

Oceanology²⁰⁰⁴ international

Show Daily - Friday 19th March

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Record Attendance at OI 2004

As Oceanology International 2004 enters its fourth and final day there remains plenty of time to visit any stands and companies you have not yet managed to touch base with – so make good use of the leading event for ocean technology and marine science here at the London Exhibition Centre (ExCel).

This year's event has been breaking attendance level records, with more than 2,000 attending on the first day and this grew to a total of more than 6,000 people coming through the door by later afternoon yesterday. And that is just three days out of the four.

Moving OI from Brighton to ExCel in 2002 provided a much needed world-class exhibition and conference centre with berths for many research and survey vessels immediately alongside. Attendance levels have also benefited as a result, meaning more people get to enjoy the show. Another bonus for OI 2004 is that the hotel builds and infrastructure improvements that were lacking two years ago are now mostly complete.

The Highlights So Far

OI 2004 has had many great moments during the week but here is a quick rundown of the major highlights:

Tuesday: Plenary Conference Session with an opening speech by MP Steven Timms, the UK Minister for Energy, E-Commerce and Postal Services; more than 2,000 people attended the first day of OI 2004; and the OI Official Reception with live music at the excellent Fox@ExCel.

Wednesday: On St. Patrick's Day the conference focused on marine renewables; UK Environment Minister Elliot Morley visited OI 2004 to launch Wavenet; and more than 5,000 came through the



doors during the first two days of the event.

Thursday: Gas hydrates was the main topic of the conference; some six Associated Meetings were held; and total attendance levels reaching more than 6,000 by late afternoon.

Not Forgetting Today

Hopefully you all enjoyed the show so far and all it has offered but do not forget Friday's programme either.

Today is the day for students to visit the exhibition at ExCel, so there is still time greet those who may well be colleagues in a few years' time. Also not to be missed is the last day of the conference, which today looks at the topic of international coastal zone management. The keynote speaker is Robin G McInnes, chairman of the Coastal Groups of England and Wales and Coastal Manager for the Isle of Wight Council. This event is being held at Waterfront Room 3.

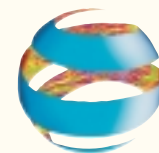
Besides the conference OI 2004 has offered a string of Associated Meetings, with today offering two more.

The first is the European Seafloor Observatory Network (ESONET) from 10am to 4pm in Waterfront Room 2. The second is the Alliance for Marine Remote Sensing (AMRS) Association between 9.30am and 12.30pm in Waterfront Rooms 5 & 6.

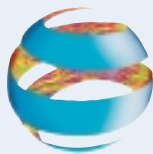
Bon Voyage

OI 2004 is the 17th time the event has been held here in the UK and everybody associated with OI hopes you all had a very productive and eventful four days and wishes you a safe journey home. We look forward to seeing you all again at Oceanology International 2006!





Colophon



GITC bv will publish a total of four OI Show Dailies during the event commencing 16th March: Tuesday, Wednesday, Thursday and Friday.

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Editorial Contributions

Each issue will contain interesting and actual information about the exhibitors, their products and services as well as highlights of technical sessions and meetings. Contributions will come from the editors of various GITC publications and representatives of Spearhead Exhibition. In addition we shall be leaving space for companies to publish their press releases together with the opportunity of advertising within the publication.

Deadlines

If you have news, notices or want to reserve advertising space in OI Show Daily, please make sure your submission is received or sent to the Press Room located next to our booth (# 1201, GITC bv/Hydro INTERNATIONAL) before 1.30 PM for the next day's issue.

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GITC

A Final Visit to the Waterfront

In between demonstration trips and receptions we managed to find vessels available. Vessels ranged greatly in size from the powerful and imposing Snellius to the mini survey launch Sir William.

Concat. Kongsberg's unique contribution takes the form of a portable boat that can be collapsed and stowed to fit into a 40 feet container. The vessel itself is of glass fibre construction and powered by two 164 horse power water jet engines, which give it a maximum speed of 20 knots. However it is not just the vessel that is impressive. The equipment carried includes the EM 3002 multibeam, providing 254 acoustic beams that are equi-spaced and can be focussed. In addition there are two single beam echo sounders, a SEAPATH 200 motion compensator and an SIS (Seabed Information System).

Meridian. This fine catamaran 35.16 metres in length, 10.2 metres in breadth and drawing only 1.5 metres was only commissioned in September 2003. It was built in The Netherlands and is owned and operated by the German survey company OSAE. It is fitted with a 1.6 metre round moon pool, a 6 ton A-Frame and a 1.32 ton crane. It is propelled by 2 MAN 750 kw. Engines operating Shottel Asipod units. With these and the appropriate electronics the vessel can be dynamically controlled to a fine tolerance.

For navigation there is a C-Map electronic chart system and a way point navigation system. Although the vessel can be used for a variety of scientific tasks it has been used recently for contracted surveys for the Norwegian Hydrographic service. For this work it has been equipped with a RESON 81010 multibeam sounding system.

Sir William. Halcrow's contribution to the fleet of survey vessels, takes the form of an aluminium rib type design that is completely fitted out with a wide range of modern instrumentation and easily commissioned. The vessel itself is 6.8 metres in length and has a draught of approximately 1m. The vessel is currently based at Reading and employed on multibeam surveys for the Environment



Agency. The vessel is powered by two large out-board motors, that gives speeds of around 15 knots. It is equipped with RESON's SEABAT 8010 and a POS MV 320 motion compensator. All data may be processed on board if necessary but otherwise stored and taken ashore.

Alliance is operated by the NATO SACLANTCEN at La Spezia, Italy. She was purpose built as a silent acoustic oceanographic research vessel delivered in 1988. She wears the German Federal Republic flag and has a German captain.

There is accommodation for 24 scientists. There are sufficient laboratories to enable a major scientific programme to be mounted.

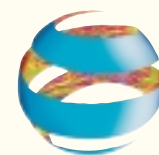
Two windlasses on the forecable enable the anchors to be weighed from 55 metres, plus a number of cranes, oceanographic winches and towing winches. There is an array frame on the forecable and an A frame on the quarter deck.

Two watercraft ribs are carried and up to five 20 feet containers may be embarked. All electrical and mechanical machines are designed to minimise noise. Up to a six hour quiet drift relying on batteries can be arranged when ever the crew go about their duties silently!

When not in use for NATO work the vessel is available for charter world-wide. Such charters may be discussed at the NATO Undersea Research Centre Stand.No.223.



See you in 2006



UK Minister Buoys Show

UK Environment Minister Elliot Morley visited Oceanology International 2004 on Wednesday to launch a project that hopes to measure waves and could help warn of impending floods in the UK.

The Wavenet project has strategically placed wave-measuring buoys around the UK coastline as part of a three-year monitoring programme. The six hi-tech Smart-Buoys will aid flood forecasters by feeding real-time data on wave height and direction to a new website database, called Wavenet. The site can be located at: <http://www.cefas.co.uk/wavenet>.

Large scale continuous monitoring of wave characteristics will also

help improve understanding of coastal erosion risk and the design of coastal erosion defence works.

Wavenet integrates data from the new buoys with existing data from the Met Office, Ireland's Marine Institute and Shell and Marathon Oil to provide a live, single source of more than 20 marine monitoring stations, which is publicly accessible free of charge.

"Helped by Wavenet, forecasters will now be able to predict wave and tide heights around the country 12, 24 and 36 hours in advance – and more quickly



UK Environment Minister Elliot Morley (in the centre)

spot and act on potential flood danger," said Elliot Morley when launching the project at OI 2004.

He also visited Eco-Sense at Stand 628, Aquatec Group at Stand 456, and the Met Office and IACMST at Stand 1217, among others during his visit.

The minister said marine issues are close to his heart and have been before he came into government in 1997, where his role of Shadow Environment & Agriculture spokesman saw him tackle such issues. 🌊

Deputy Minister of Defence of The Netherlands Visited OI

Wednesday morning the Netherlands Pavilion welcomed a delegation headed by the Netherlands Deputy Minister of Defence, Mr Cees van der Knaap, accompanied by the Ambassador of the Netherlands to the United Kingdom, the Director of Rijkswaterstaat North Sea Directorate and the Hydrographer of the Royal Netherlands Navy. After an introduction by Mr Frans van Dongen, coordinator of the Netherlands Pavilion, the Deputy Minister met each member of the Dutch Ocean Group and was introduced to their latest developments in services and products.

Around lunch time the delegation went on board the new hydrographic survey vessel *HNLMs Snellius*. After the official welcome by Commanding Officer LtCdr Jan Schaap, the Deputy Minister made a tour of the ship. TNO FEL, Imtech, SeaDarQ and Geo-Resources Consulting demonstrated their innovative technologies on board. Mr. van der Knaap showed great interest in the impressive integrated bridge lay out and the high standard of the accommodation.

During the afternoon the delegation spent some time at the exhibition and paid visits to several



From left to right: Frans van Dongen, LtCdr Jan Schaap, Deputy Minister of Defence Cees van der Knaap, Capt. Ruurd van Rooijen (Netherlands Hydrographer) and Gert Jan Kramer

stands. In the Fugro stand Mr van Knaap met Mr Gert Jan Kramer, CEO of the Fugro Group. He complimented him on the development of the group over the past years and was impressed by the great variety of services delivered.

After the successful visit the delegation left for City Airport. 🌊

Programme OI 2004 Friday 19 March – Parallel sessions

SESSION: INTERNATIONAL COASTAL ZONE MANAGEMENT

Waterfront room 3

Session Chair: John Roberts, Head, Marine and Waterways Division, Defra, UK

09.45 Keynote Speaker: Recent Advances in Coastal Management

Abstract of Presentation by Eur Geol Robin G McInnes, FICE, FGS, FRSA, Chairman of the Coastal Groups of England and Wales and Coastal Manager for the Isle of Wight Council

Robin McInnes, General Manager of the Centre for the Coastal Environment, Isle of Wight Council, UK

10.10 GIS in Marine Special Areas of Conservation

C. R. Bates, Lecturer, University of St Andrews, UK

10.35 Monitoring Of Sea Floor Dynamics By Interpretation Of Bathymetric Data

L.L. Dorst, Geodesist, Royal Netherlands Navy, Hydrographic Service, The Netherlands

BREAK

11.35 Monitoring Water Quality in Choctawhatchee Bay, Florida via Remotely-sensed Data

Dr. Scott Stoodley, Director of Environmental Programs, USA

12.00 THE POL COASTAL OBSERVATORY

Roger Proctor, Proudman Oceanographic Laboratory, UK

12.25 Coastal Ocean Modelling Scientist

John Siddorn, Coastal Ocean Modelling Scientist, Met Office, UK

SESSION: OPERATIONAL OCEANOGRAPHY

Waterfront room 4

Session Chair: Claire Burt, DSTL, UK

10.00 Keynote Speaker, Operational Oceanography - from Maury to the Present Day and Beyond

Dr Ralph Rayner, Managing Director, Fugro GEOS Limited, UK

10.20 Regional Wave Modelling in the Southern California Bight

Nicholas Graham, Research Meteorologist, Hydrologic Research Center / Scripps Institution of Oceanography, USA

BREAK

11.15 The Measurement and Analysis of Deep-water Currents to Improve Understanding of Riser Response

Gus Jeans, Fugro GEOS, UK

11.40 The POSEIDON Metocean Observing and Forecasting System

Svein Erling Hansen, Oceanographer OCEANOR AS, Norway

12.05 Marine Forecasting and Long Term Monitoring with the Irish National Weather Buoy Network

Dr. A G Westbrook, Scientist, Irish Marine Institute, Ireland



The Offshore Site Investigation and Geotechnics

The Offshore Site Investigation and Geotechnics (OSIG) committee of the Society of Underwater Technology (SUT) have used Oceanology International 2004 as the venue to run a series of Introductory Courses on Site Investigation and how they are used within the Offshore Oil & Gas Industry. The courses have been run annually by the OSIG-committee for more than 5 years with the venue rotating between Aberdeen and London.

The courses are titled:

- Introduction to Marine Engineering Geophysics for non scientists
- Introduction to Offshore Geotechnics for non scientists
- Drilling Operations and the Impact of Site Investigation

A cross section of industry professionals have both chaired and give lectures during the course of 3 days, including some spectacular case studies which highlighted the need for integrated geophysical and geotechnical site investigation programmes undertaken by expert site investigation contractors. Each session was followed by a lively



question and answer session from the delegates whose awareness was clearly raised on the issues which should be addressed.

The courses are next scheduled to be run again in Aberdeen during quarter 1 of 2005. For further details the Society of Underwater Technology can be contacted or see www.sut.org.uk.

The OI Show Daily team thanks all companies and visitors for their support and hope to meet you all in 2006!



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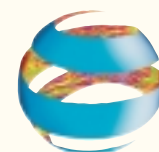


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stand 1201**



In the Spotlight: Lesley-Ann Sandbach

What is your involvement and what are your responsibilities at the show?

As Managing Director I am responsible for every detail of the show which this year has been organised by Craig Moyes and his terrific team. Planning for OI 2006 is already underway with many repeat bookings for OI 2006 already having been made. Nik Rudge takes over the helm from Craig and will bring his wide offshore industry experience to bear in delivering the next show here in March 2006.

What is it that makes OI such a success?

If we knew the secret we'd bottle it! What sets it apart is its sheer depth and breadth. No other series attracts such a large yet focused marine science and ocean technology exhibition, 7000+ many people, 13 parallel conferences, 15 survey & research ships displacing 10,000 tonnes.



There is no other event quite like OI in the world and it continues to grow – 20 per cent larger in size this year compared to 2002. It remains the benchmark event against which all others are judged and it remains the one event in the calendar that one genuinely cannot afford to miss. We set out with the aim of exceeding the expectations of exhibitors, conference speakers and visitors/delegates. By so doing we have created a network of goodwill ambassadors over the years around the world. Many people here this week have attended the show for as long as Spearhead has been involved – 23 years!

Nor do we neglect the social side with an ice-breaker party on the Monday night and Tuesday night's big bash 'Ocean Commotion' at the Fox@ExCeL. Most of the entertaining that goes on is organised by exhibitors themselves but we imagine that no-one attending OI goes away without having made new friends and renewed some old acquaintances

The student, the technical specialist, the defence professional, the generalist or the CEO can tour the exhibition and the ships, session-hop from paper to paper, and have the chance to contemplate and learn from a far broader range of ocean-related topics than is on his or her everyday radar.

This year we've gone out to more niche interest groups than ever before this year to broaden the appeal of OI to some exciting niche sectors and make it the hub of many activities and meetings taking place this week. Alongside the traditional OI conference we have hosted many specialist meetings from the specialist marine electromagnetics conference MARELEC to Advanced Technology in Underwater Vehicles, the Alliance for Remote Sensing Conference, European Seafloor Network Observatory, GGIS and Inland/Inshore Diving Conference and more besides. All of these audiences spend time in the exhibition and add value to the exhibition itself and we hope that even more conferences will come alongside in 2006. This year too we have a fantastic array of visiting ships alongside which add a complete new dimension to OI.



How many visitors have attended the show so far?

It's the quality that exhibitors seek not the volume. By mid-day yesterday (Thursday) day we have seen well over 6000 unique attendees from 71 countries, most of them attending for more than one day. 40 per cent of the audience has come from outside the UK - another record figure. By the end of Friday we reckon that the audience will have been some 30 per cent larger than two years ago and the largest in the series' history.

What are exhibitors and visitors saying about this year's event?

First that the ExCeL venue has now established itself as a proper campus with more than 1200 hotel rooms on site and more restaurants and bars than two years ago.

Second we detect a mood amongst exhibitors to change to a 3-day event next year and our post-show questionnaire will analyse these responses and help us make the decision for OI 2006.

Third that whilst London is an expensive place to do business, the convenience of London City Airport and the Docklands Light Railway, and the appeal factor of London itself as a venue, makes it more attractive to more visitors so they are likely to attend and do more business.

And finally the future of OI?

For 2006 we are encouraging more specialist meetings to come alongside, developing the renewable pavilion and the diving pavilion, adding other specialist interest areas and more specialist conferences such as underwater defence and oil-spill. 

Associated Meetings Friday 19 March

AMRS (Alliance for Marine Remote Sensing)

Waterfront rooms 5 & 6

ESONET 2nd Science meeting

Waterfront room 2 (Premier Room 2)

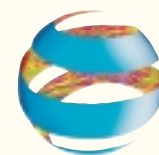
Science Day

Friday 19th March

09:30-12:30

Friday 19th March

10:10-15.50



Exhibitors' News

Kongsberg Seatex Unveils Position Reference Technology

Kongsberg Seatex has developed a new advanced position reference system for use in various applications including vessel-to-vessel and vessel-to-FPSO applications, specifically in the offshore sector. RADIUS is a short distance reference system designed to fill the needs specified by the IMO, for DP class 2 vessels.

RADIUS has been developed based on solid-state technology and features no moving parts. The system consists of transponders that are installed as targets (platform / FPSO), and interrogators that are equipped on the i.e. supply vessel. The system is capable of providing accurate readings optimised for a signal range of 500m and below. Close quarters operations such as alongside loading and unloading (with distances of >3m) benefit from highly accurate readings and fast propulsion response.

Source: Kongsberg Maritime

Stand: 650

Sonardyne Introduces New Scout USBL Tracking System

A new Ultra-Short BaseLine (USBL) acoustic tracking system has been introduced by Sonar-

dyne. SCOUT USBL has been designed as an entry-level product for organisations and business seeking to accurately track underwater targets such as divers, ROVs and towfish.

SCOUT provides the same high levels of accuracy as other Sonardyne USBL systems but incorporates features aimed at a different, but equally demanding, range of applications. These include educational and scientific organizations as well as users in the archaeology, salvage, AUV and oceanographic industries.

Source: Sonardyne (UK)

Stand: 734

MCA Awards Gardline Hydro Two Long Term Contracts

Immediately following OI2004, Gardline Hydro begins a two-year Civil Hydrography Programme (CHP) to survey the Western Approaches to the English Channel on behalf of its client, the government agency responsible for safety of navigation and CHP sponsor, the Maritime and Coastguard Agency (MCA)

The purpose of the 3rd party contract is to update Admiralty charts and other publications to ensure the safe navigation of vessels. The contract, consisting of approximately 88000km2 of seabed



mapping, is Gardline's ninth successive annual CHP and the first to employ multi-beam bathymetric techniques to achieve IHO S-44 Category 1 standard.

The survey will be carried out using Gardline's hydrographic survey ship 'MV Ocean Seeker' during 2004 and 2005, operating seasonally from April-October.

Source: Gardline Hydro

Stand: 640

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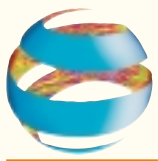
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Exhibitors' News (Continued)

Data Management System Order for Werum

The German shipyard company Kröger Werft has placed an order with Werum Software & Systems to equip the new German research vessel Maria S. Merian with their data management system DAVIS-SHIP. Werum will carry out the job of planning and implementing the onboard scientific network and mail system. The research vessel is still under construction, but is intended to be put into service at the end of 2004.

Once in service the vessel will be based with the Institute for Baltic Sea Research Warnemuende (IOW) and be operated for marine research. Thanks to her construction it is no problem for the Maria S. Merian to cruise ice edge areas. This new vessel is being jointly funded by the Federal States of Schleswig-Holstein, Bremen, and Mecklenburg-Vorpommern and also by Germany's Federal Ministry for Education and Research.

Source: Werum Software & Systems (Germany)

Stand: 940

Classiphi – The Ultimate Sea-bed Mapping Tool

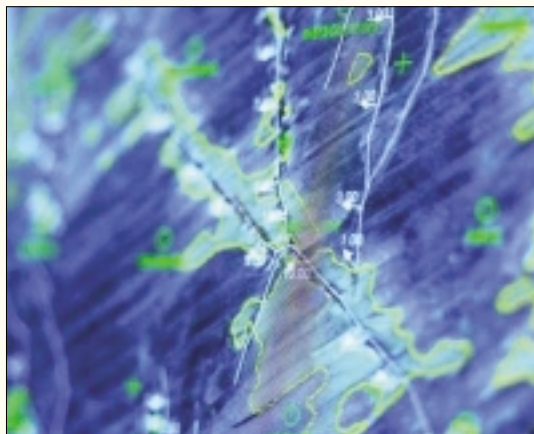
On show at QinetiQ's stand is Classiphi, the company's tool for sonar processing and seabed mapping within the route survey and environmental mapping communities. Classiphi supports almost all commercial sonars, including Autonomous Underwater Vehicle systems that offer integrated sidescan capability such as Hydroid's REMUS.

Some of the upgrades making their debut at OI 2004 include automated target detection and direct interfacing with the Interactive Visualisation Systems' leading 3D visualisation toolset, Fledermaus, which allows users to get the most from Classiphi's bathymetry/sonar data fusion potential. Another enhancement is to the classification processing scheme. This ensures that even the trickiest texture separation is now possible – and in the shortest possible time.

Classiphi uses sophisticated image analysis techniques to automatically classify sidescan sonar data. This allows the user to produce repeatable, quantitative assessments of seabed textures.

Uses for the QinetiQ seabed classification suite include:

- Route Survey / Hydrographic Survey
- Environmental habitat mapping
- Pipeline and cable route survey
- Installation mapping



The suite offers both bitmapped mosaics of sidescan and texture data in a high-speed GIS and contains an advanced suite of chart production tools. Automation and integration are the key operating concepts of Classiphi – single click and batch operations as inputs – and seamless integration to other charting tools as output.

Source: QinetiQ

Stand: 314

Water Pollution Detection Sensor Introduced

Rayne Longhurst, Engineering Research Fellow at The Robert Gordon University (RGU), has presented a keynote speech on innovative research into water pollution detection.

The new technology was developed by the Scottish Association for Marine Science (SAMS) in conjunction with The Robert Gordon University to ensure compliance with European water quality directives.

The technology is based on a new type of chemical sensor called MIPs (Molecularly Imprinted Polymer Sensors). Polymers are imprinted with a desired target substance such as caffeine, which is a good indicator of sewage contamination. The caffeine is washed out leaving caffeine molecule shaped holes in the polymer. When the sensor is deployed in the environment, these holes act as highly specific binding sites for caffeine indicating the presence of sewage.

Source: Scottish Association for Marine Science

Stand: 1224

CTG's Correlation Velocity Log COVELIA

The Chelsea Technologies Group (CTG) is launching the COVELIA correlation velocity Log at OI. COVELIA has been developed to provide AUV and ROV navigation systems with a highly accurate speed-over-ground velocity measurement. This instrument is designed to replace conventional Doppler velocity logs, which can be particularly inaccurate at the low speeds which AUVs operate.

The COVELIA system comprises a multiple element transmit and receive array and a small electronics package to perform the digital signal processing. The array incorporates over 20 individual transducers to perform the complex multiple transmissions and simultaneous multiple element receive functions required for the advanced correlation calculations. A state of the art Digital Signal Processor provides velocity over the seabed and vector information for the AUV's navigation system. Echo sounder (depth below transducer) information is also supplied.

Source: Chelsea Technologies Group

Stand: 841

MOTN Goes International

The Marine & Oceanographic Technology Network (MOTN), a 9 year old US regional trade association, consisting of ocean equipment manufacturers, service providers, research institution and state government agencies from around the 6 New England states, has announced that it is expanding its membership and is now welcoming both US national and international members to its ranks.

MOTN's charter is creating a cohesive, collaborative approach to increasing marketing presence,

offering improved business practices, encouraging shared R&D activities and fostering partnership opportunities between commercial organisations, universities and state and federal government agencies. MOTN also takes a lead role in insuring that the strategic and economic impact of the commercial marine & oceanographic technology industry remains visible and proactive with the various state and federal funding agencies. Opening its membership provides the opportunity for MOTN to expand its member base while increasing both its influence and visibility with these important groups.

One of MOTN's initiatives is its biannual Ocean Technology Workshop (OTW). It provides a venue for manufacturers & technologists to interact directly with existing and potential clients through hands on-training and at sea equipment demonstrations of their latest products and services. The next MOTN OTW, which will be its 4th biannual event, is scheduled to be held in Newport (RI, USA) from 19-21 October 2004.

Source: MOTN

Stand: 110

CARIS Celebrating 25th Anniversary

CARIS is celebrating the anniversary of its 25th year of business. This year also marks the 10th Anniversary of its European Office, CARIS BV.

Turning data into information has been the company's commitment to the Marine and Geomatics markets for quite some time. Nowadays CARIS has thousands of licenses throughout the world supporting multibeam processing and visualisation, marine information production and management, and product distribution. They conduct

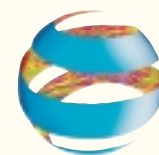


nearly 200 training course per year in various languages and countries.

In the past 25 years the company has grown from a small office in Canada to nearly 170 engineers and technicians with offices in both Europe and the USA. Happy Anniversary CARIS !

Source: CARIS

Stand: 931



From the Old Hydrographer

During the well documented Challenger Expedition of 1872-76 it was established that the Mariana Trench in the Pacific Ocean was extremely deep. The area was further investigated by a 20th century HMS Challenger in 1951 during which a depth of 10,900 metres was obtained with both line and echo sounding which became widely known as the Challenger Deep, the greatest known in the world's oceans.

Meanwhile the Swiss scientist Professor Auguste Piccard had developed on Lake Geneva a submersible vehicle called the bathyscaph capable of carrying man to the greatest depths. In 1958 the United States Navy purchased the bathyscaph, now named Trieste, for they had aspirations to visit the floor of Challenger Deep.

Jacques Piccard, son of the inventor and lieutenant Don Walsh U.S.N. were to man Trieste for the great dive. After a number of trial dives in the Pacific based in the U.S. Navy Electronics Laboratory at San Diego, the final base for the attempt to descend into Challenger Deep was established on the island of Guam from which further increasingly deep dives were made.



Don Walsh's account 'New Eyes for the Scientist' in 'Frontiers' journal Vol 25 No 1 tells the story of the epic dive. "By the middle of January 1960 the bathyscaph was ready for the last dive in Project Nekton. As we left Apra Harbor under tow we noticed that the seas appeared to be a little rougher than before, but we continued hoping that they would calm by the time we reached the diving point. The tow went quite slowly as the Trieste wallowed through the high seas. Our speed averaged two miles an hour over the 200-mile trip to the deep.

Early in the morning of the 23rd, just after sunrise, Jacques and I slid down the entrance tube and squeezed into the steel sphere. After a few rapid tests and checks we bolted the heavy door and commenced the dive.

Time went by very quickly, even though nine hours is a long time to sit in a 17-cubic foot

space. We were kept very busy controlling the descent, taking measurements and observations, and communicating with the surface on our underwater telephone.

The bottom, seven miles down, was distinctly different from the bottom seen on previous dives. It appeared to be made up of very fine white particles. Our landing stirred up the sediment, and we were engulfed in a white cloud. I found out later that this type of bottom is made up of "diatomaceous ooze" and that this material had been found before in the deepest trenches.

Just before landing we saw a flatfish lying on the bottom. He was white and about one foot long. After we had landed we saw him swim off into the cloud. The only other living thing of note was a small shrimp that Jacques saw as he glanced out of the window near the bottom.

The trip to the surface was fast, and we arrived in the late afternoon light."

For much of the information used in these mini Columns I am indebted to Bernard Gordon, Editor, "Man and the Sea – Classic Accounts of Marine Explorations" Published for the American Museum of Natural History by Double Day Natural History Press (New York 1972)

Steve Ritchie, Columnist for Hydro INTERNATIONAL

Trends in Hydrographic Equipment

Oceanology International provides a show place of all that is the latest in oceanographic and hydrographic instrumentation and systems.

Although the technical papers programme may offer more to the oceanographers than to the hydrographers, the exhibition frequently addresses the hydrographer's needs. Here we may notice some emerging trends.

Data management, although a constant difficulty in the face of new data collection systems, is tending to be less evident. Multibeam echosounders continue to be a source of great interest with Reson and Kongsberg currently in a leading position. However these are not the only systems and the debate on acoustically steered beams or interferometric side scan systems is well in evidence through the products of companies such as GeoSwath. A key concern for charting surveyors in the ability of acoustic systems to measure precisely clearing depths over wrecks and other obstructions. The count still is out on whether mechanical sweeping can be abandoned in favour of acoustic methods.

Other more exotic technology for depth measurement is Synthetic Aperture Radar (SAR), Synthetic Aperture Sonar (SAS) and the CHIRP 3D profiling system. All have a place in the future arsenal of the hydrography.

We must not forget the airborne laser systems or LIDAR. This conference has brought an old player into the field under a new name. Swedish airborne LIDAR technology, which has been around for some time, is now to be made available in a partnership between the UK Hydrographic Office and two Swedish companies. This will put another player into the already competitive field which in recent years has been dominated by the Australian LADS and the North American SHOALS. The latter using OPTECH technology. Although interest in LIDAR is clearly growing, the market remains highly competitive and we will wait with interest to see the effect of the new UK/Swedish partnership entering the fray. Finally do not let us forget the emergency of Automatic Underwater Vehicles (AUVs), costly, but a means to obtain detail at great depth.

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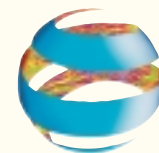
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Exhibitors' News (Continued)

Measuring Rapid Climate Changes

Aanderaa Instruments in Norway has delivered eleven RCM 11 current meters to the RAPID-project, an extensive programme started by Southampton Oceanography Centre (SOC). The six-year research programme aims to establish a pre-operational prototype system to continuously observe the strength and structure of the Gulf Stream.



The Southampton scientists will use RCM 11s from Aanderaa to measure changes in the water volume transported by the Gulf Stream from the warm areas off Florida to northern parts of Europe. If the quantity of water is reduced, the transport of heat will be reduced accordingly, resulting in a colder climate in Northern Europe.

Scientists want to establish a sound, reliable and correct way to observe the strength and structure of the Gulf Stream. As a result the ability to monitor and predict future rapid climate changes, particularly in the North Atlantic region, will be enhanced. This will be achieved by undertaking improved observations of the Atlantic thermohaline circulation and the processes that govern it.

The heat transport maximum is just off Florida. Aanderaa's eleven RCM 11 current meters will be used here in the top 3,000 metres of the water column of the deep western boundary current and be part of monitoring the depth profile. The RCM 11s will measure current speed, current direction, water temperature, pressure and salinity.

Source: Aanderaa Instruments

Stand: 1015

C&C Technologies and Woods Hole Group Join Forces

C&C Technologies, Inc. and the Woods Hole Group, Inc. signed a collaborative agreement to provide a wide range of services to the global marketplace. C&C Technologies is an established international provider of geophysical, marine construction, and geotechnical surveys. C&C also provides C-NAV, which is the only commercial Global Corrected Differential Positioning System

producing horizontal accuracies of 10cm. Woods Hole Group is a proven provider of real-time oceanographic measurement systems, as well as coastal/oceanographic environmental consulting services. The companies have worldwide experience, focus on quality and customer service, and share a desire to grow. Together, C&C and Woods Hole Group can better serve the offshore oil and gas industry and government organisations worldwide with a common resource pool of technology, staff of more than 200, equipment, and worldwide experience.

Source: C&C Technologies/Woods Hole Group

Stand: 958/928

GMS Navigator

Global Marine Systems Ltd showcases Navigator, a Windows (NT) 2000- Cable Control and Positioning System.

Navigator is capable of importing route line and target data from a simple csv file or even directly from an Excel file.

The data-logging files that the systems writes to disk are completely customisable. Navigator writes all logged data to two hard disks for data integrity.

Navigator can be configured to receive serial data from NMEA or other serial formatted strings. It can deliver customisable serial output messages to data loggers, ROVs, ploughs, ship – shore data transmitting devices or any other equipment.

The system maximises the use of the CAT5 network by allowing the user to select serial data input and output ports on any computer on the network, reducing the amount of cabling required for installations.

Navigator supports one or more Digi-Port Cards for multiple port computers.

The product allows the operator to give sub-sea vehicles a real shape and actual orientation. Positioning system offsets are supported on the sub-sea equipment producing absolute accuracy and repeatability, regardless of the orientation of the Sub-Sea vehicle.

Source: Global Marine Systems Ltd

Stand: 1051

VT TSS Sells First Marinus at Show

Oceanology 2004 became the venue for the first sale of a MARINUS attitude and heading reference system. GSE Rentals of Aberdeen took the plunge and snapped up the first production unit from VT TSS Ltd and is currently the only rental company able to offer this new product. GSE Rentals is due to take delivery in May after which the new unit will be available to customers worldwide.

VT TSS has launched MARINUS at Oceanology so it will be available during the forthcoming work season to provide high accuracy in extreme sea conditions. The new system has been designed to provide multibeam sonar users with the freedom to continue operating in conditions that would otherwise bring surveying to a halt. MARINUS is now positioned at the top of the range of VT TSS motion sensor technology being capable of providing heading, heave, roll and pitch correction data in sea dynamics that would be beyond the capabilities of other systems.



MARINUS has been designed to provide high accuracy combined with a fast output rate and limitless motion within a small, light and rugged package. The unit offers a heading follow-up speed of 1000°/second and a dynamic accuracy of $<\pm 0.1^\circ$ RMS. Roll and pitch range is $\pm 90^\circ$ with an accuracy of 0.025° . This performance is achieved through the well-proven and respected VT TSS real time and delayed heave algorithms which are used in conjunction with a ring laser gyro. These make it possible to obtain the best performance from multibeam systems with accurate heave measurements in all swell conditions, including long periods of open-ocean operation.

Source: VT TSS Ltd

Stand: 308

DPS Buys First Sonardyne Fusion Wideband System

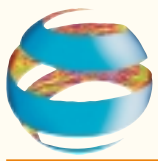
Dynamic Positioning Services (DPS) of Aberdeen have bought the first Fusion Positioning system with wideband signal technology from Sonardyne International. This £320,000 order is significant for both companies as it represents a milestone in the provision of advanced subsea positioning for the offshore market. Sonardyne wideband technology is key to offshore subsea positioning, offering hundreds of reply codes and fast telemetry. The system will give an enhanced and robust sub-sea position solution. Sonardyne's wideband signals are proven to give impressive noise immunity and can operate in parallel with other acoustic systems. They offer greater precision, and continue to offer this in harsh and complex acoustic environments.

DPS's order consists of 20 Compatt 5 transponders incorporating high accuracy depth and inclination sensors and a Fusion topside control unit with embedded Pharos Construction software. Wideband also integrates ranging and fast telemetry from the subsea sensors.

DPS and Sonardyne believe that this new system will provide operators with an efficient solution for all subsea positioning applications.

Source: Sonardyne International

Stand: 734



Exhibitors' News (Continued)

Survey Supplies Purchases MS750 to Gardline

Trimble via their UK dealer, Survey Supplies, has announced Gardline's purchase of two MS750 dual frequency GPS RTK systems at the show yesterday to be installed on the Ocean Seeker immediately after OI2004 when Gardline Hydro will begin a two-year Civil Hydrographic Programme to survey the Western Approaches to the English channel.

The MS750 GPS receiver represents one of the highest levels of accuracy and response available from a dual frequency GPS receiver.

Source: Survey Supplies/Gardline

Stand 1035

New Coda Octopus Products Unveiled

The CodaOctopus stand at this year's show is the focus for a selection of brand new products, a host of new features and software enhancements and some special offers. It is also the place to join the company for their 10th anniversary celebrations.



Some of the systems on display:

- All new Octopus 760 geophysical acquisition system
- Octopus F180 inertial attitude and positioning system with the latest iHeave component
- Coda GeoSurvey Productivity Suite complete with the latest features
- Brand new Echoscope MkII 3D imaging camera
- A selection of Coda and Octopus favourites

Recent sales of the new Octopus 760D and 760S to Gardline Marine Sciences mean that these brand new systems can also be viewed on board their multi-role survey vessel, *Sea Explorer*, docked at OI. Further Coda and Octopus instruments are installed on board vessels including Titan's 'Titan Explorer'. Elsewhere, Forsberg Services (stand 860) are displaying an Octopus F180 GPS-aided precision attitude and positioning system.

Source: CodaOctopus Ltd

Stand 234

Nutrients Analysis on Italian Monitoring Platforms in Black Sea

SYSTEA Srl is going to supply four NPA probes to measure nutrients in sea water to an Italian consortium managed by Agrotec and Idromar compa-

nies. The consortium has recently awarded a Phare contract from the Romanian Authorities to develop, install and provide full after sale service on four sea water monitoring platforms, to be placed in the Black Sea off the Romanian coast.

The use of the NPA probes will enable the platforms to acquire a full set of nutrient analysis data and combine this with the other physical-chemical data gathered on the platforms.

Source: Systea Srl

Stand 1132

LinkQuest Receives More Than US\$ 160,000 Orders

LinkQuest Inc. has received over US\$ 160,000 worth of orders at first two days at OI2004. It received an order from Japan Marine Safety Agency for six precision transponders to augment an existing 60+ node subsea network for monitoring and predicting undersea Tsunami and earthquakes. Underwater Video Systems, LinkQuest's distributor in Australia, brought in an order for two high speed modems. One order is from Defence Scientific Transfer Organization. Another one is from New South Wales EPA for use with its Acoustic Doppler Current Profiler. LinkQuest has also received two orders for its TrackLink USBL systems from SeaBotix Inc. These systems will be used to track LBV ROVs operated by NIVA, Norway and an Australian University LinkQuest exhibits its high speed modems and TrackLink USBL systems at their stand.

Source: LinkQuest Inc.

Stand 1312

EV Offshore Introduces CamScan EVO2

EV Offshore Ltd, has announced the introduction of the new CamScan EVO2, a subsea camera inspection system designed specifically for the offshore oil and gas industries to visually inspect conditions downhole and subsea.

The new system will make its debut at EV Offshore's stand at Oceanology. The robust CamScan EVO2 is the latest addition to EV Offshore's CamScan family of subsea camera inspection systems. The CamScan EVO2 was designed specifically for inspecting conditions downhole



and subsea and offers full hemispherical imaging. Engineers can inspect an entire hemisphere from every angle, meaning that the resulting inspection offers a much higher degree of accuracy. The odds of missing a potential problem are substantially reduced, while other subsea activities, such as fishing and clean-up operations, are enhanced, saving time and money.

Source: EV Offshore Ltd

Stand 357

Hydroid Inc. Purchases RD Instruments Doppler Velocity Logs for REMUS AUV

RD Instruments has been offered an order from Hydroid, Inc. for 15 Doppler Velocity Logs (DVLs). The DVLs will be installed on Hydroid's REMUS Autonomous Underwater Vehicle (AUV), and will provide the vehicle with both current profiling and precision navigation capability.

The DVLs are custom-made and designed specifically for the highly compact REMUS vehicle, taking into account the unit's stringent size, weight and power requirements. The unit is capable of providing upward looking ADCP capability combined with downward looking DVL navigation.

Source: RD Instruments

Stand 738

Two more GeoSwath Orders and Increased Sales

Maritech (France) has issued GeoAcoustics (Great Yarmouth, UK) with an order for a GeoSwath shallow water wide angle bathymetric system. Maritech are GeoAcoustic's representatives in France and owner Bruce Swale will be offering this system for lease and to support his sales efforts within the country. Projects already planned are a hydrographic survey of a harbour entrance in Corsica, a survey of a section of the navigable canals, surveying the diving areas in the Mediterranean in order to produce 3D diving charts, coastal surveys to locate objects on the sea bed, studies to determine the spread of harmful seaweed and general shallow water hydrographic studies.

Seatronics has also placed an order for the new GeoSwath plus system for its worldwide rental pool. The system has also recently been ordered by the Royal Navy for installation at HM Training Group, *HMS Drake*, where it will undergo trials and assessment for future operational tasking. Further sales have been made to CIS in Spain, Osiris Projects in the UK and the Sarawak Marine Department in Malaysia.

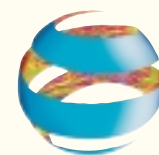
Source: GeoAcoustics

Stand 918

ADCPs in Action Seminar Moves to Europe In 2004

After two highly successful domestic events, RDI is moving its ADCPs in Action seminar to Nice, France on June 3 – 4 2004. This forum has been designed to bring the oceanographic community together for a lively exchange of information between Acoustic Doppler Current Profiler (ADCP) / Doppler Velocity Log (DVL) users, industry experts and third party manufacturers.

The company has scheduled 25 leading industry experts and influencers from throughout Europe



Exhibitors' News (Continued)

(and beyond) to share their experiences and address the topics deemed most important to today's ADCP/DVL users. Industry co-sponsors for this event include: Aquavision, Benthos, EIVA, iXsea, Flotation Technologies, Kongsberg, Ocean-Science Group and Seatronics. These companies will be on site to offer information on their products and service relative to the topic at hand. The June event will be hosted at the Radisson SAS in Nice, France.

Source: RD Instruments

Stand 738

SonTek Wins Bid for 13 ADP Systems for the Yangtze River Estuary

SonTek and China-ORE announce they have won a bid for procurement of 13 sets of Acoustic Doppler Profilers (ADP) to the Yangtze Estuary Waterway Construction Company Ltd. The Yangtze River estuary hosts one of the busiest transportation ports in the world. It is also well



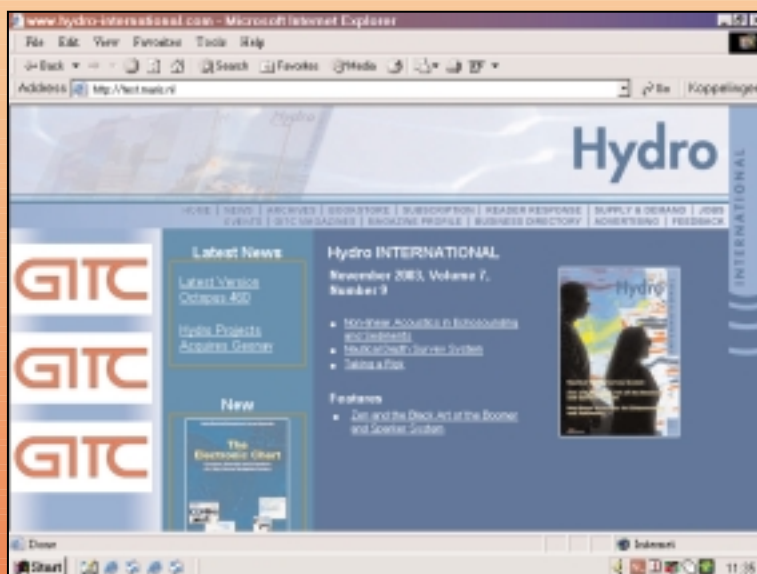
known for its complex hydrology such as high sediment movement and year round deposition of mud and sand. The Yangtze Estuary Construction Company is responsible for the second phase of

dredging navigation channels from 8.5 metres to 10 meters. Technical cooperation and research has been ongoing for the past year with the State Key Laboratory for Estuary and Coastal Research (East China Normal University) and the Yangtze Estuary Hydrology Bureau. Initial research has led to a plan to deploy instrumented buoys along 260 kilometers of the Yangtze River. The buoys will be linked by wireless communications providing information 24 hours a day to dredgers, construction engineers and scientists for a three year period. It is the first time ADP technology has been combined with buoys to provide comprehensive information on sediment movement in Chinese waters and will provide much benefit to ocean research in the Yangtze Estuary and the East China Sea. In addition to the 13 ADP's deployed on the buoys, other sensors involved with the project include SonTek's PC-ADP, Hydra, and Triton.

Source: SonTek

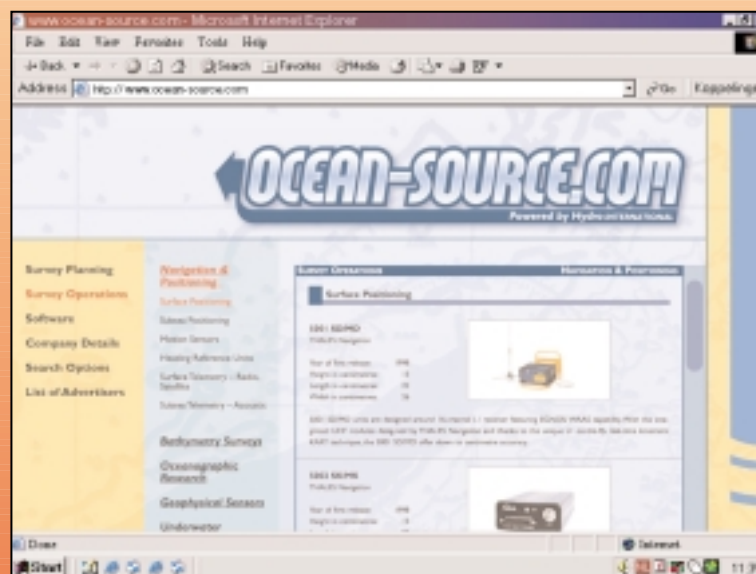
Stand 818

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