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Parking enforcement underway in Bristol

Following a successful three-day trial which saw improved parking behaviours around the city’s schools, Bristol City Council awarded SEA a contract to provide a mobile enforcement vehicle in November 2011. The system will be used to improve safety outside schools, hospitals and taxi ranks and lower congestion.

The council has also taken delivery of the ROADflow Replay review suite which allows operators to review evidence generated by ROADflow systems with ease. These benefits will help Bristol City Council achieve more for less and represent greater value for money to the tax payers.

Councillor Tim Kent, executive member for transport said: “The aim is to get everyone parking safely and legally at problem locations particularly around schools, bus stops and loading bays. It is vital that people do not park in a dangerous manner.”

The vehicle will be used seven days a week and commenced enforcement duties in January.

Flexible interface with Si-Dem

SEA has implemented a ROADflow Mobile system with the back office supplier ACS (Spur).

Although Spur and SEA already work together on the successful DTES system for Transport for London, this latest contract with Bristol City Council has enabled Spur and SEA to develop a flexible interface between systems.

The ROADflow suite can now seamlessly pass reviewed evidence packs to the Si-Dem notice processing system, quickly and easily.

Greg Liddell, SEA’s ROADflow Sales Manager, said: “Working with Spur on this opportunity has allowed us to develop a strong technical relationship with which we’re excited to continue into the future. The new interface module presents both new and existing Si-Dem users the chance to benefit from ROADflow enforcement technology.”

DTES upgrade complete

SEA has completed a year-long programme of work upgrading the Digital Traffic Enforcement System (DTES) for use with a new digital CCTV system being deployed by Transport for London (TfL).

The updated DTES system now provides operator workstations with the ability to view video and capture contraventions from four high-quality MPEG IP video streams simultaneously. This allows operators flexibility to capture video relating to one or more parking or loading bay contraventions whilst also actively enforcing a yellow box junction, banned turn or bus lane. A number of usability enhancements have also been implemented, especially in the area of PTZ camera control. Whilst a user has control of a camera, their username is displayed for other users to see. An instant message function allows users to ask another user to release control to them.

DTES also now implements a scheme of protective control, whereby workstations prevent other CCTV users from moving a camera that is protective control, whereby workstations prevent other CCTV users from moving a camera that is protective control, whereby workstations prevent other CCTV users from moving a camera that is protective control, whereby workstations prevent other CCTV users from moving a camera that is protective control, whereby workstations prevent other CCTV users from moving a camera that is protective control, whereby workstations prevent other CCTV users from moving a camera that is protective control, whereby workstations prevent other CCTV users from moving a camera that is protective control, whereby workstations prevent other CCTV users from moving a camera that is protective control, whereby workstations prevent other CCTV users from moving a camera that is protective control, whereby workstations prevent other CCTV users from moving a camera that is protective control, whereby workstations prevent other CCTV users from moving a camera that is protective control, whereby workstations prevent other CCTV users from moving a camera that is protective control, whereby workstations prevent other CCTV users from moving a camera that is protective control, whereby workstations prevent other CCTV users from moving a camera that is protective control, whereby workstations prevent other CCTV users from moving a camera that is protective control, whereby workstations prevent other CCTV users from moving a camera that is protective control, whereby workstations prevent other CCTV users from moving a camera that is protective control, whereby workstations prevent other CCTV users from moving a camera that is protective control, whereby workstations prevent other CCTV users from moving a camera that is protective control, whereby workstations protect the mobility planning and delivery.

The objective of this project is to deliver a new NROL system to better support Network Rail in its heavy resources logistics planning and delivery.

The project is being delivered using an Agile approach, which will see SEA deliver seven drops of functionality over the lifecycle of the project. The Agile approach encourages user engagement and thus reduces the risk of delivering incorrect functionality to the end user. The collaborative approach is working extremely well.

The project team completed the first drop of functionality at the end of 2011, and successfully performed the first iteration of Factory Acceptance Test in January 2012, which was witnessed by the Network Rail Test Assurance Representatives.

SEA launches ROADflow Signal at Security & Policing 2012

SEA recently showcased its ROADflow Signal system at the Security & Policing event in Farnborough. Part of the established and fully accredited ROADflow system, it provides a Red Light Enforcement capability at level crossings.

Without the need for user intervention, as required by traditional ‘attended’ systems, ROADflow Signal is able to automatically detect vehicles attempting to skip lights and barriers using complex, yet robust, video analytic algorithms. The system generates compelling evidence packs which include the vehicle registration number plus live video of the incident which are then securely sent to a back office system for processing via the 3G network. This intelligent system is able to avoid the expensive and time-consuming process of integrating with existing rail infrastructure and can be re-deployed in a matter of hours. The system is currently undergoing live trials at a level crossing in Avonmouth.

The contract for the Network Rail Online Logistics (NROL3) system implementation phase was awarded by Network Rail in October 2011. Valued at circa £2.5 million, the project is a Network Rail business critical application for the ordering, planning, movement and real-time performance management of its heavy resources for engineering work.

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Heat source simulator built in Bristol
As part of the European Space Agency (ESA) programme for space nuclear power, SEA has built a Heat Source Simulator for the French organisation AREVA TA to support the study of Radioisotope Thermoelectric Generators for spacecraft use. The simulator was successfully tested in Bristol achieving its design target of 1000 degrees Kelvin (see right).

The unit mimics the characteristics of a nuclear radioisotope source of a similar size and will be used for system testing until the time when the radioactive source must be used. In two related activities funded by ESA, teams led by SEA are now close to completing a study of a nuclear aerostat and encapsulation system; and have begun the development of a Stirling engine power converter demonstrator.

The simulator consists of a large box containing a high efficiency radiator and a cold box containing the heat source. The radiator is constructed from a large number of heat exchangers, each individually controlled to achieve an accurate simulation of the characteristics of a real radioisotope source.

PowerLink
ESA has awarded SEA a contract to specify, design, develop and demonstrate a scalable system called "PowerLink" for controlling and monitoring multiple low power actuators and sensors via a mass efficient 2 wire 10 Mbps network. The tasks include the design and test of the PowerLink network controller and the PowerLink terminal that will interface with a variety of sensors and actuators.

Generally electronic functions require two fundamental resources – power and data exchange. Normally the power and data are provided over independent pairs of wires since the source of power and the source of the data-handling are managed by functionally separated units and the power and data signals have different interface characteristics. The consequence of this for interfacing an electronic sensor or actuator is that a minimum of 2 wires is required for the power bus and 2 wires for the data bus. For spacecraft this approach creates a high harness mass solution, leading to higher launch costs. The problem of harness mass is further multiplied by the need of spacecraft to have a relatively high number of simple low mass sensors and actuators – it is often the case that the mass of the connecting harness exceeds the mass of the sensor/actuator. Further large numbers of wires require a large number of connector pins and is inflexible to late changes in the number of sensors needed.

SpaceWire works in the same way as the USB standard for personal computing, linking instruments, mass memory as well as other spacecraft subsystems, allowing routine connection of devices and functions.

SEA is a contributing member of the ESA SpaceWire Working Group and has been awarded a contract from ESA to define a SpaceWire backplane specification and assist in the development of a new high-speed rugged backplane connector. Working with Hypertac, the specification will offer a standardised high-speed unit backplane interface, permitting electronic modules from vendors around the world to be integrated together quickly and simply to create new spacecraft avionics equipments, thereby reducing risks and the need to re-design the modules.

FutureTech
Plasma buoyancy theory demonstrated
SEA, with financial support from the Technology Strategy Board, has undertaken a 5-month project for the first step in the development of the innovative concept of Plasmas Buoyancy: this technology has the potential to lead to an evolution in lighter-than-air vehicles by replacing a traditional balloon envelope with an electro-magnetically confined plasma. To this end, plasma experts at RAL assisted in the theory development leading to the construction of a demonstrator at the University of Bath. The demonstrator successfully created the required plasma and signs of the desired electro-magnetic confinement system were observed, but follow up testing is required to confirm and build upon these results.

Smart Microsystems
SEA has won a £10k contract from ESA for Smart Microsystems for space applications, a 12-month study to review the current state of European sensor and actuator architectures. The study aims to define and specify three or more smart Microsystems concepts that can be developed in subsequent projects into commercially viable products that combine miniaturised sensors and actuators, for example, to reduce the amount of harnessing required on spacecraft.

Lunar dust analysis
SEA was awarded a contract funded under the ESA General Studies Programme to study the preliminary design for an instrument to fly on a Lunar Lander.

The Lander will be deployed to the Lunar South Pole in 2018 and the payload will perform a number of measurements to determine the properties of the local regolith (lunar soil), including dust particle size (nanometre level) and distribution as well as the chemical and mineralogical composition.

The instrument being studied (known as L-DAP – Lunar Dust Analyser Package) comprises a number of key technologies being developed in Europe. SEA is bringing together this expertise and experience to provide a highly compact and integrated unit (target mass of 4 kg). Such light-weight packages are a key feature of future ESA space exploration missions and invaluable for determining the environment for manned missions to the Moon and other planetary bodies. The one-year study is coming to its conclusion and the results look very promising for the next phase.

The Cloud and Precipitation Airborne Radiometer
SEA is leading the Cloud and Precipitation Airborne Radiometer (CaPAR) project, an ESA contract to provide radiometer receivers for the International Sub-Millimetre Radiometer (ISMAR), which is owned and operated by the Met Office. This radiometer is to make its cloud and precipitation observations using 12 sub-bands in a frequency range of 118 to 664 GHz, as an airborne demonstrator for possible future space missions. ISMAR is designed to fly on the Facility for Airborne Atmospheric Measurements (FAAM) aircraft, which is a modified BAe 146-301.

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Testing Einstein equivalence principle
One of the candidates for the next medium class scientific ESA mission is STE-QUEST. Among the objectives of this fundamental physics mission is a test of the Einstein equivalence principle – that inertial mass and gravitational mass are the same thing.

Using cold atom interferometers, STE-QUEST will compare the propagation of coherent matter waves of Rubidium-85 and Rubidium-87 under the influence of the Earth’s gravity. SEA is part of the team part-funded by the UK Space Agency led in the UK by the University of Birmingham studying this atom interferometer. SEA will provide advice on how to engineer the hardware for space, and how to implement the challenging electronics to operate the interferometers.
SEA delivers portable DECKsim product to Eurocopter Training Services (ETS)

SEA has successfully delivered the first of three portable DECKsim training systems to ETS. It has supported ETS in gaining certification from TOTAL for running Helicopter Landing Officer’s (HLO’s) training courses on commercial oil and gas platforms.

Recent studies have concentrated upon:

- The continued validation of the NATO Submarine Rescue System (NSRS) simulation against sea trials data gathered in 2011;
- Support to the production of a Standardisation Agreement (STANAG) and Allied Naval Engineering Publication (ANEP) to promote the wider use of ‘Virtual Ship’ simulation studies across NATO;
- Assessment of the Visual Landing Aids and flight deck markings for the Queen Elizabeth Class helicopter simulator at Culdrose.

Manager in DE&S for the naval simulation-based acquisition programme VISTA and customer for the above work, Dr John Duncan said: “SEA is becoming a world-leader in building naval engineering simulations that provide fundamental support to project risk and safety assessment. Simulations that are validated complement traditional sea trials, model testing and SME opinion offering excellent value for money.”

Further ECS work on Astute Class submarines

SEA has been selected by BAE Systems to provide two additional External Communication Systems (ECS) for the Royal Navy’s Astute class of submarine.

The work is valued at over £3m in total and will be carried out over the next 42 months. Detailed contract negotiations continue, with full contract award to follow.

The work is additional to SEA’s contract for ECS infrastructure for Audacious announced in April 2010. As a result of these contracts SEA will provide ECS for the Astute Class submarines Artful (boat 3), Audacious (boat 4) and Anson (boat 5). SEA is working with Thales Underwater Systems Ltd, Selex Communications and Aalii Technologies Ltd to deliver ECS.

Andrew Thomas, Cohort Chief Executive, commented: “This decision represents a strong vote of confidence in SEA’s capabilities and its naval communications technology. It is also an important step forward for the business and provides strong contribution to its order book for the next couple of years. ECS is a world leading system that we hope will be adopted for further Astute Class boats and other naval platforms internationally.”

SEA adapts to defence research needs

SEA has continued to successfully deliver value-for-money exploitable research to the MoD. An important reason behind this success is the investment SEA has put into developing a unique approach to the management of MoD research.

The MoD’s Future Character of Conflict (FCoC) report sets out global and strategic trends for defence. In particular it focuses on the concept of agility, which ‘must be institutionalised at all levels of the organisation to the individual’. Under the auspices of the MoD programme, a study was carried out to explore the concept of individual agility, in addition to a review of current literature, a ‘card sort’ exercise was conducted with a number of military personnel to determine the elements of individual agility and the required standard for subsequent exploitation. They have developed an adaptive technical assurance procedure that enables them to manage the quality of output across the full spectrum of research.

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SEA is also delivering managed research to industry partners and we are confident companies can benefit from contracting SEA to work with their R&D departments to manage the delivery of timely and exploitable research.
New logo unveiled

SEA has unveiled its new logo which provides the company with a more up-to-date look whilst incorporating a similar shape to the old graphic device.

The logo, which features throughout this issue, has been configured to complement the other companies in the Cohort group and reflects the dynamic and direction of SEA.

Nadia Hope, SEA’s Marketing Officer said “SEA is about innovation and forward thinking and we feel this has been reflected in the new logo design.”

New faces

SEA appoints new Finance Director

Andrew Ferguson has been appointed as Finance Director for SEA. Andrew trained as a Chartered Accountant with Ernst & Young and his early career included financial and strategic management roles with Guinness plc in London.

Andrew moved to the West Country in 1995 as Finance Director of Wincanton Logistics, then was subsequently appointed as FD of network operations at Orange in Bristol. Since 2005 Andrew has fulfilled a number of interim FD roles in aerospace (GE Aviation and Goodrich) and in the SME sector. Andrew has a BSc in Pharmacology from King’s College, London and also a Masters in Business Administration.

Also joining SEA: we are also pleased to welcome Edward Mulraney (Technical Clerk), Nigel Williams (CAD Engineer) and Darren Harvey (Principal Consultant).

Visit by University of Delft

Recognition of SEA’s position as a central member of the aerospace industry in the South West was demonstrated recently by a visit from the Technical University of Delft (TUD).

A group of students in the final year of their Masters courses in Engineering visited several companies in the region in order to better understand the engineering careers available with local companies and spent a day with SEA.

SEA works with many universities in the UK and overseas, and this visit was largely the result of the ongoing collaboration between SEA and TUD on a study contract for the European Space Agency of a scientific payload for a proposed robotic spacecraft to study the characteristics of the fine particles in the regolith at the lunar South Pole.

One of the first to achieve EN/AS9100:2009 (Rev C) accreditation

SEA has successfully upgraded to the new 2009 (Rev C) version of EN/AS9100.

The company was one of the first in the UK to be upgraded to Rev C by Bureau Veritas.

The increased scope of accreditation includes defence and space in addition to aerospace and aligns well with the scope of SEA’s business. In addition to achieving AS9100 Rev C, our ISO9100:2008 and TickIT certification was also successfully renewed.

David Broadbent, SEA Quality Manager said: “Achieving an early upgrade represents a significant demonstration of SEA’s commitment to quality.”

What ‘Mo’ did you grow?

Serious amounts of facial hair appeared in November as the SEA MoBros sported hairy upper lips in support of the Movember charity — raising a staggering £1,634. A special mention must go to the only female SEAer taking part: Nice mo, Clare. Sure it was a false one?

Bristol looking seriously serious (top) while Beckington opt for the Village People approach