan, Civil Aviation Authority (March 2009)**

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**ALLYN THOMAS  
ASSISTANT CHIEF CONSTABLE (SPECIALIST OPERATIONS)**

Mr. George Duncan  
FOI(GA)  
FOD, SRG  
Aviation House  
Gatwick Airport South  
West Sussex RH6 0YR

Direct Line: 01622 652603  
Fax: 01622 652009  
E-mail: accco@kent.pnn.police.uk

Date: 11<sup>th</sup> March 2009

Dear Mr. Duncan,

I write to ask whether you might be able to assist me in a project I am developing with a range of public sector and commercial partners.

Perhaps I should start by saying who I am. As you can see I work in Kent Police and I am responsible for a range of police functions but in particular the policing of the Frontier, Marine Policing and the Special Branch. In addition to my role in force I am also the lead police officer for the Police Maritime Portal Zone which extends from Shoreham in East Sussex to Felixstowe in Suffolk. I am also a member of the South Coast Partnership, which is an association between the Police, UKBA, [REDACTED], the MCA and BAE Systems. The aim of the partnership is to develop a different model of air support using Unmanned Aerial Systems. Ultimately this might lead to the civil use of the Military 'drones' such as HERTI, used by the Military but in the shorter term we are more focussed on the use of lighter than air vessels such as the BAE GA22.

Clearly such a UAS has the potential to provide a far more sustainable and long lasting aerial platform on which to mount a range of sensors and equipment. Our initial interest was in monitoring the short sea channel crossing, though clearly this interest has developed after the terrorist attack in Mumbai. We also recognise that such a system also has considerable potential in the policing of major events, whether they be protests or the Olympics.

We have got to the stage where we want to test the integration of the sensor systems into police command and control applications but our progress is at present slow, given that such unmanned vehicles are unproven technology and need to be properly licensed by yourselves.

I write to seek your support in that there is rather more urgency in the work since Mumbai and we have a clear deadline of the 2012 Olympics. I would not in any way seek to interfere with the proper regulation of technology but rather offer you the assurance that this is a genuine developmental partnership that is keen to see progress in pursuit of objectives around the security of the national frontiers and related public goods.

Please let me know if I can provide any further information to assist with your regulatory process.

Yours sincerely,

Allyn Thomas.

c.c. C/Insp. Richard Watson

**E-Mail exchange concerning proposed visit by CC Hogan-Howe, ACPO portfolio holder for Air Support Services (March 2009)**

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**E-mail from BAE to SCP**

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>>> "Mellors, Andrew (UK)" < Andrew.Mellors@baesystems.com > 10/03/09 12:36 >>>

When: 20 April 2009 12:30-16:00 (GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London.

Where: Warton

Dear All

We now have a new date for Chief Constable Bernard Hogan Howe's visit to Warton to find out more about UAV's and the South Coast Partnership. We will agree an agenda in the next few weeks but suggestions are welcome. Allan / Richard / Ollie / Vaughan (/ACC Featherstone) - would you like to attend?

Yours sincerely

Andrew Mellors

Head of Civil Autonomous Systems

Mobile: [REDACTED]

BAE Systems (Operations) Limited

Registered Office: Warwick House, PO Box 87, Farnborough Aerospace Centre, Farnborough, Hants, GU14 6YU, UK

Registered in England & Wales No: 1996687

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**E-mail from PA to ACC Thomas to CInsp Watson**

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-----Original Message-----

From: Allyn THOMAS ACC 11490

To: WATSON CH INSP 7470, Richard < richard.watson@kent.pnn.police.uk >

Sent: 12/03/2009 09:30:45

Subject: Fwd: VIP Visit CC Hogan-Howe

Richard,

Are you going to this?

Regards.  
Jane.

---

**E-Mail reply from CInsp Watson to PA to ACC Thomas**

---

>>> Richard WATSON CH INSP 7470 12/03/09 10:06 >>>

I have accepted the invitation. Does Mr Thomas have any availability? This will be the perfect opportunity to bring UAVs to a national stage.

R

---

**E-mail from PA to ACC Thomas to CInsp Watson**

---

-----Original Message-----

From: Allyn THOMAS ACC 11490

To: WATSON CH INSP 7470, Richard <richard.watson@kent.pnn.police.uk>

Sent: 12/03/2009 10:20:34

Subject: Re: Fwd: VIP Visit CC Hogan-Howe

Richard,

He does have something already in the diary but I just need to check if it is something he needs to attend.

Regards.

Jane.

---

**E-Mail reply from CInsp Watson to PA to ACC Thomas**

---

From: Richard WATSON CH INSP 7470

To: THOMAS ACC 11490, Allyn

Date: 12/03/09 10:22

Subject: Re: Fwd: VIP Visit CC Hogan-Howe

Not necessarily needs to attend but his presence gives weight to what we are trying to do, in addition to what I can bring Mr T will speak around the CT dimension with such clarity

R

---

**E-Mail from Northants Police Inspector Vaughan Clarke to Home Office and ACC Thomas (July 2009)**

---

**From:** "Clarke Vaughan" <Vaughan.Clarke@northants.pnn.police.uk>  
**To:** "Alan Brooke" <Alan.Brooke@homeoffice.gsi.gov.uk>, "Allyn Thomas"  
**Date:** 05/07/09 13:39  
**Subject:** SoR for sub 7kg UAS

**Attachments:** SoR draft2.doc

Gentlemen

Please find attached the Statement of Requirement (SoR) final draft for sub 7kg UAS.

Please take a look at it prior to the steering group meeting. If there are no amendments required and the group agrees this at the meeting, the document can be published and disseminated to the industry.

Many thanks <<SoR draft2.doc>>

Vaughan Clarke

Inspector, Northern Area  
Northamptonshire Police  
[REDACTED]  
Mobex 6278

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## **Association of Chief Police Officers**



### ***Statement of Requirement (SoR) for small UAS for close air support to standard BCU operations***

## 1. Introduction

- 1.1 The Association of Chief Police Officers (ACPO) recognises that Unmanned Aerial Systems (UAS) represent an emerging tactic in the fight against crime and disorder.
- 1.2 ACPO also recognises that there are numerous policing requirements that could be serviced by UAS, and that no single airframe, software package or video downlink capability is likely to meet all of those requirements simultaneously. As a consequence, different SoR's will be issued to meet those operational demands.
- 1.3 This SoR is specifically aimed at the category of sub 7kg UAS, with a view to steering industry towards developing a suitable platform that will provide close air support, to officers on the ground, in a typical array of standard operational policing scenarios.
- 1.4 No document of this sort could possibly cater for every possible policing scenario, where the use of UAS could be a consideration, but what ACPO have tried to capture from the police community in producing this SoR is a common understanding of the features that a system should have in order to facilitate ease of use, safety, practicality, efficiency and operational effectiveness.
- 1.5 This document should not be read as a set of minimum standards. Instead it should be interpreted as a guideline in terms of considerations for what the technology should deliver. Forces are free to specify different criteria when procuring systems, dependant on their local needs, and industry is encouraged to continue to innovate and move beyond the technical capabilities laid out in this document.
- 1.6 Where criteria have been specified below, a practical example of a typical deployment has been given at Appendix A to illustrate the type of scenario where some of those criteria might be useful.
- 1.7 Where a criteria is defined, ACPO does not wish to be prescriptive in the technical solution for that, and where appropriate alternatives are available they may be considered equally acceptable.
- 1.8 UAS suppliers who can produce units that meet these specifications can apply for ACPO accreditation for those units. In order to achieve this, they will be expected to provide a unit for a suitable period of time, for testing, at no cost to the police or HOSDB.

Number	Criteria	Explanation
1	Easy launch capability	Any small police UAS will be expected to take off in a timely and straightforward manner.
2	Auto-tracking of operator	Upon launching the unit, it will be expected to communicate with, and monitor the GPS location of the operator at all times. The initial flight phase, as a default setting, will be for the unit to hover above (if rotary wing) or cone around (fixed wing) the operator at a fixed height selected by the operator. The unit will fly in this mode until further input from the operator.  Should the operator move, the unit will be expected to maintain a position immediately overhead, unless otherwise instructed.
3	Resilience to wind and weather	The unit will be expected to be operational in wind-speeds up to and including 25 knots. The unit will be expected to operate in light to moderate precipitation above 6°C, and in dry conditions down to -6°C.
4	Minimum flying time	The unit shall fly for a minimum of 45 minutes between battery

		changes	
5	Continuous operation	The unit shall have the capability to maintain a continuous airborne presence, other than when batteries are being changed. Sufficient batteries and charging capability (operational from a vehicle-based power source) shall be provided to enable this.	
6	Rotor protection	Rotary wing units shall have some means of preventing rotor strike. This can be in the form of a physical guard that prevents the rotors from hitting third party objects, such as a building or tree, or may be achieved by electronic sensors. In either scenario, where the unit encounters such an obstruction, it is expected that it will maintain flight.	
7	Auto-return to operator	The unit shall fly automatically to the last known GPS co-ordinates of the operator if it loses signal with the ground station, if its signal is jammed, or if the battery level falls to a critical level.	
8	GPS transmission	The unit will continue to broadcast its GPS location when grounded	
9	Audible location alarm	The unit will sound an audible tone and flash an LED or other light, when commanded by the operator.	
10	Bore sight identification	GPS	The software shall display to the operator the latest GPS position of the unit itself AND the GPS position on the ground (to a reasonable degree of accuracy) which represents the location that the camera is aimed at.
11	Altitude adjustments		The unit shall fly at a pre-set altitude, selected by the operator, in increments of 50 feet. It shall also be operable at any height between these flight levels upon command by the operator.
12	Camera Configuration		The unit shall be supplied with a digital colour video camera, with a minimum of 25x optical zoom, and a thermal imaging camera, to be interchangeable by the operator.
13	Camera control and autonomous flight.		The operator shall be able to remotely pan, tilt and zoom the camera assembly. Whilst the operator is so engaged, it is expected that the unit will maintain flight autonomously.
14	Microphone		The unit shall be fitted with a microphone, and be capable of broadcasting the audio signal to the operator on the ground.
15	Video downlink		The unit will be capable of broadcasting live video to the operator.
16	Digital Video Recorder		The unit shall record video to an on-board Digital Video Recording medium that contains no moving parts (e.g. video data card). The on-board video storage shall be of sufficient capacity to record the entire flight duration at the minimum level of compression (i.e. at the highest quality setting) and shall be accessible to hot-swap with a replacement medium, in a timely fashion, when replacing the power pack.
17	Operator Screen		The interface for the control of the unit, and viewing the live

		video stream shall be presented on a screen which is effective in bright sunlight (e.g. 1500 nits) or by the provision of other solutions that enable effective use in such meteorological conditions. Where solutions other than a bright screen are offered, they will not be acceptable if they significantly reduce the situational awareness of the operator – such as a hood that takes away the operator's peripheral vision.
18	Camera on Target	When aimed at a specific location on the ground, the camera will maintain its position irrespective of movements and adjustments in the pitch and roll of the airframe. It is vital, in terms of the effectiveness of such units, that video evidence is not compromised in court, because of the inability of the technology to maintain camera on target. Equally, it is essential from the operator's perspective that moving targets, such as a suspect on foot, are not lost because the FoV (field of view) of the camera is constantly moving relative to its horizon.
19	Transportation	When not in use the unit shall be transported in one or more ruggedised protective cases that can fit into the luggage area of a typical estate car or car-derived van.

## Appendix A

### A typical operational scenario

In the town of Sandford, Sgt Smith is on night shift, due to finish duty at 7am. Sandford is in an area not covered by a police air support unit, but the force does own a UAS which is deployed in a 'Traffic' vehicle based out of the Protective Services Command (PSC).

Sgt Smith's team has been allocated a task to effect the arrest of a local drug-dealer and prolific offender, Dale HOLLER who is wanted for failing to appear at Crown Court for Aggravated Burglary. HOLLER is violent, knows he is wanted and is likely to attempt an escape if challenged.

Sgt Smith has pulled together a team of four officers to undertake the arrest of HOLLER, at his home address of 68 Prospect Ave, Sandford. He has also requested the presence of a police dog & handler and the force UAS unit to provide close air support to the operation. A particular problem with the location of HOLLER's address is that it is very difficult to gain access to the rear of the premises. HOLLER is known to sleep in his clothes next to a window at the rear of the house and has escaped from the rear of the property on previous occasions over a flat roof and through adjoining gardens into an area of scrubland nearby.

The plan is that a rapid entry will be made through the front door of the property at 6am. At the same time, the UAS will be deployed to the rear of the property, with the camera trained on the rear of the house, so that if HOLLER does escape, he can be tracked from the air until such time as a dog handler and other units can be called in.

At 5am, the UAS operator, PC Ainge, arrives at the junction of Prospect Avenue and Main Road. The location is a typical urban scene with numerous dwellings, mainly 1930's semi detached. The junction consists of a T-Junction surrounded by large tri-angular shaped grass-covered areas about 20 metres across, and PC Ainge has identified this as the launch site for the UAS, which is a rotary-wing unit. At this time of the morning, the area is extremely quiet and the only thing moving, other than a few cats, is PC Ainge.

His intention, in arriving early, is to conduct a dynamic risk assessment for the launch of the UAS, and to undertake a site survey, to identify any risks to the use of the equipment. He is in possession of a map of the area that shows that there are no hazards above 100 feet, but in line with standard operating procedures he needs to conduct a visual audit of the area.

He parks his vehicle nearby and gets out on foot. The first thing he notes is that the weather conditions are good. Dawn is breaking and there is a light breeze from the south west. Cloud cover is high and light and an earlier check of the Met-Office rainfall radar on the internet had shown that there is no precipitation within 100 miles. He will later use an anemometer before launching the unit, but experience tells him that the breeze is no more than 10 knots, well below the limits of the system.

He walks to the centre of one of the grass-covered areas, observes that there is a lack of any airborne obstructions and then walks the 400 metres to HOLLER's address, noting that there are numerous obstructions below the build-height of the properties, such as telephone cables, trees and shrubs, lamp posts and so on. Above the build line the airspace is clear other than for some mature trees in Prospect Avenue which he estimates to be around 25 feet higher than the properties. He makes a decision to fly the unit at 150 feet.

His plan is to launch the unit as the other officers arrive at around 6am. It will be flown in its default launch setting, whereby it will climb vertically to the selected height, and will remain immediately above the operator, following him when he moves. Once PC Ainge starts walk along Prospect Avenue, the unit will follow him, until he directs it to go to a position to the rear of HOLLER's house at which point the on-board colour video camera will be trained on the rear of the premises. In the meantime, the dog handler will take up a position adjacent to the nearby scrubland.

The launch goes as planned, and with the other officers PC Ainge walks along the street. About 50 metres prior to HOLLER's address he selects a point on a map, on the video interface, where he directs the unit to fly to. Once there he trains the camera on the rear of the target property and starts receiving the live video. He selects an appropriate zoom setting for the camera and puts some crosshairs into the centre of the video image. The software starts to indicate the GPS co-ordinates of the unit and the GPS co-ordinates of the point on the ground represented by the cross-hairs.

As expected, as the front door goes in, the suspect appears out of an upstairs window, onto a flat roof, and jumps down into an adjacent garden. PC Ainge is able to control the pan & tilt of the camera which is not affected by the movements of the airframe as it adjusts for variations in the strength of the breeze. The suspect jumps over a number of fences and into a nearby footpath, towards the dog-handler's location. As the suspect is running, PC Ainge selects a flight mode that maintains a constant distance between the GPS co-ordinates of the unit and the target. This results in the unit flying at a constant distance behind the suspect.

After around 40 seconds, the suspect emerges into the area of scrubland and is challenged and arrested by the dog-handler.

PC Ainge then instructs the unit to return to his location. Once above him, he then walks back to the launch area and lands the unit. He will later transfer the video of the incident from the on-board DVR to a server based in his office.

End

---

## **Reply from ACC Thomas (via PA) to Insp Clarke (Northants Police)**

---

**From:** Jane BRAZIER PSE 52124  
**To:** Vaughan, Clarke  
**Date:** 07/07/09 11:49  
**Subject:** UAS Steering Group

**Attachments:**UAS Steering group.rtf; UAV Briefing document final draft.doc

Dear Vaughan,

Thank you for the range of papers.

Looks like we have a very similar interest in UASs. I guess my focus now is on the full size vehicles but I recognise the value in all options in the right circumstances. Looking forward to meeting you.

Regards.

Allyn Thomas.

---

## **Attachment to previous E-mail (Agenda to UAS Steering group briefing)**

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### **Agenda: ACPO UAS Steering Group**

1400 Hours, Monday July 13<sup>th</sup> 2009

Lecture Theatre, Police Headquarters, Wootton Hall, Northampton

Welcome & Introduction	ACC Featherstone
Presentation, West Midlands Fire Service use of UAS (15mins)	Pat Mika
Presentation, cutting edge uses for UAS (5mins)	Vaughan Clarke
Minutes of previous meeting	ACC Featherstone
Matters arising	All
CAA update	Gerry Corbett
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
South Coast Partnership	Richard Watson
UAS Governance	Vaughan Clarke
AOB	All
Date of next meeting	

## **E-Mail Exchange re SCP Meeting (July 2009)**

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### **E-mail from BAE systems to ACC Thomas**

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>>> "Mellors, Andrew (UK)" <[Andrew.Mellors@baesystems.com](mailto:Andrew.Mellors@baesystems.com)> 03/07/09 17:18 >>>

Allyn

Great to see you and Richard again yesterday. I thought the symposium was really good, covering a good range of subjects and getting some good discussions going.

To pick up on just one of those strands we discussed yesterday; we agreed that we needed to arrange a date for the next SCP meeting. I would be interested in finding out your availability and thoughts around location. As you know we are always happy to host everyone in Warton and had initially thought around the middle of September (w/c 14th). If any of the dates are convenient then please let me know otherwise other suggestions are welcomed.

The topics that I feel we could cover include;

Status of ACPO Air Support Strategy, GA22 Major Events Introduction Programme, MFA/MCA Tender Programme, Covert Surveillance Interest

Status of requirements capture and business model development

Status of current UAV Programmes and new products

Brainstorming of potential demo activities in 2010 with [REDACTED]

Let me know on your thoughts and we can get the arrangements kicked off.

Yours sincerely

Andrew Mellors

Head of Business Development Security & Civil

Mobile: + [REDACTED]

BAE Systems (Operations) Limited

Registered Office: Warwick House, PO Box 87, Farnborough Aerospace Centre, Farnborough, Hants, GU14 6YU, UK

Registered in England & Wales No: 1996687

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### **E-Mail from ACC Thomas to CInsp Watson**

---

>>> Allyn THOMAS ACC 11490 06/07/09 07:40 >>>

Richard, what do you think? It may be a bit of a tall order to refresh the meeting membership and get them to Lancashire. Perhaps if we can meet we can then invite people to go on a trip?

Allyn

**E-Mail from Cinsp Watson to PA to ACC Thomas**

---

**From:** Richard WATSON CH INSP 7470

**To:** BRAZIER PSE 52124, Jane

**Date:** 17/07/09 08:43

**Subject:** Fwd: Next SCP Meeting

Jane

I want to identify a date probably early September when we can convene the partnership for a meeting. Can you give me some possibilities from Mr T's diary.8th to 10th September looks fairly good for me.

R

---

**E-Mail from CAA to Inspector Clarke (Northants Police) and ACC Thomas containing forwarded press cuttings**

---

**From:** "Corbett Gerry" <Gerry.Corbett@caa.co.uk>  
**To:** "Clarke Vaughan" <Vaughan.Clarke@northants.pnn.police.uk>, allyn.thomas  
**Date:** 17/08/09 13:47  
**Subject:** FW: Press Summary - Police use of UAV's

**Attachments:** 17.08.2009Trade.pdf

Vaughan, Allyn,

I just thought that I'd point out the second story in the list below in case you had not become aware of it. The full internet article can be found here (hope the link works), although I'm not sure how/if it appeared in the printed newspaper.

<http://www.dailymail.co.uk/news/worldnews/article-1206618/Extremist-banned-entering-UK-BNP-festival.html>

The CAA's 'toy' classification and the 'smart water squirter' comments obviously leap out at you. As these comments come at the end of the web article, I suspect that they are just some sort of 'filler' made up by the writers of the piece (having seen the web article, the extract below may be slightly mis-quoted itself, and I also have my doubts about the 2 out of 4 rotors claim), but can you confirm whether or not any Police operated UAS possesses a smart water capability?

I'd also be interested if you know which Police Force's system would have been used, and whether or not one of their spokespersons may have given out the 'toy' comment? On the subject of the regulation of small UAVs, the CAA has now issued a Letter of Intent regarding the changes to the Air Navigation Order, and (hopefully) a link to the letter is attached below for your information

<http://www.caa.co.uk/default.aspx?catid=1350&pagedtype=90&pageid=9644>

Gerry

G J CORBETT  
Lt Cdr RN  
ORA4

Directorate of Airspace Policy  
Civil Aviation Authority  
CAA House  
45-59 Kingsway  
LONDON  
WC2B 6TE

E-mail: gerry.corbett@caa.co.uk

**(Forwarded CAA E-Mail)**

>>

Subject: FW: Press Summary  
From: CAA Press Office  
Sent: 17 August 2009 08:30

To: [REDACTED]

Subject: Press Summary

Press Summary 17 August 2009

17.08.2009Trade.pdf

Monday 17 August

National

High-speed north-south rail route would emit more CO2 than air travel, report says

By: Dan Milmo

A study by Booz Allen Hamilton, a consultancy, argues that building and operating a new north-south rail network in England will generate more CO2 than taking the same route by air over a 60-year period. High Speed Two, the company established by Lord Adonis to draw up plans for a north-south link, will submit its own report, including an environmental study, at the end of the year.

The Guardian, p.23, 17/08/2009

Police spy in the sky buzzes BNP summer party

By: Jaya Narain; Colin Fernandez

Police trying to ensure a BNP festival passed off peacefully used a remote-controlled 'spy drone' to monitor potential clashes. It is so small it is classified as a toy by the Civil Aviation Authority, so operators don't need a licence to fly it ÷ It can be fitted with a night vision camera and loudspeaker ÷ Some have a jet that fires 'smart water' - which carries a unique chemical marker - to tag suspects ÷ The drones have four sets of rotors but can fly on two ÷ Top speed is 15mph, usual operating height is 160ft-220ft

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\* Note: This e-mail contained a variety of further press cuttings on numerous stories related to air travel. However, as they are not relevant or pertinent to this subject they have been removed.

## **E-Mail from BAE systems to Police and Partner Agency Representatives re SCP meeting (Sept 2009)**

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**From:** "Harrison, Samantha (UK)" <Samantha.Harrison@baesystems.com>

**To:** "Richard WATSON CH INSP 7470" <richard.watson@kent.pnn.police.uk>, "Chalk, Glen" <Glen.Chalk@dorset.pnn.police.uk>, <Richard.Bell@dorset.pnn.police.uk>, <paul.marrion@essex.pnn.police.uk>, <Kieran.O'Toole@gmp.police.uk>, <martin.goodall@hampshire.pnn.police.uk>, <Richard.Slatter@Herts.pnn.police.uk>, <keith.hulbert@hmrc.gsi.gov.uk>, "Dismore Oliver" <Oliver.Dismore@npia.pnn.police.uk>, <andy.mellows@homeoffice.gsi.gov.uk>, <alan.brooke@homeoffice.gsi.gov.uk>, <peter.dymond@moga.gov.uk>, <gary.d.owen@mfa.gsi.gov.uk>, <1560@surrey.pnn.police.uk>, <jane.derrick@sussex.pnn.police.uk>, <andy.cole@homeoffice.gsi.gov.uk>

**CC:** "Mellors, Andrew (UK)" <Andrew.Mellors@baesystems.com>, <allyn.thomas@kent.pnn.police.uk>, <jane.brazier@kent.pnn.police.uk>, [REDACTED]

**Date:** 22/09/09 10:19

**Subject:** Invitation to South Coast Partnership Stakeholders Meeting Kent Police HQ Thurs 8th Oct

Dear All,

You are invited to attend the next South Coast Partnership (SCP) stakeholder's meeting which will be held at Kent Police Headquarters, Maidstone on 8th October 2009.

The meeting will be chaired by ACC A Thomas and commence 10.30 until 14.00. The aim of the day is to provide you with an update of progress of SCP related activities and an opportunity to discuss joint future plans and potential UAS demonstration activities in 2010. A draft agenda is given below;

10.30 - 10.40	Introduction	Chair
10.40 - 11.00	SCP Maritime Update	BAE Systems
11.00 - 11.30	Status of current UAS programmes and New Products	BAE Systems
11.30 - 12.00	Proposed Introduction programme for GA22 Policing Major Events	ACPO UAV Sub Committee
12.00 - 12.30	Brainstorming of potential demonstration activities in 2010	
12.30 - 13.00	LUNCH	
13.00 - 13.30	Status of ACPO Police Air Support Strategy	Kent Police / HO
13.30 - 13.45	Business Model developments	BAE Systems
13.45 - 14.00	Wash up	

If you would like to attend, please could respond back to me via return e-mail and I will co-ordinate numbers with Kent.

I will confirm arrangements closer to the time, but please do not hesitate to contact me with any queries.

Look forward to seeing everyone in Maidstone.

Best Regards

Samantha

Samantha Harrison

Delivery Manager - South Coast Partnership  
Autonomous Systems & Future Capability  
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BAE Systems (Operations) Limited  
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Registered in England & Wales No: 1996687

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### **Follow-Up E-Mail from BAE Systems to Police and Partner Agency Representatives re SCP meeting (Sept 2009)**

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**From:** "Harrison, Samantha (UK)" <[Samantha.Harrison@baesystems.com](mailto:Samantha.Harrison@baesystems.com)>  
**To:** "Chalk, Glen" <[Glen.Chalk@dorset.pnn.police.uk](mailto:Glen.Chalk@dorset.pnn.police.uk)>, "Hulbert, Keith (Det Na...  
**CC:** "Richard WATSON CH INSP 7470" <[richard.watson@kent.pnn.police.uk](mailto:richard.watson@kent.pnn.police.uk)>, <jane...  
**Date:** 07/10/09 18:35  
**Subject:** South Coast Partnership Meeting

Dear All,

Just to confirm the SCP meeting tomorrow, 8th October at Kent Police HQ between 10.30 - 14.00.  
Please could you aim to arrive at the HQ reception around 10.00am and book in and obtain parking permit etc. Richard Watson will meet us there and escort us to the meeting room.

Address is:

Kent Police Head Quarters,  
Sutton Rd,  
Maidstone, Kent, ME15 9BZ

10.30 - 10.40	Introduction	Chair
10.40 - 11.00	SCP Maritime Update	BAE Systems
11.00 - 11.30	Status of current UAS programmes and New Products	BAE Systems
11.30 - 12.00	Proposed Introduction programme for GA22 Policing Major Events	ACPO UAV Sub Committee
12.00 - 12.30	Brainstorming of potential demonstration activities in 2010	
12.30 - 13.00	LUNCH	

13.00 - 13.30	Status of ACPO Police Air Support Strategy	Kent Police / HO
13.30 - 13.45	Business Model developments	BAE Systems
13.45 - 14.00	Wash up	

Look forward to seeing everyone tomorrow

Regards

Sam

Samantha Harrison

Delivery Manager - South Coast Partnership  
 Autonomous Systems & Future Capability  
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+44 (0)1772 858750 (Phone Number)  
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 samantha.harrison@baesystems.com  
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 Registered in England & Wales No: 1996687

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## E-Mail from BAE Systems to ACC Thomas (Oct 2009)

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**From:** "Mellors, Andrew (UK)" <Andrew.Mellors@baesystems.com>  
**To:** "Allyn THOMAS ACC 11490" <allyn.thomas@kent.pnn.police.uk>  
**Date:** 09/10/09 14:14  
**Subject:** SCP Meeting

Allyn

Many thanks for your kind hospitality yesterday for the South Coast Partnership Meeting and your time on Tuesday. I understand the speed and scale of activity at the moment and so really appreciate your commitment to our relationship. I would like to take you up on the offer to brief my senior managers so will try and get some dates from them and liaise with Jane.

Can I also extend my thanks for Richard Watson's time and effort, without which I don't think as much progress would have been made, and I hope that he is able to continue to make a substantial contribution to these activities in to the future.

I hope your meeting with Alex Marshall on Monday goes well and your travel to Exeter is a clear run. We will confirm back via Ollie that Dave Kershaw (my boss) and I will be attending the session on the 30<sup>th</sup> October in Hampshire. Dave and I are attending an RAF Band concert in London that night and wondered if you were interested in joining us as our guest, the invite is open for your wife as well if she would be interested. Let me know if you are interested and I will let you have some more details.

Yours sincerely

Andrew

Andrew Mellors  
Head of Business Development Security & Civil  
Autonomous Systems and Future Capability  
Mobile: +44 (0)7801 716207

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**E-Mail from BAE Systems to Police and Partner Agency Representatives following SCP meeting (Nov 2009)**

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**From:** "Mellors, Andrew (UK)" <Andrew.Mellors@baesystems.com>  
**To:** <barry.talbot@hampshire.pnn.police.uk>  
**CC:** "Dismore Oliver" <Oliver.Dismore@npia.pnn.police.uk>, "Allyn THOMAS ACC 11490" <allyn.thomas@kent.pnn.police.uk>, "Richard WATSON CH INSP 7470" <richard.watson@kent.pnn.police.uk>  
**Date:** 13/11/09 08:38  
**Subject:** National Air Operations Strategy  
**Attachments:** Alex Marshall - Letter requesting further contact Nov 09.doc

Barry

Many thanks for your hospitality on the 30th October. I have attached a letter for Mr Marshall to express our interest in the programme, and asking for a chance to discuss things further when it is practical.

I would be interested in getting a copy of the presentation that was used at the briefing so that we could bring more of our management team up to speed with the situation.

I would also be interested in your views about a more comprehensive NDA to allow us to talk to a number of the stakeholders that would be involved in the future; incumbent service providers, original equipment manufacturers etc. and how after the initial discussion you are planning to make best use of the industrial input. We would be interested in more data to help analyse the opportunities for savings etc and so would like to discuss how this could be made available.

If we can be of any further help then please don't hesitate to contact us.

Yours sincerely  
Andrew Mellors  
Head of Business Development Security & Civil  
Autonomous Systems & Future Capability  
Mobile: [REDACTED]

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Registered in England & Wales No: 1996687

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## **BAE letter to CC Marshall (Nov 2009)**

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Your Ref: CC/BT/smg

CC Alex Marshall  
National Police Air Operations - Strategy  
Hampshire Police HQ  
Winchester  
Hants SO22 5DB

Dear Mr Talbot

### **Follow up to the National (Police) Aviation Service Meeting on 30<sup>th</sup> October 2009**

Thank you for inviting BAE Systems to the briefing event on 30<sup>th</sup> October and for outlining your concept of a national aviation service. BAE Systems found the event very interesting and we look forward to working with you and your team in understanding the issues and postulating a solution that will deliver a more effective and capable police service.

We look forward to understanding what role we can play within the implementation of the strategy and hope we can help facilitate any cross industry input that is required.

Through our work with the South Coast partnership, over the last two years, we have gained a good understanding of police operations and requirements. In addition we have considerable experience of service based contracting through the work we have done with MoD and believe we can add value to a range of service based approaches from a 'police owned' service to one that is fully 'out sourced' to providers.

Recognising the demanding timescales that you are working to we would like to meet with you and your team as soon as practical to discuss how we might become more involved in the process.

We hope that something can be arranged soon to keep the momentum going of what will be a fundamental change to air support for the Police.

Yours sincerely



**Andrew Mellors**

Head of Business Development – Security  
Autonomous Systems & Future Capability  
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## **6. APPENDICES**

**This document is accompanied by three appendices, representing information previously refused under the Section 43 exemption and released following a review.**

**Appendix 1** – The content of a powerpoint briefing presentation on the GA22 airship produced by Lindstrand technologies, a vehicle being considered as a possible platform for related technology.

**Appendix 2** – The GA 22 Operational User Requirements document.

**Appendix 3** – A powerpoint presentation briefing created by BAE in relation to a separate project, provided to the SCP to provide background information.