UK Naval Engineering Science & Technology

Annual Report - 2015

UK Naval Engineering Science and Technology (UKNEST) Forum

ANNUAL REPORT 2015

The Year in Context

Introduction

2015 saw UK NEST celebrate its tenth anniversary. During this decade, UK NEST has continued to follow its original mission:

"To provide a forum for the UK's professional naval engineering, science and technology community for addressing issues of common concern, fostering specific professional development needs, and giving a focal point for interaction with, and influencing the wider Government and industrial community."

In this capacity, it has taken a leading role in the issues relating to education & training and naval technology research & development. UK NEST has supported both the Marine Industry Alliance (MIA) (Marine Industry Leadership Council (MILC)) and Defence Growth Partnership (DGP) initiatives at working level and continue to be one of the principal catalysts for these national programmes.

In March, UK NEST appointed Tony Graham as Chairman to replace Rear Admiral Nigel Guild who retired after four years in the post. Nigel presided over a number of key activities, most notably, the positioning of UK NEST within the MILC and MIA government led maritime focused initiatives.

Tony has introduced a Campaign Plan that will deliver a three year programme of work focused on three specific areas: People, Technology and Communications. A new vision statement has been created for UK NEST:

"Thriving through great people and superior technology"

Details of the each Working Group objectives can be found in the individual reports.

Progress on 2014 Tactical Objectives

1. Creating a clear UK NEST brand and image

Preliminary work has begun and a survey was conducted across the graduates within UK NEST member organisations. This has identified specific factors that influence students to both join and to remain within the sector. These findings have been incorporated into the design of the new website. The newly created Communications Working Group will advance the development of the brand identity.

2. Development & launch of a re-developed website

A competitive selection process was undertaken by the graduates within FutureNEST. The design specification was also developed by the graduates. The website has been created and is in process of final approval before public release.

3. Greater emphasis on the Science & Technology with a focus on these areas for the 2015 Scholarship awards

The 2015 Scholarship scheme attracted over sixty applicants from a broader range of universities and degree courses. Individual university points of contact have been established at over thirty colleges.

4. Coordinated approach to graduate recruitment

A pilot project was planned but was unfortunately cancelled because of an unexpected change to the Royal Navy operational programme. The project will be carried forward to 2016.

5. Development of a Naval Skills event to encourage closer working with academia; again focussing on STM departments.

This was postponed until a review of the requirements has been carried out by the new People Working Group.

6. Developing the Marine Technology roadmap

A comprehensive review and refresh has been completed of the Naval Technology roadmap. In addition, UK NEST was a leading contributor to the development of the Marine Industries Technologies Roadmap 2015. This will be used as a reference document for subsequent Innovate UK Research and Development funding priorities.

7. Continued support for the MAS initiatives and the Marine Centre of Excellence

UKNEST companies remain involved in the CMIS initiative at Portsdown, under the DGP umbrella. In addition, several UK NEST Members were involved with the launch of the Startpoint Maritime Combat Systems initiative that was launched at DSEI in September.

8. Working with government departments to improve the export business processes & understanding the totality of the UK capabilities to address export markets

A report on the interdependencies of Government departments was produced together with a draft proposal of the UK Naval capabilities. The Export Working Group has completed its original objectives and has been "stood-down".

9. Continuing Thought Leadership in both MIA (MILC) and DGP Work-Streams

UK NEST Members are actively involved with all Working Groups and committees associated with these initiatives.

Events of the year

2015 saw the publication of the National Security and Strategic Defence & Security Review 2015 – *A Secure and Prosperous United Kingdom*.

The key factors for the Maritime and Naval sectors were:

- Restatement of the three principal roles of the Royal Navy; delivery of the nuclear deterrent, maritime power projection and world-class amphibious forces.
- The role of technology and appropriate skills was emphasized.
- A new cross-government, Emerging Technologies and Innovation Analysis Cell will be created with links to academia and private industry.
- Commitment to refresh the Defence Industrial Strategy.
- Publication of a new National Shipbuilding Strategy in 2016.
- Commitment to the Successor submarine programme.
- Procurement of nine P8 Maritime Patrol aircraft to recover the capability that was lost when the Nimrod MR4A programme was cancelled in the 2010 SDSR.
- Formation of a core Maritime Task Group around the two Queen Elizabeth aircraft carriers.
- Enhancement of one of the aircraft carriers to support the amphibious capability (and thus the retirement of HMS Ocean).
- Increase in the number of F35 Lightening aircraft in the early 2020s to exploit the Maritime Task Group capability.
- Procurement of three new logistics ships to support the Maritime Task Group.
- Maintaining a fleet of at least 19 destroyers and frigates with a potential to increase the total number by the 2030s.
- Type 26 Global Combat Ship programme to replace the ASW capabilities of the Type 23s. Initially, there is a commitment to procure eight platforms.
- Studies to develop a new class of lighter and flexible frigates that will supplement the Type 26 and should provide more potential as an exportable platform.
- Procurement of an additional 2 Offshore Patrol Vessels (that suggests further delays in the Type 26 programme).
- Retention of the Royal Marines

A very successful DSEI event was staged in September in which all UK NEST Members participated. The exhibition included the launch of the Maritime Combat Systems collaboration; Startpoint. This received wide media coverage and will form the basis for an on-going initiative.

In terms of the existing programmes, work has continued on the Queen Elizabeth class aircraft carriers. The gas turbines have been run on HMS Queen Elizabeth and the mission system is being commissioned. With the arrival of the Forward Island in December, all of the construction "blocks" for HMS Prince of Wales have been delivered to Rosyth. The construction of the second aircraft carrier is accelerating, supported by incorporating lessons learned from HMS Queen Elizabeth that include far higher levels of outfit being completed before delivery from the build 'yards. The commitment shown in the SDSR to the operation of both ships, together with the enhancements to support amphibious operations and the intention to increase the F35 procurement during the early 2020s, demonstrate the importance of the programme

for the future UK Naval capabilities. The target date for the initial operating capability remains 2020 with preliminary flying trials in 2018.

The third Astute class submarine (HMS Artful) was handed over to the Royal Navy in December and will commence its commencing the commissioning programme in 2016. The UK NEST Programme Board, held in conjunction with the 2015/16 Scholars provided a rare opportunity to see a number of Astute submarines in various stages of construction in the Devonshire Dock Hall facility.

The Type 26 programme continues with the UK MOD signing a demonstration contract worth £859m with BAE Systems to support the initial assessment phase, beginning in early April 2015. The investment will be used to procure long-lead items (gas turbines, diesel generators and steering gear) for the first three ships, as well as to develop shore-based testing facilities.

The Type 26 GCS is expected to begin the manufacturing phase in Glasgow in 2016.

The major capability upgrade to the Type 23 frigates is continuing.

BAE Systems have started work on the design and build contract for an initial batch of three OPVs that will be delivered from 2017. These 90m vessels offer potential for further export orders to Malaysia and will form the basis for the second batch of vessels identified in the 2015 SDSR.

The Naval air capability is being improved through the arrival of the first of the new Lynx Wildcat helicopters. The training requirements for the Merlin and Lynx helicopter programmes, particularly associated with the future aircraft carriers, have led to considerable expansion of the Naval air station at Culdrose.

Construction of the first of the four new RFA Tankers (RFA Tidespring) progressed from keel-laying in January to preparations for transfer to the UK in early 2016. The ship was named at a ceremony attended by Lady Boyce, the ship sponsor, in October and will begin to enter service in late 2016. A&P were selected as the company responsible for the final fitting out and initial support.

UK NEST has continued to feature on both the Marine Industries Leadership Council/Marine Industries Alliance (MILC/MIA) and the Defence Growth Partnership (DGP). In terms of MILC, the Chairman continues to serve on the Steering Board. Additionally, UK NEST is well represented on the Technology & Innovation, Skills and Image Working Groups. In particular, UK NEST led much of the work involved in the creation of a technology roadmap and, until recently provided effective leadership of the Skills team. Progress within MILC continues to be slow. However, progress has been achieved in coordinating the efforts of the Marine Industries Alliance (MIA) and Maritime UK.

Training, Education & Development (TED) Working Group Report

1. Strategy and objectives for 2014

The UK NEST TED strategy has focused on five activities during 2015:

a) Increasing the number of applications for the Scholarship scheme both in terms of targeted universities and wider range of courses (particularly science and technology)
b) Improve the effectiveness of the Scholarship scheme, taking advantage of collaborative industry-wide resource, support for our sector particularly in respect of the mentoring programme
c) Rebuilding the UK NEST website with focus on attracting graduates to the sector.
d) A survey was conducted across UK NEST Member organisations to determine the factors that attract and retain graduates.
e) Investigate opportunities to promote the Naval sector "enterprise" to prospective employees (graduates).

All these objectives have been substantially progressed during the last 12 months

2. UKNEST/Lloyds Register Foundation Scholarship

It has been another successful year for our Scholarship Programme.

We had reviewed our activities in promoting and advertising the scheme, selecting interview candidates and ultimately selection of successful scholars and this year saw the benefits of this refreshed approach.

We were able to target a wider audience through largely electronic media, past scholars and UKNEST Members FutureNEST participants. This was evidenced by the breadth of skills and study subjects of the applicants. For another year there was a growing number of applicants of very high calibre.

As in pervious year's, the 2015 scheme funded 12 students (6 UK NEST and 6 Lloyd's Register Foundation). Encouragingly the LR Foundation again commented very positively on the calibre of the 2015 Scholars.

Information advertising the scheme was circulated to over 25 universities (targeted at specific science, engineering and technology faculties and schools). A total of 62 applications was received (more than double previous campaigns). All applications were reviewed by a selection panel and 18 students down-selected for interview. Interviews were conducted over two days by representatives from UK NEST and Lloyd's Register Foundation at the Lloyd's Register offices in London. Thirteen students were selected (one, particularly impressive student to be deferred until 2016/17).

Successful scholars and their industry mentors were invited to the November Programme Board meeting at BAE Submarines, Barrow in November for a 'scholar's day'. The willingness of individuals to volunteer as mentors is very much appreciated and has been cited by past Scholars as one of the unique aspects of our scheme.

A series of workshops was held during which the scholars actively participated providing some excellent feedback for the Members and informing the future direction of the UKNEST efforts in this respect. A shipyard tour and dinner ended with formal presentation of Scholarship Certificates.

3. Graduate Survey

As part of the development of the website, a survey was conducted across Member organisations to establish the key factors that both attracted graduates into the sector and retain their interests after joining. Over 300 graduates took part in the survey that was targeted at employees in the first four years of their careers. The results confirmed a number of observations that are common across many engineering-based organisations in the UK. In particular that STEM graduates are male dominated. The majority of the respondents were Mechanical Engineers (Masters and Bachelors). Whilst graduate training schemes, progression to chartered status and exciting projects were factors in attracting students, their retention was based on the enjoyable working environments (and locations) and well defined career opportunities. The findings of the survey have been incorporated in the design of the website and have been included as factors to be considered in future branding of UK NEST.

4. Collaborative Events

A number of opportunities have been identified where an "Enterprise" approach could be adopted to better present the collaborative nature of the Naval sector. These have included careers fairs and other university based events. As a pilot, a project was organised to bring summer placement students from UK NEST Members together with RN interns for a two day "get-together" in Portsmouth. Unfortunately, because of unexpected operational issues, the event was cancelled. However, the project will be carried forward to 2016.

Forward Agenda.

A review of the working structure of UKNEST has been undertaken and a number of "themes" identified in line with the Campaign Plan.

The UKNEST TED Group has now become the 'People' Working Group led by Natalie Desty (Matchtech).

Priorities for the coming period are centred on the four topics: Attract, Retain, Recruit & Develop with following objectives:

Attract:

- *Increase the "value" of our scholarships*
- *Support the Defence STEM strategy*
- *Identify career pathways*
- *Increase number of female / BAME applications to Naval sector*

Retain:

- *Create an End of Career Management proposal*
- *Make the Naval sector the lowest rated for outward career transfer*

Recruit:

- *Create a Returners programme*
- *Create a Transfer of Learning Programme*

Develop:

- *Understand the needs of the sector over the next 5 years*

- *Create and operate a Naval Enterprise Manpower Model*

In addition, the Group will consider the future of the funding for the Scholarship scheme as Lloyds Register Foundation support will cease in 2017.

Science and Technology Working Group Report

1. Introduction

The Science & Technology Programme Team (S&T PT) has active participation from across the UKNEST membership with representatives from Atlas, Babcock, BAE Systems, BMT, DE&S/dstl , QinetiQ, Rolls Royce, SEA and Thales. There has also been participation from FutureNEST throughout the year and for discrete projects. During 2015, the S&T PT continued on its mission to "Achieve funding opportunities not possible for any one company to access and achieve maximum gearing on behalf of the UKNEST membership". The S&T PT's key objective is to identify those technologies which will provide greatest benefit to UK companies from an export perspective and provide government with that view.

The regular S&T PT sessions adopt a workshop format to maintain progressing ideas in a collaborative manner, primarily working to further develop the technology roadmap and inform the refreshed UK Marine Technologies Roadmap delivered by the Marine Industries Alliance and Innovate UK in 2015. This has involved close coordination with Dstl and DE&S Science Gateway staff to promote the use of a single shared roadmap to align S&T efforts across the naval domain.

Major Achievements 2015

2. Innovate UK Vessel Efficiency Research Calls

The S&T PT continues to inform and support Innovate UK Vessel Efficiency Research Competitions.

Vessel Efficiency 3 Research Competition opened on 12th January 2015 following successful consortia building events in September 2014 at which UKNEST member companies attended. The competition focused on three themes;

1. Electrical systems
2. Performance Monitoring
3. Energy Management and Recovery

Projects are expected to last 12-36 months and have project costs from £500k to £1.5m - with 50% Innovate UK funding, or 60% for SMEs.

3. Naval Technology Roadmap Refresh

The major activity for UKNEST S&T Programme Team during 2015 has been to completely refresh the naval technology roadmap. This has involved a series of facilitated workshops with Subject Matter Experts across UKNEST member companies to identify key technology development trends and priorities for the naval sector.

All aspects of technologies relating to ships, submarines and unmanned systems have been addressed using the categories of combat systems, power and propulsion and platforms. Questions asked of workshop delegates included:

- What are the most attractive market opportunities for UK export?
- What products/systems are required to capitalise on these opportunities?
- What underpinning technologies are required to achieve these products/systems?
- What is the most important technology gap to be addressed?

Using the output from these workshops the S&T Programme Team arrived at a consensus on the Top 13 Priority Technology Opportunities to be addressed in the Naval Technologies Roadmap. These are:

1. **Electrical Systems** (R&D in Power Management Systems, Electrical Architecture, Fault Management & Protection, Torque Dense Motors & Generators)
2. **Energy Recovery**
3. **Unmanned Underwater Vehicle (UUV) Power & Propulsion** to extend duration and power of systems
4. **Energy Storage** (*this is a cross-cutting technology where we need to pool resources across many industrial sectors – includes super capacitors, flywheels, batteries, fuel cells)
5. **Distributed Command & Control (C2) Architecture**
6. **Pervasive Secure Communications** and (multi-domain) Connectivity
7. **Human Interaction** with Information (Sense Making) incorporating Human Computer Interaction (HCI) and Big Data Analytics
8. **High Power Effectors** (Directed Energy Weapons, Cyber and Electronic Warfare)
9. **Trusted Autonomy**
10. **Information Based Decision Support Systems** for Manufacture and Maintenance of Platforms reducing CAPEX and OPEX to increase competitiveness
11. **Thermal Management Systems** to contend with increasing power demands on vessel
12. **Intelligent Effective Integration** during the ship building process (by better utilising information systems and simulation software) to reduce rework and cost
13. **Trusted Autonomous Systems on Ships**

To focus down further, the S&T Programme Team has selected 3 of the above Technology Areas to develop a greater level of detail needed to describe the technology development required to achieve valuable and exportable products, systems and/or services. The areas of focus for 2016 are:

1. **Unmanned Underwater Vehicle (UUV) Power & Propulsion** to extend duration and power of systems
2. **Pervasive Secure Communications and (multi-domain) Connectivity** and
3. **Trusted Autonomy**

During 2016 the S&T Programme Team will describe Research and Development (R&D) aims and challenges for each of these focus areas and prepare business cases for R&D investment.

4. Marine Industry Technology Roadmap

A refresh of the 1st Marine Industries Roadmap took place between January 2015 and April 2015. UKNEST S&T Programme Team actively contributed to Version 2 of the Roadmap by providing a detailed naval perspective and influenced the description of the Priority Opportunities in line with the UKNEST Naval Technologies Roadmap Priority Opportunities. A link to the Marine Industries Technologies Roadmap 2015 can be found at: www.ukmarinealliance.co.uk

The importance of the Marine Industries Technologies Roadmap 2015 cannot be understated as it will be used as a reference document for subsequent Innovate UK Research and Development funding priorities.

5. FutureNEST

Building on the success of FutureNEST projects last year, the S&T Programme Team has maintained a close engagement with FutureNEST members. There is standing representation at all S&T sessions and in addition discrete projects have been conducted. The use of senior mentors has been particularly valuable, as has the exposure given by presenting the outcomes to the full group.

Work during 2015 concentrated on facilitating workshops and gathering data to inform the refreshing of the naval technology roadmap. FutureNEST remain an essential resource to progress the S&T Programme Team agenda. In 2016 they will be involved in the development of the detailed description of research and development priorities and associated business cases under the mentorship of selected S&T Programme Team members.

6. Forward Agenda

Looking forward to 2016 the S&T Programme Team will be working to identify suitable Research and Development funding sources, develop business cases for investment in the priority Technology Areas of Unmanned Underwater Vehicle (UUV) Power & Propulsion, Pervasive Secure Communications and (multi-domain) Connectivity and Trusted Autonomy. In so doing, the S&T Programme Team will ensure alignment with activities ongoing with MOD and Other Government Departments to achieve maximum gearing of effort.

2016 will also see important national and international events taking place, including Oceanology 2016 in March (London), DIMDEX 2016 in March (Doha), INEC in April (Bristol), Above Water Defence in April (Portsmouth), UDT 2016 in June (Oslo), Engine as a Weapon in June (Bath), SMM in September (Hamburg), Euronaval in October (Paris) and ExpoNaval in November (Chile).

UKNEST members will be promoting the best of UK naval science & technology capabilities at these venues.

Export Working Group Report

1. Introduction

The Export Working Group (Export WG) was set up in 2014 and held its first meeting in May 2014, and subsequently held a number of meetings during the remainder of that year and into 2015. The group has had active participation from UKNEST members with representatives from Atlas, Babcock, Cammell Laird, QinetiQ, SEA, Thales, and UKTI DSO.

FutureNEST representatives have also been a constant presence at the Export WG meetings with participant's completing discrete projects, expanding their experiences beyond the engineering environment.

The Export WG came into existence because it was felt that the global market has a lack of understanding of what the UK Naval Enterprise can offer to potential customers. The Export WG would seek to promote an approach for structured international engagement at a systems level, not solely platform based.

It was agreed on the initial set up by the UKNEST Steering Group that the working group would have an initial life of 18 months, in line with previous UKNEST working groups set up to look at discrete problems.

2. Major Achievements 2015

With the Export WG in its infancy during the previous year, the primary focus had been agreeing a set of Terms of Reference between members and initiating a number of FutureNEST projects. This year the focus has been on gaining an understanding of stakeholders and the approach being adopted to the export market, through dialogue with a number of stakeholder groups, and it is clear that whilst there is a significant challenge for the UK Naval sector to grow in the Export market, there are already a growing number of initiatives which are aiming to improve the performance in this area. Additionally the group has undertaken a number of projects with our FutureNEST colleagues, aimed at raising awareness of export related matters.

With an increasing amount of messaging emanating from the UK defence and naval sector, the UKNEST Steering Group decided that it was not appropriate to introduce the UKNEST brand within the DSEi environment, hence it was decided to not proceed with the 'Rich Picture' depicting UKNEST members within the UK Naval environment and how they can assist potential customers, which was going to be used as a promotional aide at DSEi. As an alternative many of the UKNEST member organisations supported a number of initiatives focused around the DSEi event, including Startpoint.

Overall the DSEi event was seen by many stakeholders to have been one of the most successful of such events in recent times, with the UK Naval sector seen to be playing a very active role.

2.1 The Changing Seascape

Globally over the period between 2004-2013, naval exports represented 15% of the total global defence exports; however in the UK, Naval exports comprised only 7% of

UK defence exports over the same period, indicating that the UK Naval sector lags behind the global average.

Additionally for FY13/14, official UK Government figures estimated that the UK exported £9.8bn across defence, with the Naval sector accounting for just 2% (~£216m). Clearly the sector has to increase its performance in this area to meet global levels, and to be seen to be contributing to the prosperity agenda.

With an increasing focus on exports by the UK government there has been a significant increase in the attention being paid by and the number of bodies which has a focus on exports, these include new initiatives within:

- Maritime Industries Leadership Council (MILC)
- Defence Growth Partnership (DGP)
- Centre for Maritime Intelligence Systems (CMIS)
- Startpoint – Maritime Mission Systems
- UKTI/DSO – Sub (Submarine) Club

During 2015 the landscape changed in the positive sense with the establishment of the Defence Growth Partnership (DGP) and the associated Defence Systems Centre in Farnborough. Additionally and associated with the DGP we now have the Centre for Maritime Intelligent Systems (CMIS), which is also looking to engage with overseas customers, particularly form an autonomous systems point of view.

A separate initiative known as Startpoint, driven by DE&S, Maritime Mission Systems, targeted DSEi as a launch of a brand that would bring together the knowledge and capability gained from providing the UK Royal Navy with its state of the art Mission Systems. The presence and stand at DSEi gained some significant publicity form its futuristic look at surface combatants of the future.

Some years ago an informal forum (known as 'The Sub Club') was started by UKTI/DSO for Naval exporting companies to exchange information on the Jangbogo III diesel electric submarine programme developing in the Republic of Korea. This type of approach is particularly important where UK systems and equipment companies are chasing input into a programme not associated with the sale of a UK platform export, but collectively the opportunities can be significant for UK industry.
The forum was considered a success by both industry and government participants, but was shut down as the programme matured. With the emergence of the SEA1000 programme in Australia, UKTI/DSO re-established the forum utilising the corporate knowledge from many of the UKNEST member companies. It is envisaged that the forum will be extended to cover programmes in Norway and The Netherlands.
UKNEST members have played an active role in all of these initiatives, but clearly there is scope to both streamline the initiatives to achieve more focus and assist the UK Naval sector to collaborate in order to achieve a higher scale of impact into a programme, particularly when the programme does not involve the sale of a UK platform.

2.2 FutureNEST

FutureNEST continued to make a valuable contribution to the Export WG during 2015, participating in working group meetings and undertaking projects. During the

period that the working group was operational the FutureNEST team contributed to a range of short project aimed at sharing knowledge and raising the awareness of the FutureNEST participants.

- UK Stakeholder Analysis
- Export Market Needs Analysis
- Reviewing the Export Process
- UKTI Contacts Framework
- UK Capability Analysis
- UK Enterprise Promotional Material

Due to the changes in the strategic direction regarding the Export WG, the last two projects were not able to come to a logical conclusion, however the work performed has been recorded.

Our FutureNEST colleagues played a significant role in the Startpoint stand at DSEi, interacting with potential customers, and presenting their experiences of working within the UK Naval environment,

3. Forward Agenda

It was agreed that the group would have an initial life of 18 months, using DSEI 2015 in September 2015 as a milestone. Following a review of the strategic direction of UKNEST undertaken at the Steering Group meetings during 2015, it was decided to suspend the Export WG and to focus export related aspect through the People and the Science & Technology working groups,

Management & Administration

IMarEST continues to provide administrative support with a secretary (John Wills) and Executive Coordinator (Dr Ben Dobson) facilitating the day-to-day operations of the Forum.

Steering/Programme Board

The Steering Board, subsequently renamed Programme Board, met three times during the year at SEA (Beckington), Matchtech (Fareham) and BAE Systems Submarines (Barrow). The first meeting was chaired by the retiring chairman, Nigel Guild, and the subsequent meetings by the new Chairman, Tony Graham.

Workshops were held at each of the meetings that have dealt with:

- Science, Technology and Skills agenda to be recommended for inclusion in the 2015 SDSR.
- A new vision and mission for UK NEST
- Review of the new website and recommendations for future development

Co-ordination Group

The Co-ordination Group met three times during the year between the Steering/Programme Board meetings to develop and prioritise the on-going agenda. The September meeting included a tenth anniversary dinner that was attended by pervious Chairmen of UK NEST.

Terms of Reference

See Members Area: www.uknest.org

Membership

The Members for 2015 were:

Atlas Elektronik
Babcock Marine & Technology
BAE Systems - Maritime Systems
BAE Systems - Naval Ships
BAE Systems - Submarines
BMT Defence Services
Cammell Laird
GE Power Conversion
DSTL
IMarEST
L3 Marine Systems
Lloyd's Register
Matchtech
Ministry of Defence
QinetiQ
RINA
Rolls-Royce
Royal Navy
SEA
Thales UK

Finance

UKNEST ended the year with a balance of £67k, representing a small surplus on the previous year.
Subscribing membership has risen once more and now stands at its highest of 17 companies.
The new chairman has instigated a finer financial control to include all the UKNEST Sub Groups (Programme Groups)."

Agenda 2016

The focus in 2016 will be to establish the Campaign Plan, associated Working groups and individual projects. The specific objectives of the projects will be focused on:

- Launch of the redeveloped website
- Re-branding UK NEST
- Increasing the "value" of the scholarship scheme and

- Increase media coverage of UK NEST activities to promote People and Technology initiatives.
- Identifying and addressing the causes for the mid-career issues
- Scope and initiate an Enterprise resource model
- Maintain technology roadmap
- Generate funded R&D programme integrated across academia, government and private industry
- Promoting UK technology at National and International exhibitions and conferences