



1 Summary Information

Project name	Solent Marine and Maritime Autonomy Hub
Delivery Location	Portsmouth base covering whole of Solent Area

Lead applicant organisation	BAE Systems
Postal address	Product & Training Services Broad Oak The Airport Portsmouth PO3 5PQ
Email address	mike.woods@baesystems.com
Phone number	07793 422 559
Project lead name	Mike Woods
Partner names	ASV Ltd

Project summary	<p>Marine and Maritime surface vessel autonomy is a high technology market currently worth approximately £100m p.a. globally and growing in excess of 10% per year (IHS Global Limited Market Study of USV June 2014). The Solent area has a number of separate world class businesses operating in this sector, and this project aims to strengthen the Solent's position as both a national and future international hub for the development of unmanned systems and delivery of training and certification of operators. Specifically, the project aims to:</p> <ul style="list-style-type: none"> • Install a high-bandwidth radio network infrastructure to support safe and reliable testing of unmanned surface vessels with coverage stretching across the Solent coastline. • Provide a high performance, general purpose unmanned surface vessel (USV) demonstrator, based on the Royal Navy's excellent Pacific 24 rigid inflatable boat (RIB) - providing enterprises in the Solent with affordable access to an advanced unmanned platform for training, testing of new unmanned technologies, and promotional demonstrations otherwise prevented by the inherently high capital cost of market entry in this sector. • Provide a flexible and mobile Solent based control centre to support sea trials, training, customer demonstrations and USV operations at a variety of Solent locations. • To provide a common approach to safety and regulatory compliance during unmanned operations. • Boost growth in the Solent and productivity of individual organisations.
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	<p>Currently, individual enterprises are duplicating effort establishing the necessary infrastructure to grow this sector. Through the provision of an accessible, standardised Infrastructure, the Solent area can become the natural focal point for world class collaboration between industry, academia, and public service bodies.</p> <p><i>Provide a concise description of the proposal, including why it is needed, what it will deliver, the impact of not delivering the project, and why funding is required.</i></p>
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Strategic Case

What problem or opportunity is the project seeking to unlock?	The opportunity is to provide the Solent with a coordinated approach to the exploitation of the UK Marine and Maritime Surface Autonomy sector, providing essential enabling infrastructure, common operational processes, promoting collaborative enterprise behaviours and removing barriers to market entry for SMEs across the Solent
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How does the project fit with the Solent LEP's Strategic Priorities?	
<ul style="list-style-type: none"> Unlocking sites for housing and employment 	Not applicable
<ul style="list-style-type: none"> Improving our connectivity within the Solent and beyond 	Cyber connectivity can be as important as physical connectivity, and the creation of a secure super-fast marine and maritime radio mesh network enabling high integrity data communications across land and sea throughout the Solent area represents a unique facility, the extent and performance of which will be unique worldwide. This mesh radio network will be connected to the internet facilitating big data sharing.
<ul style="list-style-type: none"> Stimulating and supporting innovation 	By providing a standardised, open architecture test and development environment with standard operating procedures, a collaborative community of practise will form which will stimulate innovation, new business partnerships and the creation of novel intellectual property in all areas of the emerging unmanned systems sector, including but not limited to safe unmanned navigation, route planning and obstacle avoidance, advanced autonomous and agent based behaviours, launch and recovery and the development of machine deployed payloads. This project would aid Solent productivity by providing the essential sector specific capital assets required to enable small businesses, academia and larger companies alike to focus on the innovative, new technology ideas that really create value and drive future sector growth.
<ul style="list-style-type: none"> Improving the skills and talent of our current and future workforce 	<ol style="list-style-type: none"> 1, Creation of secure, high value engineering job opportunities in naval architecture, communication systems, electronics, software, control systems and data and image processing. 2, Training and certification for future unmanned systems operators. This is a high growth, high potential opportunity. 3, Facilitation of academic applied research and value-added accredited degree courses.
<ul style="list-style-type: none"> Supporting business growth through access to resources and advice 	<ol style="list-style-type: none"> 1, Provision of essential infrastructure to create an environment for collaborative enterprise opportunities and the creation of new market specific intellectual property. 2, Ready access to physical assets essential for the testing, qualification and marketing of future unmanned system by reducing development costs and improving time to market.
<ul style="list-style-type: none"> Supporting our key strategic sectors 	Supports the Solent key areas of <i>marine and maritime autonomy</i> ,

	<p><i>defence, and advanced technologies</i> and is likely to provide opportunities in the long term transformation of the ports of Southampton and Portsmouth - when unmanned technologies eventually become mainstream business. This technology will have a major impact on commercial shipping and this project will help position the Solent region at the forefront of this future disruptive transformation.</p>
<p>How will the project raise productivity in the Solent?</p>	<p>By removing the need for individual enterprises to invest in the costly up-front capital required for this sector, and by rolling-out proven and cost effective risk, safety and regulatory compliant working practises, resources can be focussed on the generation of new and better value-adding technologies.</p> <p>The technologies developed with this project will be high value, high margin items with export potential - the type of work which will significantly enhance Solent productivity measures.</p> <p>By allowing enterprises to share a common infrastructure, the Solent will grow its critical mass of expertise and attract new investment. Leveraged through a strong existing marine sector, and the proximity of commercial shipping ports and Naval base, the Solent is ideally located to attract further levels of private sector investment.</p>
<p>How will the proposal demonstrate additionality?</p>	<p>Without this funding, enterprises operating within this sector will continue to operate in isolation, duplicating unnecessary effort and failing to leverage the benefits from collaborative operation.</p>
<p>Describe the wider economic impacts of the proposal</p>	<p>The provision of unmanned systems infrastructure in the Solent area will:</p> <ul style="list-style-type: none"> • Facilitate applied research at facilities such as DSTL and NOC. • Attract graduate applicants to courses at universities able to make use of these facilities. • Attract new businesses otherwise unable to bear the high start-up costs in this sector • Consolidate the Solent's position as the leading UK hub for marine and maritime industries • Attract inward investment from international companies wanting to develop technologies in this space.
<p>Describe the social impacts of the proposal</p>	<p>The Solent has a proud heritage of marine and maritime industries and ship building, and unmanned/autonomous surface vessels have the opportunity to start a new and exciting chapter in this story. Work undertaken on the proposed infrastructure will help reassure regulatory bodies and the wider public that unmanned marine systems offer safe and predictable behaviour in the vicinity of other sea users, and help the long term transition to wide scale adoption. The project will help enhance the region's 'technology' reputation that has been so successful in places like Singapore,</p>

	San Francisco and Boston. The positive social impacts on the younger generation will be to encourage them to stay in the region and to act as a 'talent magnet'.
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Outputs (For each, explain where the output will be delivered (in Solent or outside), and the basis of your calculation).	
Number of new permanent jobs created directly	2 (Facility manager & training roles)
Number of new permanent jobs created indirectly	100 (5 year SME growth prediction)
Number of safeguarded jobs	5
New houses enabled	n/a
New employment / education space enabled (<i>type and m²</i>)	n/a
Skills Estates improved (<i>type and m²</i>)	n/a
Skills outputs (<i>apprentices / learners</i>)	Initially targeting 20 per annum (operator training and certification through universities and industry)
Total wider leveraged investment resulting from project	£1.0m p.a. (estimated additional product development and applied research attracted to Solent area due solely to this infrastructure)
Describe any other outputs to be delivered as a result of this project.	<ul style="list-style-type: none"> • Consolidation of Solent academic and public service body position as recognised centres of excellence. • Published marketing collateral to promote use of these facilities and the region's general capability in this sector. • A promotional video for use in schools to attract young people into this fast growing sector.

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Economic Case

Explain how the proposal will provide value for money, and what is the basis for your assessment?	1, Indirect creation of 100 new high value jobs with enhanced salaries and consequent positive impact on local economy. 2, Leveraging private sector research and product development funding in commercial and defence projects, enhancing productivity and accelerating development of technology. 3, Creating a focal point for a sector specific community of practise which will be more than the sum of its individual parts. 4, Reduce duplicate spending on capital and infrastructure by individual enterprises.
Provide a list of the options that have been appraised? (where applicable)	N/a
For transport schemes only: Provide details and outputs of a WebTAG Assessment undertaken.	N/a

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Financial Case

	2016/17	2017/18	2018/19	2019/20	2020/21	Total
Local Private Sector Contributions	£0.55m	£	£	£	£	£0.5m
Local Public Sector Contributions	£	£	£	£	£	£
Local (other) Contributions	£	£	£	£	£	£
LGF Funding Request	£1.0m	£	£	£	£	£1.0m
Total Project Costs	£1.5m	£	£	£	£	£1.5m

Are local funding contributions confirmed, and if not, when will they be confirmed?	Yes
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What are the key financial risks?	1, Late agreement of funds will erode certainty in delivery of project by 31 st March 2017 2, Projected costs may exceed current estimates in this OBC.
Has any sensitivity analysis been undertaken on costs?	Detailed analysis to be conducted as part of full business case.

Is the proposal compatible with EU State aid regulations?	Yes.
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Any other information or further comments on the proposal not captured in other sections of this form	<p>This project meets the necessary affordability criteria; BAE Systems has funding available which represents >30% of the total requirement and is requesting £1.0m from the £3.0m innovation fund.</p> <p>In recognition of the financial contribution made by BAE Systems to the project, up to 60 days per annum will be reserved for exclusive use of the resultant infrastructure by BAE Systems and its partner organisations.</p> <p>This proposal builds on a £1.3m R&D program conducted by BAE Systems during 2015/16 to develop an unmanned surface vessel demonstrator for the Royal Navy's exercise Unmanned Warrior.</p>
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Commercial Case

Provide details of your contracting and procurement strategy?	Through BAE Systems Procurement Policy (759/OF/036), will maintain the highest possible standards and deliver best overall value for BAE Systems Maritime Services when working with our supply chain in an open and transparent manner and encourage our suppliers to adopt the same or equivalent standards of ethical business conduct as set out in our Code of Conduct.
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Please set out the key project risks in this table:				
Risk	Mitigating Actions	Contact Responsible	Review Date	RAG Rating for Risk
Benefits may take longer to materialise than expected	Liaise with local sector businesses to gauge likely level of uptake during development of full business case.	TBD	Sept 2016	G
Benefits may not ever be realised	As above.	TBD	Sept 2016	G
Project may not complete by 31 st March 2017	Detailed plan and schedule sensitivity analysis during full business case development	TBD	Sept 2016	A
Project costs may be understated	Make appropriate optimism bias adjustments.	TBD	Sept 2016	G

Expected delivery start date (<i>quarter / year</i>)	Q4/16
Current status of the scheme (<i>feasibility / outline design / detailed design</i>)	Outline Design
What consents are required, and are these in place? If not, when will they be in place?	OFCOM licence for radio systems already in place.
Are there any constraints and dependencies, if so, what are these?	None.

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Management Case

Who is the project manager/client?	BAE Systems Tier 3 Project Manager – name to be confirmed.
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Set out the key decision points	None.
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Set out the key actions and milestone to enable delivery of this project			
Action / Milestones	Target Completion Date	Person Responsible	Current Position (Including risks / mitigation if necessary)
Project Launch	Oct 16		
P24 base boat receipt	Nov 16		
Mobile control station - procurement	Nov 16		
Radio system – hardware receipt	Jan 17		
P24 conversion to unmanned	Feb 17		
Mobile control station – hardware receipt	Feb 17		
Safety Case & Operating Procedures	Feb 17		
Mobile control station - integrated	Mar 17		
Radio network – commissioned	Mar 17		
Project completion	Mar 17		

Set out the governance framework that will be in place	BAE Systems Lifecycle Management Process for investment programs >£1m.
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What is the proposed reporting and approval process	BAE Systems Operational Framework, bid approval process BMS 60000 and 60261 and monthly contract reviews LM03/02.
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7 Declaration and Checklist


The below declaration is an essential part of the application form and must be completed by all applicants. Failure to complete the declaration will result in your application not being considered.

Do you have any existing business relationships with the Solent LEP or Investment Panel members?	Yes Brian Johnson, BAE Systems director is also board member of Solent LEP. Dan Hook, MD ASV sits on the Solent Marine and Maritime Steering Group	
Have you previously applied for any Solent LEP funding?	Yes	
Organisation Name	Date of Application	Awarded (Yes / No)
BAE Systems	Solent Futures Training Fund £1,050,000 (2012-15 scheme)	Yes

Please confirm:	
I will answer all questions on this application form relevant to my application.	Yes
I have read and understood the information in the relevant Guidance document and, to the best of my knowledge, I am eligible to apply.	Yes
I declare that the information I will provide in this form is, to the best of my knowledge, correct.	Yes
I understand that answers may be used in response to Freedom of Information Act 2000 requests and these will be released pending further consultation with me.	Yes
I understand that, if successful, my application may be made public with the exception of any information I have indicated as commercial in confidence.	Yes
The level of Solent LEP grant funding requested is within the threshold as published in the relevant Guidance.	Yes
I understand that Panel decisions in relation to my Full Application are final and there is no right of	Yes

appeal.	
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I declare that the information I will enter on this application form and submit in the accompanying documentation is correct to the best of my knowledge and belief.

Applicant name	Mike Woods
Date of submission	3 rd June 2016
Name of Responsible Officer	Les Gregory - Product & Training Services Director
Signature of Responsible Officer	

Checklist	
Have I filled in all sections of form	Yes / No
Is LGD funding request over £1 m	Yes / No
Have I signed declaration box	Yes / No
Where you have responded "No" to any of the above answers, please note, your application will <u>not</u> be eligible for consideration	

Is this application seeking funding to support an innovation project?	Yes / No
Where the response to the above is "Yes" please refer to the separate call for innovation projects, which will be issued by Solent LEP in April 2016	

The deadline for submission of applications to Solent LEP is 23:59 on Friday 3rd June 2016

All submissions should be sent using this template to: pipeline@solentlep.org.uk.

Submissions received after this time and date cannot be considered.