

Unmanned Underwater Vehicle Showcase (UUVS 2007)

The ninth Unmanned Underwater Vehicle Showcase took place at the National Oceanography Centre (NOC), Southampton, from 26th to 27th September 2007. This conference/exhibition is one of the few (and in western Europe the only) dedicated to UUVs only.<P>

Although modest in size compared with, for example, Ocean Business 2007, which was also held at the NOC, the UUVS with its 50 exhibitors, 86 registered delegates and 350 visitors attracted many with an interest in Autonomous Underwater Vehicles (AUVs) and Remotely Operated Vehicles (ROVs) and related industry. The conference delegates were classified as high quality, with good questions and discussions. Although quieter than last year, the exhibitors were generally very positive on the event, mentioning new contracts and/or promising contacts, and agreed that quality counts more than visitor numbers do (i.e. no 'tourists'). The exhibition also gave them the opportunity to speak to colleagues in the UUV field.

The University of Southampton was the winner of the 2007 Student Autonomous Underwater Challenge – Europe. Is there perhaps a connection with the series of UUVS conferences in Southampton?

The Conference

The conference-driven UUVS gave an update on the progress of rapid developments in this field. All 20+ papers had been invited by the organising committee, which had great influence on quality and theme. The subjects highlighted the developments in the commercial use of the vehicles (for example, in the oil and gas sector), while also paying attention to military and scientific applications. Papers were presented by international experts from, for example, the USA, UK, Italy, Norway, Denmark, Iceland and France.

Delegates approved of the conference programme, formulated by a committee of experts drawn from the UUV industry and academia and chaired by Professor David Lane. The presentations with question time, exhibition stands, breaks and the very well attended conference dinner offered ample opportunity for discussion and exchange of views on the problems, progress and opportunities of UUVs. The questions and discussions revealed the good quality of the delegates.

The first presentation, by John Westwood on the 'Market Prospects for AUVs', gave an interesting overview on what the future might hold for UUVs (see also the article by John Westwood on page 22 in this issue). After this presentation, David Lane talked to the audience about the highlights of topical technology developments for UUVs.

The commercially orientated papers provided inside information on the variety of uses of UUVs in the offshore industry. Not only the 'traditional' role of the AUV in bringing sensors close to the seabed for accurate and efficient surveying, but more specifically projects concerning investigation of the role of AUVs in pipe and structure inspection and intervention. These activities imply the importance of hovering for the AUV industry and of AUVs becoming more independent in their mission execution, i.e. reacting autonomously to changing conditions or unexpected events. The papers included the experiences with ROVs and AUVs, for example, of an ROV-operated seabed drilling and coring system, and surveying under ice.

AUVs currently have their place not only in hydrographic surveying and environmental mapping, but also where autonomous reactions are needed, for example, when following tiny plankton.

The military orientated papers clearly showed the military value of UUVs and their already impressive use in various capacities. Not only for covert operations and rapid environmental assessment, but also for activities such as underwater mine neutralisation, including automatic target recognition and inspection in confined and geometrically complex volumes of water, such as under and around pier and piling structures as well as ship hulls. However, the military's presence was not as large as previously, obviously due to other commitments and/or a smaller budget.

The technology-orientated papers focussed on communication, battery technology, motion sensors and sonar developments for AUVs and improvements of their autonomy ('intelligence'), and – not forgetting – training by simulation.

The conference proceedings can be ordered from Reed Exhibitions at (web reference 1) for GBP25 (US\$51) plus VAT and postage.

The Exhibition

Alongside the conference, an exhibition was held in the NOC buildings around the conference room. UUVs were on display, ranging from small ROVs such as the Seaeye Falcon to scale models of the large ones, and the Survey Autonomous Semi-Submersible (SASS) of ASV Ltd. was on display outside at the entrance. Military UUVs were also on display, for example, the Sea Otter Mk II being introduced by Atlas Elektronik and the Talisman of BAE Systems. In addition to AUV manufacturers, manufacturers of software and hardware for use in the UUV industry (for example, various sonar types, subsea inertial navigation, and underwater communication systems and connectors for sensors, etc.) were exhibiting.

What was new

Although there was no obviously world-altering new invention on display, many small steps could be noted in the evolutionary process. The reduction in size of sensors such as sonars, motion sensors, laser optometrics or pipe-tracking systems (for example, Smartrak from Innovatum) are examples that enable full potential for small or smaller UUVs with lower drag, which thereby can make better use of the available power. Talking of reduction in size: Tritech released their Starfish side-scan sonar with chirp technology weighing only 2kg with correspondingly small dimensions.

The conference had a session called 'Gadgets and Widgets' enabling manufacturers to make short presentations on their latest developments and products. This interesting session, which was not only for the delegates but also for the manufacturers, attracted interest that was far above average and proved a good opportunity for exchanging views and bringing the conference and exhibition closer to each other.

The UUVS was located next to Empress dock, which offers good opportunities for demonstrations with waterborne equipment as proven last March during the Ocean Business Forum 2007. This time, only Wireless Fibre Systems Ltd. used this possibility to demonstrate their new RAM300 underwater radio acoustic modem.

Next Year

The UUVS, bringing together as it does practical users, industrial designers, the oil and gas sector, military and scientists, shows that UUVs have grown into a business serving the commercial, military and scientific world. The tenth UUVS will be held at the NOC in September 2008.