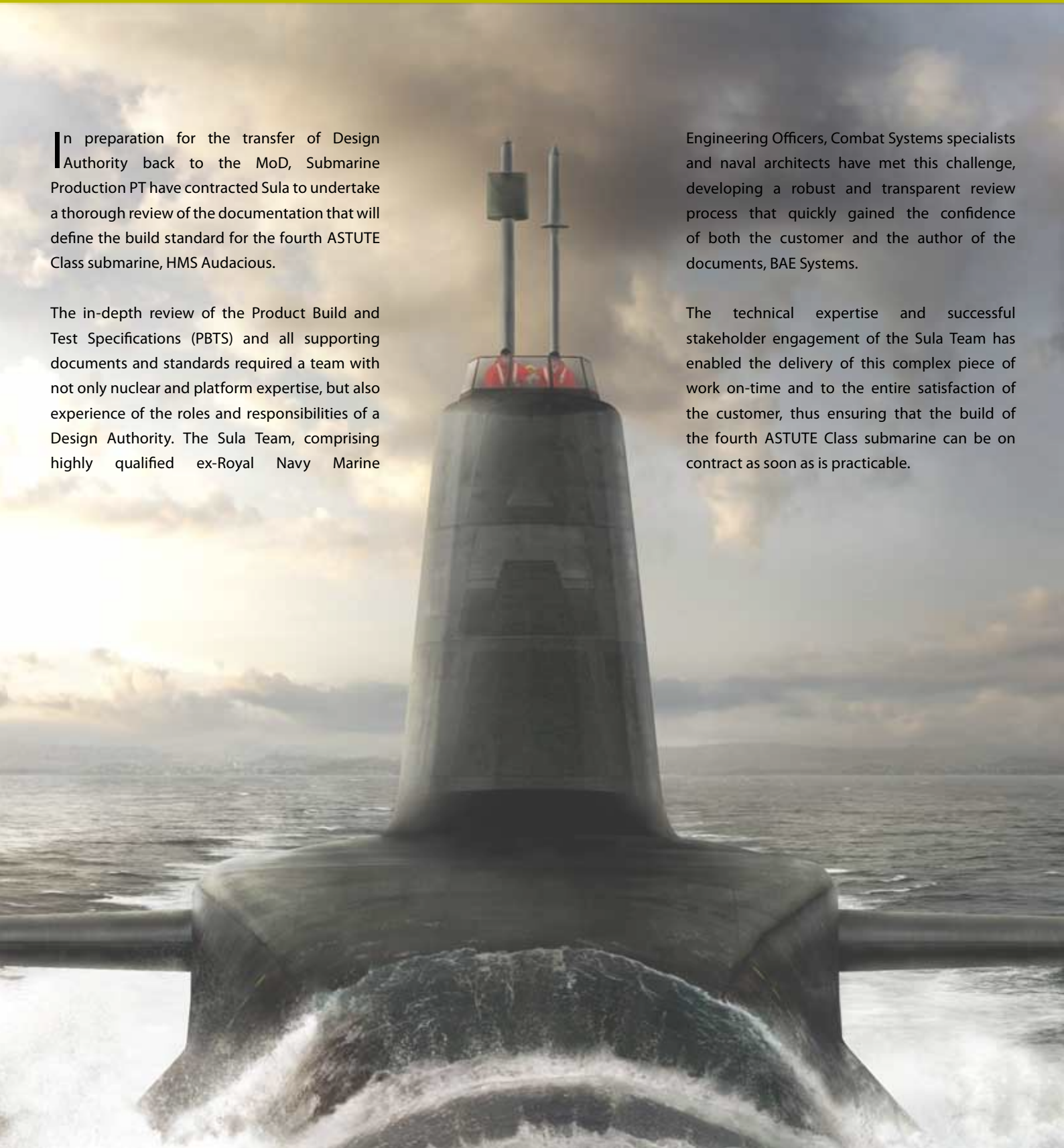


In preparation for the transfer of Design Authority back to the MoD, Submarine Production PT have contracted Sula to undertake a thorough review of the documentation that will define the build standard for the fourth ASTUTE Class submarine, HMS Audacious.

The in-depth review of the Product Build and Test Specifications (PBTS) and all supporting documents and standards required a team with not only nuclear and platform expertise, but also experience of the roles and responsibilities of a Design Authority. The Sula Team, comprising highly qualified ex-Royal Navy Marine

Engineering Officers, Combat Systems specialists and naval architects have met this challenge, developing a robust and transparent review process that quickly gained the confidence of both the customer and the author of the documents, BAE Systems.

The technical expertise and successful stakeholder engagement of the Sula Team has enabled the delivery of this complex piece of work on-time and to the entire satisfaction of the customer, thus ensuring that the build of the fourth ASTUTE Class submarine can be on contract as soon as is practicable.



Welcome

2009 has been another successful and busy year where we have had the satisfaction of providing key support to a growing number of clients and projects.

Sula has grown dramatically over the past few years, but I am proud to say that we remain true to our values and commitment to providing excellent levels of service. We have recently re-organised our business to provide more of a focus on our major business sectors: Land, Submarines and Nuclear, Aerospace, Complex Weapons, C4I and Enterprise Planning, all of which are showing significant potential.

The global recession, forthcoming general election and promised Defence Strategy Review will certainly lead to tougher times ahead. As a business, however, we remain confident that our customer focus and responsiveness will ensure that there is an ongoing demand for Sula's brand of high quality and pragmatic advice.

I would like to take this opportunity of sending you our best wishes for 2010 and look forward to meeting with you in the New Year.

Nigel

Nigel Vaughan
Managing Director.

systems engineering | systems thinking | engineering science

Technical Assurance to Thales Lightweight Missile Family Study

Sula Systems has been contracted to provide a Technical Assurance Team to Thales Air Defence Ltd. in support of the Lightweight Missile Family Definition Study, awarded through the Complex Weapons Centre for Defence Technology (CW CDT). The aim of the Thales study is to propose a family of lightweight missile systems, capable of engaging challenging targets in the land, sea and air domains. This will encompass a number of future requirements such as the Future Anti-Surface Guided Weapon (Light) (FASGW(L)), the Future Rapid Effects System Formation Reconnaissance (Overwatch) FR(O) variant and other opportunities, both within the UK and Overseas.

Sula will provide an independent perspective on the proposed Lightweight Missile Family concept development, in order to ensure the technical quality of

the study. We will lead on the high level requirements definition, identifying and engaging with key Stakeholders across MoD. We will also conduct an initial Technology Survey using the Expert Advisory Groups of the CW CDT. The EAGs encompass the UK supplier base for Complex Weapons and is an established and recognised means of industry providing input to MoD planning processes in this domain.

Sula is one of the few truly independent providers of Complex Weapons expertise in the UK, and brings with it extensive experience of independent technical assurance, requirements capture and stakeholder engagement. Sula has a very strong reputation for successful technology maturation and risk assessment on programmes such as FRES, BCIP, Tornado and Harrier Upgrades and LEAPP.

Land Environment Air Picture Provision (LEAPP) Technical Field Trials

In November 09, Sula won a competitive tender to support the MoD's Joint Sensor and Engagement Networks (JSENS) Delivery Team to plan the future Technical Field Trials of the Land Environment Air Picture Provision (LEAPP) System. Sula is priming the contract and will be supported by the professional services company VEGA Consulting Services. The LEAPP System, provided by Lockheed Martin INSYS, will provide near real-time data for the Land Component's Air Picture.

Under this new contract, Sula will define a high level plan for the activities leading up to the Technical Field Trials; defining the activities, identifying dependencies, estimating costs and assessing risk to enable the detailed planning to take place at a later stage. We will also be identifying the recording equipment necessary and conducting a Technology Readiness Level (TRL) assessment after the Critical Design Review to provide an updated assessment of system maturity.

The Sula team is able to bring extensive trials experience and radar and tactical data link expertise in support of the trials, as well as existing system knowledge and established relationships with the programme's stakeholders.

Sula has supported the LEAPP project since 2006, performing TRL assessments, defining test scenarios, conducting data analysis and defining the strategy and scenarios for the Synthetic Environment testing. Winning this first phase trials support contract places Sula as the preferred contractor for a second phase to provide further TRL assessments, trials support and data analysis.

Sula will be exhibiting at Defence Research 2010 Annual Conference and Exhibition on the 23rd and 24th March - we look forward to seeing you again at Stand 50.

Force Protection Europe (FPE)

Sula is delighted to be supporting Force Protection Industries Inc. (FPI), the provider of mine blast resistant vehicles to the MOD, in establishing Force Protection Europe (FPE) – a wholly owned subsidiary. FPE's mission is to create a UK-based leader in the provision of survivability solutions to the European and Middle-Eastern markets.

Sula is providing the Chief Engineer and a team of system engineers to establish delegated design authority status for FPE. Activities include: development of system engineering processes; technology roadmapping for future product development; project management processes including risk management and

project reporting; and configuration management.

In addition to design authority implementation, Sula is providing engineering support for the fleets of Mastiff and Buffalo vehicles supplied to the MOD. We are leading the Mastiff 1.75 Upgrade programme to provide uprated axles and suspension, improved steering performance, and increased electrical power to the in-service Mastiff 1 fleet. We are also supporting the preparations for the upcoming Buffalo trials and managing the brake and suspension



upgrades being performed at MIRA.

In addition to these existing vehicles, Sula is pleased to be providing system engineering support to the Ocelot vehicle

programme, Force Protection's joint development with Ricardo. Ocelot has recently been down-selected for the MOD's Lightweight Protected Patrol Vehicle (LPPV), the Snatch Landrover replacement.

FPE has set up premises on the Ricardo site at Leamington Spa where they are co-located with the Ocelot design team. Sula has defined the requirements for the IT infrastructure for the facilities. This includes a dedicated server and network interconnectivity to enable vehicle design data to be passed electronically from FPI to FPE while maintaining the necessary security controls.

We look forward to continuing to support FPE in this exciting new business endeavour.



International Council on Systems Engineering (INCOSE)

INCOSE is recognised as the premier Systems Engineering professional organisation in the country and we are delighted that Sula engineers are involved in key roles with INCOSE UK. As a high-end systems engineering consultancy, Sula have forged close ties with INCOSE both on an individual basis and as a Company.

Sula has joined the UK Advisory Board (UKAB), which provides guidance on the activities of INCOSE UK and the promotion of best practice within the discipline. Sula is represented in this forum by Chris Lamb, our Engineering Manager, who recently formalised the arrangement at the INCOSE UK AGM at University of Warwick during the Autumn Assembly. One of the conference presentations that day on the subject of Systems Engineering for Small & Medium Enterprises was provided by Doug Cowper (INCOSE UK President and current Sula Associate), Alan Smith (UCL), and Ian Gibson (Sula).

At a previous INCOSE event during summer 2008, Ian was invited to take up the post of INCOSE UK Communications Director, in which role he has made a significant contribution in re-casting and implementing the organisation's communications strategy, and will continue to contribute centrally in this important professional body. Ian has been a leading figure in the Bristol Local Group for a number of years, organising and directly contributing to a regular series of evening presentations and workshops, open to both non-members and members. Sula's aim in pursuing closer ties with INCOSE is both to contribute to the intellectual leadership within the discipline and to promote use of best practice through training provision and knowledge sharing.

Future Strategic Tanker Aircraft (FSTA)

Since 2008, Sula has been providing high level systems engineering consultancy to the VT Group for their AirTanker Communications Information Systems project. AirTanker CIS is itself a part of the Future Strategic Tanker Aircraft (FSTA) programme, a Private Finance Initiative to develop and operate a fleet of fourteen aircraft, primarily providing Air to Air refuelling services for the RAF, together with some armed forces passenger services.



Sula's initial involvement was to assist VT Group with the technical management of the CIS project, setting the criteria to be used at each major design review and establishing engineering processes enabling the project to control and focus its efforts in challenging timescales. The system has successfully passed its major reviews and a Test Bed implementation of the system has now been installed at the AirTanker offices near RAF Brize Norton from where the aircraft will operate. The Test Bed will be used to support integration and testing work ahead of commissioning the operational version of the CIS within the air base. Sula is continuing to provide consultancy through to 2011 as the system goes live, especially in the area of facilitation of contract milestone acceptance. The method used by Sula to ensure timely agreement by the PFI bankers' Independent Qualification Board and by the operating company within the AirTanker industrial consortium is vaunted as best practice by VT Group, demonstrably showing technical achievement.

Non Linear SAR

Sula has been awarded a Patent for a revolutionary new way for aircraft to detect moving targets and map terrain.

Aircraft have, for many years, used a technique known as 'synthetic aperture radar (SAR) to map terrain for a range of different civil and military applications. Unfortunately, while there have been many developments in SAR, there has been a continuing problem with moving targets. As a consequence of conventional SAR processing, these targets, whether they are cars, trains or military vehicles, are displaced in the SAR image due to their velocity. This leads to SAR images being mis-interpreted and opportunities lost.

Sula has taken a fresh look at the problem and by challenging well-established assumptions, realised that there were alternatives to the conventional SAR way of thinking. A new approach and algorithm were developed which is the subject of this patent. This new approach shows promise and has received MoD funding via the EMRS DTC to support development and testing.

The granting of this patent provides confidence to the MoD, Sula and potential development partners that the idea is both unique and that its use will remain exclusive to the development team and their customers.

Dependency Management

Sula continues to support the FRES Specialist Vehicles and Warrior Capability Sustainment Project for MoD Defence Equipment and Support (DE&S) providing Chief Engineer, Experimentation Support and Systems Engineering services.

A significant area of Sula expertise is the management of dependencies across the project boundaries. These dependencies include the Defence Lines of Development, other MoD projects whose systems we are integrating or interfacing with and technology developments across the Science Innovation and Technology areas. Sula has been managing dependencies for FRES since 2003 and recognise that this process is vital to ensuring delivery of both projects and programmes. The weakness of programme management within the MOD was highlighted in last years NAO Major Projects Review, but an Office of Government Commerce (OGC) review of FRES SV a few months ago commended the project on their handling of dependencies.

Our approach is to establish and proactively manage the links with the other areas of MOD that are necessary for a project to meet its objectives. Through establishing these links one project's need becomes another project's requirement. As more

projects define their need, the web grows adding to the wider understanding. It is this understanding of project interdependencies that is so important to Programme Boards.

The Programme Boards need accurate and current management information and Sula are actively developing processes and tools to support them by providing projects with the information that they need for successful delivery.

Other support that Sula has provided to Programme Boards includes the writing of a thought leadership piece called the 'How-to Guide' on setting up a Programme Support Function. We wrote this originally for Director Land Equipment but its value has been recognised across DE&S.

For more information on any of the articles featured, please contact us on 01453 844660 or email info@sula.co.uk.

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