**Seventeenth International Research Ship Operators Meeting**
**21 – 22 October 2003, Valparaiso, Chile**

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**Attendees**

| Country | Representative | Organisation |
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| Australia | Mr. Dick Burgess | P&O, Hobart |
| | Mr. Ron Plaschke | CSIRO, Hobart |
| | Mr. Jonathan Reeve | AAD, Kingston |
| Belgium | Mr. Andre Pollentier | MUMM, Oostende |
| Chile | Mr. Enrique Aranda | IFOP, Valparaiso, Host |
| | Mr. Giovanni Daneri | UdelM, Valparaiso/Viña |
| | Ms. Catalina Gallardo | SSP, Valparaiso |
| | Ms. Ruth Mattei | IFOP, Valparaiso |
| | Mr. Esteban Morales | UCV, Valparaiso |
| | Dr. Rodrigo Nuñez | SHOA, Valparaiso |
| | Mr. Guillermo Moreno Paredes | IFOP, Valparaiso |
| Denmark | Cpt. Frode R. Larsen | DFU, Copenhagen |
| Germany | Mr. Falk von Seck | RF, Bremen |
| Greece | Dr. Dimitris Georgopoulos | NCMR, Athene |
| Ireland | Mr. John Breslin | Marine Institute, Galway |
| Japan | Mr. Masato Chijiya | JAMSTEC, Yokosuka |
| | Dr. Hiroyasu Momma | JAMSTEC, Yokosuka |
| | Cpt. Akio Nakagawa | GODI, Yokosuka |
| | Mr. Hitoshi Nakai | GODI, Yokosuka |
| | Mr. Manabu Tatsuta | GODI, Yokosuka |
| | Cpt. Masataka Zaitsu | NME, Yokosuka |
| Netherlands | Ms. Marieke J. Rietveld | NIOZ, Texel – Chair & Secretary |
| New Zealand | Mr. Clive Glover | NIWA, Wellington |
| | Mr. Fred Smits | NIWA, Wellington |
| Norway | Mr. Per Nieuwejaar | IMR, Bergen |
| South Africa | Mr. Ian Calvert | Smit Pentow Marine, Cape Town |
| Spain | Dr. Juanjo Dañobeitia | CSIC/UTM, Barcelona |
| | Mr. José Diaz | CSIC/UTM |
| UK | Mr. Edward Cooper | SOC/ Southampton |
| | Mr. Paul Stone | SOC/RSU, Southampton |
| | Mr. Geraint West | SOC/UKORS. Southampton |
| USA | Ms. Dolly Dieter | NSF, Arlington |
| | Mr. John Freitag | ONR, Arlington |
| | Prof. Dennis Nixon | URI, Kingston |
| | Ms. Elizabeth Tirpak | Dept. of State, Washington D.C. |
| | Mr. Douglas White | OCEANIC, Delaware |

**Apologies for absence**

| | | |
|---|---|---|
| Canada | Mr. Steve Peck | DFO-CCG, Ottawa |
| ESF | Dr. Niamh Connolly | ESF, Strasbourg |
| EU | Mr. Gilles Ollier | CEC-DG XII, Brussels |
| Eurocean | Mr. Laurent d'Ozouville | Eurocean, Lisbon |
| Finland | Ms. Eila Lahdes | FIMR, Helsinki |
| France | Mr. Jacques Binot | IFREMER, Paris |
| | Mr. Jean-Xavier Castrec | IFREMER, Brest |
| | Cpt. Armel Le Strat | GENAVIR, Paris |
| Germany | Cpt. Caspar Von Spee | RF, Bremen |
| | Dr. Thomas Müller | IMUK, Kiel |
| Greece | Prof. G. Chronis | NCMR, Athens |
| India | Mr. G. Janakiraman | NIOT, Chennai |
| Ireland | Mr. Conor Mowlds | Marine Institute, Dublin |
| Japan | Cpt. Masatake Okawara | JAMSTEC, Yokosuka |
| NATO | Dr. Ian Sage | NATO, Ispra – La Spezia |
| Portugal | Mr. Joao Coimbra | CMER, Porto |
| Russia | Mr. Alexey Turchin | INTAARI, St. Petersburg |
| UK | Dr. Mike Webb | NERC, Swindon |
| | Mr. David Blake | BAS, Cambridge |
| | Mr. John Morrison | SEERAD, Aberdeen |
| USA | Dr. Linda Goad | NSF, Arlington |
| | Commander Elizabeth White | NOAA, Silver Springs |

## 1. Welcome

All 36 participants from 15 different nations were warmly welcomed on behalf of the Director of IFOP *(Fisheries Development Institute – Instituto de Formento Pesquero)*, *Guillermo Moreno Paredes,* to the seventeenth ISO-Meeting.
For Chile with its extreme geography, including Antarctica, the oceans are of high importance and have a great impact on the economy of the country. Chile therefore welcomes all international collaboration in this field.
*Ms. Marieke Rietveld (Netherlands), as Secretary of ISOM* and *Chairperson* of this year's ISOM remarked to be pleased that Chile could host ISOM, to which Cpt. Enrique Aranda Orteigo has been a member for so many years.
She brought forward the apologies for absence of a number of members. *Ms. Rietveld* noted that there were quite a number of new faces and she invited all participants to briefly introduce themselves.

## 2. Review of Minutes of sixteenth Meeting

The minutes were accepted as a true record of the sixteenth meeting held in Helsinki, Finland, 18 -19 September 2002. The final version of the minutes will be made available on the ISOM web site (http://www.nioz.nl/isom/) and OCEANIC (http://www.researchvessels.org )

## 3. Delegates Reports of Activities

### 3.1. Fleet Activities and Changes (incl. major facilities)

*Mr. Jon Reeve (AAD - Australia)* reported on the fleet activities of the Australian Antarctic Division over the 2002/03 Season. From October to March, 6 vessels were used. The RSV AURORA AUSTRALIS is the major Marine Science Vessel (on Charter from P&O Polar). Two major Marine Science voyages were done in
early summer 2002/2003, a 37 day voyage investigated sea-ice and iceberg programs off the Antarctic coast at about 145 degree E, where Deep Ocean Mooring array (sediment trap) deployments and Primary productivity in sea ice studies went well. The Ice conditions (necessitating long flight distance to iceberg), combined with weather, helicopter delays and ice radar breakdown, reduced the instrumentation deployment and survey work done on B9B iceberg.
In Midsummer 2002/2003 a 75 day voyage (Flux and Kaos) investigated ecosystem monitoring, krill flux and oceanographic studies. *Mr. Reeve* would be most interested to share other members' experience in work boat deployments at sea in rough sea conditions.
In the 2003/04 Season (September to March), 5 vessels will be used. Again RSV AURORA AUSTRALIS will be the major Marine Science Vessel. Two major Marine Science voyages (55 days + 72 days) will take place. In early summer, a 55 day voyage performing satellite validation and general sea-ice studies (just finishing now.) The work comprises Deep Ocean Mooring array (sediment trap) turn-arounds. Two moorings were lost, and the fallback recovery system failed with winch problems.
A mid summer Voyage of 72 days (Flux and Kaos) will investigate the complete Ecosystem around Heard & Macdonald Islands. This study will combine with on shore studies, with particular focus on fisheries management
AAD is very pleased with a new set of Laboratory containers. These are insulated for Antarctic use.
Fit-out easily changed (recessed C-channel with no floor penetrations) and lightweight, removable side panel and joining seals enable laboratory containers to be joined side by side when larger area required. There is a escape hatch and ladder. Power, network, alarm and Air conditioning services. Flexible service entry ways can be quickly changed over. The costs are approx. USD 35,000 each.
For the future there is a new shipping contract to start in 2005. Negotiations have been complicated by the ongoing implementation of new Air Transport systems (intra and inter-continental,) requiring major change to our operations.
Census of Antarctic Marine Life
Australia is advocating a "Census of Antarctic Marine Life" as a major theme for the fourth International Polar Year 2007/8. IPY 2007/08 is being driven by ICSU (initially came out of EPB and US PRB) and marks the 125th anniversary of the First IPY (1882/3), the 75th anniversary of the Second IPY (1932/3), and the 50th anniversary of the IPY/IGY (1957/8). Australia is part of a group of eastern Antarctic nations taking this to ICSU. AAD is looking for involvement of other nations – because this is a very big project !

*Mr. Dick Burgess (P&O Maritime Services - Australia)* reported on the technical issues of the ice-breaker RSV AURORA AUSTRALIS. P&O is the operator of the ship that is chartered to AAD. RSV AURORA AUSTRALIS was built in Newcastle, Australia and sails under the Australian flag with an Australian crew. The vessel is 94.91 metres long, has a dead weight of 3,893 tonnes, and is classed as an Ice Class 1A Super Icebreaker under Lloyd's Register of Shipping + 100 A1 + LMC UMS DP (CM): CASPR Class 2 Amidships, Class 3 fore and aft. The vessel has accommodation for 24 crew and 116 expeditioners and has the capacity for the following operations:
For navigating in ice, the ship has now a real time satellite imaging system, that is a great time saver. There has been new side doors fitted, and a 20 m gangway, which enables direct access to the ice. Modifications are studied for further improvement such as a drop keel.
Since 4 months P&O is managing the CSIRO ships. The RV FRANKLIN has been sold and the RV SOUTHERN SURVEYOR has undergone extensive modification to be converted to the national survey vessel of CSIRO.
On personnel issues: Dr. John Wallis has retired and Dr. Andrew Forbes has returned to science. John McKinsey has been the project leader of the conversion of the SOUTHERN SURVEYOR. Mr. Ron Plaschke has taken over the role of ship's operator of CSIRO. The issue of the RV SOUTHERN SURVEYOR conversion will be presented separately under agenda item 11 by Mr. Ron Plaschke. Further information on
http://www.marine.csiro.au/nationalfacility/

*Mr. André Pollentier (Belgium)* reported on the activity of R/V BELGICA operated by MUMM - Royal Belgian Institute of Natural Sciences - Belgian Federal Office for Scientific, Technical and Cultural Affairs. The R/V Belgica sailed mainly in the North Atlantic from Norway to the Bay of Biscay for the 2003 programme.

A new ROV is planned for work on cold water corals. The ROV will be equipped with camera's and a Multibeam echosounder to send real time data ashore.

*Mr. Rodrigo Nuñez (Chile – SHOA)* reported that the Oceanographic and Hydrographic Service of Chile (SHOA) operates 2 RV's and a number of smaller ships in a system that is comparable with the US ONR. The AGOR VIDAL GORMAZ (former US AGOR10), and the PSG CABRALES. Under agenda item 6 he will give a more extensive presentation.
*Mr. Enrique Aranda (Chile – IFOP)* reported on the RV ABATE MOLINA of IFOP. These research cruises correspond to a contract financed by the Fund of Fishing Investigation (FIP) and some funds from the National Commission of Scientific Investigation and Technology (CONICYT). The principal activity of investigation of the scientific vessel is the bio-oceanographic conditions monitoring program for the study of the Phenomenon El Niño and on the Humboldt Current.

*Mr. Frode Larsen (Denmark)* reported on the activities of the Danish R/V DANA that is operated by the Danish Institute for Fisheries Research (DIFRES). DIFRES is a research institution which carries out research, investigations and provides advice concerning sustainable exploitation of live marine and fresh water resources. DIFRES is dependent on good research vessels. The Danish Institute of Fisheries Research (DIFRES) currently owns five ships: DANA – 79 m ocean-going vessel – and four smaller ships.
DANA is a large, efficient vessel, capable of performing a wide range of research tasks. The ship is equipped with several separate laboratories, and is able to accommodate a large number of scientists, allowing for different tasks to be carried out during surveys. DANA is able to carry out research work in all open waters, even under bad weather conditions or in ice-filled waters. DANA fulfils the "Norske Veritas" classification demands for ice navigation (Ice class: Ice A1) and for trading in Polar Regions.
DANA completed a total of 129 survey days for DIFRES in 2002. The DANA surveys took place in the North Sea, Skagerrak, Kattegat and in the Baltic Sea. DANA receives general maintenance work in 2002 e. g. paint work, and work on the winches.
Test on newly developed equipment – TRIAXUS (undulating towed body) was carried out during the year. In addition, DANA participated for a period of eight days in the ICES Centenary Celebration in October. A once-in-a-lifetime sight, DANA and nine other European research vessels docked at Amaliekajen in the centre of Copenhagen to mark the event. During the stay, the vessels were open to the public, and fuelled by press coverage, DANA and the other research vessels received a large number of visitors. Furthermore, two short cruises to Oeresund and Kattegat with invited special guests were carried out.
As expected, the low charter activity continued in 2002. In fact, DANA was not chartered by other institutions in 2002. Through co-operation with other Danish and foreign institutes, DIFRES has commenced work to secure better utilisation of DANA. This was a prominent recommendation by the Danish Council for Research Policy in its review of Danish governmental research institutions.
In 2003 DANA will carry out less than 120 survey days for DIFRES plus 16 days for charter. But in 2004 an increase is expected to 150 survey days or more.

*Mr. Falk von Seck (Germany – RF)* reported on ships run by the Reederei Forschungsgemeinschaft GmbH. RF runs RV METEOR, and is the owner of R/V SONNE. Currently there is a tender for the operation of the other ships RV POSEIDON, ALKOR and HEINCKE as well as for the newly built RV MARIA SYBILLA MERIAN. The decision will be taken mid November. There is a serious delay in the delivery of the M.S. MERIAN due to problems regarding the Echosounder system, where Atlas has gone to court because of our choice for Simrad. Casco building takes place in Poland, further fitting in Germany. Total costs estimated at Euro 60 million.
The RV SONNE is the only RV owned by RF and now tendered by the German Government that has to decide on a contract for the next five years. Signs that the contract will be granted are positive.
Equipment includes Simrad EM 120 MB, 25 m pistoncorer, OFOS underwater video camera, video grab, 150 bar compressor for seismics, a new data management system with SUN workstations.
ROV application of the Bremen QUEST that can work at 4000 m. This is a relative light (3.3 ton) containerised system and can work on different ships. It makes use of a DSR Ring Truster for failsafe operation. It has manipulator arms and can lift a payload up to 250 kg. Specs can be found on http://www.rcom-bremen.de/ROV_QUEST.html

*Mr. Dimitris Georgopoulos (Greece)* reported on the NCMR (National Centre for Marine Research) owned 62 m RV AEGAEO and the submersible THETIS. Another ship is the 30 m PHILA. RV AEGAEO was at sea for approx. 200 days for national and EU-funded research. Main working area East Mediterranean and Black Sea. The manned submersible THETIS was constructed to very high technical specifications, and has great potential for a wide range of scientific activities/research. It is 3.4 m long, 2.4 m wide and 2.5 m high. It weighs 5300 kg and has an underwater speed of 2.5 knots. It can accommodate a crew of two. It has an operational depth of 610m and a submergence limit of 8-9 hours.
There were serious problems with the manning of the THETIS, and NCMR decided to replace the crew (pilot, co-pilot and technician) and restructure the operational procedures.

*Mr. John Breslin (Ireland)* reported on the two multipurpose research vessels owned by the Marine Institute, the RV Celtic Voyager and the RV Celtic Explorer.
The Marine Institute itself is currently based in a temporary facility in Parkmore, Galway. However, on the 24th of October this year, construction will begin on a new state-of-the-art office and laboratory facility at the coastal location of Oranmore in Galway.
The 31 m RV Celtic Voyager was delivered to the Marine Institute in July of 1997 as part of a planned expansion of the Irish research vessel fleet. As a continuance of that planned expansion, the 65 m RV Celtic Explorer was delivered to the Institute in December of 2002. Both vessels provide essential research, training and monitoring facilities for work in Irish and European waters and beyond

Programmes that the CELTIC VOYAGER has been involved in this year brought the ship all around the East, South and West coasts of Ireland.
These programmes, which form part of the Marine Institute's remit to carry out marine research and monitoring include: annual nutrient monitoring, egg larval surveys, groundfish surveys, deployment of a Met Buoy and oceanographic surveys.
The RV Celtic Voyager has also been involved with a number of other research institutions and universities in carrying out student training programmes, phytoplankton sampling, investigations into the distribution of harmful algae, radiological monitoring and oceanographic surveys.
From now until the end of the year the vessel will be involved in student training programmes as well as hydrographic surveys in conjunction with Irish research institutions and universities.
The RV CELTIC EXPLORER arrived into Galway Harbour on the 30th of December 2002. After undergoing a rigorous shakedown and trials period from January to March of 2003, the vessel began surveying the seabed off the Northwest coast, as part of the National Seabed Survey (Ref. Fig. 2). The vessel will play a key role in the Survey which runs until 2005, and is being carried out in conjunction with the Geological Survey of Ireland.
This month, the vessel will carryout an oceanographic survey in co-operation with the National University of Ireland, Galway. From the end of October and into December, the RV Celtic Explorer is due to begin an extensive Groundfish Survey all around the Irish coast, with the Fisheries Science Services Section of the Marine Institute. Specs of the ship can be found on the Marine Institute website: http://www.marine.ie

*Cpt. Masataka Zaitsu of NME (Japan)* gave a short report of the major changes in the RV fleet.. There are five research vessels, NATSUSHIMA, KAIYO, KAIREI, and YOKOSUKA, operated by NME, and MIRAI, operated by GODI. They each sail for approx. 300 days per fiscal year (April – March). The manned submersibles SHINKAI 2000 and the ROV DOLPHIN-3K have been decommissioned. RV NATSUSHIMA now is assigned as the support ship for the HYPER-DOLPHIN. The RV KAIYO was HYPERDOLPHIN's support ship, but is now assigned for conventional research. The RV KAIREI lost the ROV KAIKO on 29 May this year. Extensive search was launched but KAIKO could not be traced.
The power source of AUV URASHIMA has been replaced from lithium cells to fuel cells (PEFC: solid Polymer Electrolyte Fuel Cell) and the URASHIMA completed a successful test with RV YOKOSUKA.
A planned seismic survey with RV KAIREI off Vancouver Island had to be cancelled, although all conditions as required by the Department of Fisheries and Oceans (DFO) of Canada were met. The negative press as issued by the environmentalist Orca network caused new requirements and endless reviews, a/o. a Public Panel Review. So JAMSTEC decided to cancel the cruise.
NME started Site Survey for CDEX (Center for Deep Earth Exploration) of JAMSTEC as a new business. The objective of this site survey is detecting drilling hazards before drilling operation of Deep Sea Drilling Vessel CHIKYU which is under construction in Mitsubishi Heavy Industry in Nagasaki. NME chartered a Norwegian seismic survey vessel POLAR PRINCESS for standard resolution 2D MCS and High resolution 2D MCS as site survey at Japanese coast, and NME is going to carry out survey and current measurements in November this year.
The Operations Schedule of the fiscal year 2003 of the research fleet was made available as a hand-out.

*Cpt .Akio Nakagawa of GODI (Japan)* reported on the large size oceanographic research ship MIRAI that is managed by GODI. MIRAI's activity area is the North Pacific (from Equatorial up to high latitude) and the Indian Ocean. R/V MIRAI completed five cruises in fiscal year 2002-2003 and was 291 days at sea. Research was done on the Sub-Tropical and Sub-Arctic gyres in the North Pacific Tropical Ocean Climate Study (Western Pacific and Eastern Indian Ocean); and in the Arctic Ocean in co-operation with the Canadian Coast Guard Ice-Breaker 'LOUIS ST LAURENT' and 'LAURIER'; Air Sea Interaction Research in the Tropics ( the Pacific); Observation Study on the Material Cycle in the North Pacific.
Now the 316 day BEAGLE cruise has started (Blue Earth Global Expedition), an around the World cruise in the Southern Hemisphere with CTD work and piston coring.
The cruise started in Brisbane on 3 August 2003 and will end in Fremantle on 19 February 2004.
RV MIRAI just left her port of call Valparaiso where she was on display for invited guests, included ISOM, last Sunday.

*Ms. Marieke Rietveld (Netherlands)* reported on the Royal NIOZ R/V Pelagia (66 m, multipurpose, built 1991). In 2003 PELAGIA worked mainly in the North See, North Atlantic (from Irminger Sea to Canary Basin) and in the West Mediterranean.
After 6 weeks of extensive maintenance in January/February 2003 the ship sailed for 292 operational days, including 1 barter cruise of 25 days, and 2 commercial charters totalling 30 days.
Research projects were funded by the Netherlands Research Council NWO, by the European Union, the IGBP-LOICZ and NIOZ itself.
Regarding Major equipment changes: the moveable lander (MOVE!) is entering its second phase of construction. MOVE! is a sea floor crawler funded in a co-operative project under German Dutch NEBROC programme (Netherlands Bremen Oceanography).
A new small (20m) fast aluminium twin hull RV (NEREIS) with waterjet propulsion (25 knots) for the shallow Wadden Sea (draught: 0.8m) and nearby coastal work is expected to be delivered early 2004. This is a shared ship with the Netherlands Organisation for Applied Technology (TNO).

*Mr. Clive Glover (New Zealand)* reported on NIWA's vessels R/V TANGAROA and KAHAROA, and the survey launch PELORUS. TANGAROA was chartered out to Japan for 30 days. For the Government the ships are mostly involved in fisheries work and geological surveys.
Improvements are a 10.000 m 10.5 diameter CTD cable for TANGAROA and the installation of a high frequency multi-beam echosounder, such as the SIMRAD EM3000D, the ATLAS Fansweep or the SeaBat sounders.
NIWA is currently studying the option of fitting a deep-coring system for geological sampling.

*Mr. Per Nieuwejaar (Norway- IMR)* reported on the fleet of the Institute of Marine Research (IMR) in Bergen, Norway. IMR owns five vessels and operates three for other owners. and rents another two vessels. They are::
- RV SARSEN (ex-G.O. Sars), LOA 70 m, built 1970
- R/V JOHAN HJORT - LOA 64.4 m built 1990
- R/V MICHAEL SARS – LOA 47.5 m, built 1978/79
- R/V G M DANNEVIG – LOA 28 m, built 1979
- R/V DR.FRIDJOF NANSEN – LOA 57 m, built 1993, owned by NORAD (Norwegian Agency for Foreign Aid).
- R/V HåKON MOSBY – LOA 47 m, built 1980, owned by the University of Bergen.
- RV HANS BRATTSTRÖM ", LOA 24,3 m, built 1992,Owner: University of Bergen
- R/V FANGST - LOA 15 m, built 2000, renting for approx. 200 days a year

R/V JAN MAYEN, LOA 63,8 m, built 1988 renting for approx. 75 days a year.
For detailed information about the vessels, see the website www.imr.no
*Mr. Nieuwejaar* reported on the Project "New G. O. Sars". IMR took delivery of the new RV together with the University of Bergen on 24 April 2003. The main characteristics of the vessel are: LOA 77.5 m, 3800 GRT, max speed 17 knots, cruise speed 11 knots, more than 50 tons pull, diesel-electric propulsion system, and very low radiated noise to water. Tasks to be performed are survey of marine resources, oceanographic survey (physical, chemical and biological), seismic surveys, bottom contour mapping, bottom coring, operation of ROV and AUV etc. Details can be found on the IMR website
Since last ISOM in Helsinki in September 2002, all IMR ships but one have operated in accordance with their cruise plans, which means approx. 300 – 320 days at sea, exempt "G.M.Dannevig" who has only one crew and approx. 190 days at sea. There was a three months period this summer when "Håkon Mosby" was not operational due to gear problems.
The IMR and the University of Bergen (UiB) have signed a co-operation agreement for the common use of the new "G.O.Sars" and the existing "Håkon Mosby", which was taken over by the IMR on 1 January 2003. IMR took from the same date over the manning and operation of a small RV named "Hans Brattstrøm" which is owned by UiB and the operation of an Remotely Operated Vehicle (ROV) owned by UiB called "Aglantha". All in all this means that the IMR and UiB have integrated their marine infrastructure and that the manning, maintenance, operation and management of the assets is concentrated in one place, which is the IMR RV department.

The IMR RV department is also in the process of establishing an agreement with the University of Tromsø in northern Norway for the common use of the long term rented vessel "Jan Mayen" and common management of the government owned scientific equipment used onboard that vessel.
The Norwegian Parliament have decided that the possible establishment of one common RV agency in Norway shall be explored and a proposal for this is expected to be ready sometimes next year.
Change in fleet structure: The RV "Michael Sars" was taken out of service on 1 January 2003 and the old "G.O.Sars", which is now called "Sarsen" is taken out of service these days and both ships are for sale.

*Mr. Ian Calvert (South Africa)* of Smit Marine South Africa reported on the RV's owned by the South African Government - the Department of Environmental Affairs & Tourism (DEA&T) - and operated by Smit
SA AGULHAS, ice strengthened ICE Class-I, LOA 112 m, built 1977
FRS AFRICANA, Fisheries research, Ice Class-II, LOA 78 m, built 1982
FRS ALGOA, Fisheries research, LOA 52.5 m, built 1975, converted 1993
The Government expects that the ships are operated on a cost covering basis. This implies commercial contracts. Work was done for a mining company using a AUV at the East Coast of Africa. Surveying submarine silica. AUV's might play an important role in future mapping.
The FRS ALGOA is limited by SOLAS regulations regarding its research area. Therefore thoughts go towards a new ship. ALGOA now has plenty of spare-time.
A general problem relates to the manning of the ships, where replacement crew is hard to be found.

*Prof. Juanjo Dañobeitia (Spain)* reported on the Spanish research fleet.
Research vessel (R/V) Hespérides, (LOA 82.5 m) (http://www.utm.csic.es/HESPÉRIDES/) is a vessel belonging to the Spanish Navy that was built and launched in 1990. It is based upon the Port of Cartagena. The research that is carried out on this vessel is directed and funded mainly by the National R+D+I Plan.
Oceanographic vessel (O/V) García del Cid (http://www.utm.csic.es/Gdc/garcia.htm) belongs to Consejo Superior de Investigaciones Científicas (CSIC) (LOA 37.2 m) and was launched in 1979. Its maintenance is carried out in Vigo (Spain) with the support of CSIC's Marine Research Institute.
The B/O Mytilus (LOA 24 m) ) also belongs to the CSIC, is based upon the Port of Vigo,
(http://www.iim.csic.es/Mytilus.html
The B/O Cornide de Saavedra (LOA 66.7 m) belongs to the Instituto Español de Oceanografia (IEO). This vessel is used for marine scientific research and by national or international scientific teams. It is based upon the Port of Vigo.
B/O Francisco de Paula Navarro (LOA 30.46 m) is another ship from the IEO, and is devoted to fisheries activities and physical oceanography around the Spanish Atlantic and Mediterranean coasts. It is based upon the Port of La Coruña.
Moreover, the IEO has a group of 15-20 m long ships (http://www.ieo.es/buques.html) dedicated to coastal areas research.
The R/V Vizconde de Eza is owned by the Ministry of Agriculture, Fisheries and Food. The Vizconde de Eza (LOA 54 m) built 2001 has dynamic positioning, automated fisheries operations and a retractable keel to reduce any noise or disturbance.
The disaster with the tanker PRESTIGE changed all the planned cruise programmes, and ships were ordered to survey the area. This year the number of shipdays is very high because of the Prestige surveys.
HESPÉRIDES worked in the Antarctic on the Magelanic rise, in collaboration with Chile. The ship was planned also

to work off Columbia but it was impossible to obtain diplomatic clearance from Columbia. When HESPÉRIDES returns she is ordered to go to the Prestige area. It has become a political issue to have quick and adequate response to such disaster. The PRESTIGE lies on a 40 degree slope and is quite unstable. It is difficult to work there. Later this year HESPÉRIDES will have her mid-life refit.
The Ministry of Science and Technology has approved the construction of a new multipurpose oceanographic vessel (LOA: 70 m) for oceanic research that will be run by the CSIC. The assigned budget is 24 million Euro. The first tender will go out on 7 November. The ship will be a diesel-electric low noise multi purpose RV with removable fisheries capabilities (only ramp is permanent), and 25 science berths. Discussions are going on with IFREMER on the technical specifications for ROV and AUV deployment, and Side Scan Sonar. The ship must be capable to carry and operate the IFREMER equipment. Same applies for the Multi Beam Swath seismics. Delivery is planned May/June 2004.
*Mr. José I. Diaz (UTM-CSIC, Spain)* reported on the refurbishment of RV HESPÉRIDES. The main issue was corrosion problems. The mid life upgrade will take place in close collaboration with the Spanish Navy. The number of berths will be increased and the Multi Beam Echosounder will be replaced. A New bathymetric system will be installed. Next month the work will start which means that this season HESPÉRIDES will not go to the Antarctic, and another ship will support the Antarctic Station.

*Mr. Geraint West (NERC/SOC-UKORS, UK)* gave a short report on the changes in the Natural Environment Research Council (NERC) marine facilities. Regarding major equipment NERC has got a new ROV, a Jason II derivative, named ISIS, that will be based at the Southampton Oceanography Centre.
RRS DISCOVERY and RRS CHARLES DARWIN provide approx. 400 – 500 sea days. RRS DISCOVERY has been out of service part of the year for major fittings. Various systems have been replaced.. RRS CHARLES DARWIN has been working in the Indian Ocean and will return to the UK later this year.
On the replacement of the RRS CHARLES DARWIN a separate presentation will be given by Mr. Edward Cooper.

*Mr. John Freitag (USA – ONR)* reported on the six R/V's owned by ONR.
R/V's MELVILLE (LOA 279 ft), THOMAS THOMPSON (LOA 274 ft) , KNORR (LOA 279 ft), ROGER REVELLE ( 274 ft) , ATLANTIS (LOA 274 ft), KILO MOANA (LOA 185 ft). All vessels are now ISM certified.
The new R/V KILO MOANA now has been 1 year in operation. There were some initial problems with the DP system and the autopilot, but these could be solved..
As the first SWATH (Small Waterplane Area Twin Hull) design in the UNOLS fleet, the KILO MOANA's performance has proven to be a success, though the movement of the ship in heavy seas caused problems with over the side equipment, like CTD-work, and mooring deployment/recovery. Performance recording is going on.

*Ms. Dolly Dieter (USA – NSF)* reported on the University National Oceanographic Laboratory System (UNOLS) fleet funded by NSF. Though the operations are funded by NSF, NSF owns only 8 ships of the total number of 29.
Fleet Upgrades are going on with the building of the Alaska Region Research Vessel (ARRV).
R/V KNORR of WHOI has be fitted with a long piston coring installation
R/V MAURICE EWING of LDEO is under discussion for Upgrading or Replacement
Deep Submergence facility Jason II is absolutely busy with a full schedule of 300 days/year.
Plans are made to build a Hybrid Remotely Operated Vehicle (HROV). A unique fiber optic tether will provide real-time telemetry of data and video to surface ship. It should be self powered and can operate as an AUV or ROV with a reach of 11,000 meters depths.
The National Research Council (NRC) Study on US Deep Submergence Facility assets will be published in Fall 2003. This report will recommend on the replacement of the research submersible Alvin by a new, deeper-diving vehicle.
NSF is attempting to upgrade equipment on the UNOLS vessels through the Shipboard Scientific Support Equipment Program (SSSE) Group purchases are now common policy.
Scheduling inspections is difficult due to ship schedules. UNOLS is moving towards an electronic system via the UNOLS web for the Ship Data Form (a.k.a. Ship Condition Form) to generate a computerised maintenance program. The fleet future areas of focus: science winches, training, drills.

*Cdr. Elizabeth White (USA–NOAA)* could not attend the meeting and had submitted a few short notes on the changes in the National Oceanic & Atmospheric Administration (NOAA) fleet managed by the Office of Marine & Aviation Operations (OMAO) that were presented by *Ms Dolly Dieter.*
A new state of the art Fisheries Survey Vessel (FSV) OSCAR DYSON was launched on 17 October 2003 and will operate in the Alaskan waters as a new addition to the NOAA fleet. This is the first ship to meet the ICES requirements for low noise.
First steel was cut on 16 October for FSV2, that will operate in the North East United States and two more FSVs are planned for construction and will replace ageing fisheries vessels in the NOAA fleet.
Four 10 year old Navy vessels have been converted to replace even older vessels of the NOAA fleet and one Navy vessel will be a new addition to the NOAA fleet.
A new 33 m SWATH vessel is under design to replace an old East Coast (New England) hydrographic vessel.

3.2. Ship Time Barter/Exchange
*Ms. Marieke Rietveld (Netherlands)* reported that in the framework of co-operation with Italy the Italian R/V Universitatis and M/S Mare Oceano in the Mediterranean were used for the joint long-term programme PASS.
A barter cruise was sailed on the UK RSS Charles Darwin for the LOCO project in the Indian Ocean (Mozambique Strait).
A joint cruise was sailed on the New Zealand R/V Tangaroa on the New Zealand continental shelf in collaboration with NIWA, also on the French R/V L'Atalante with the submersible Nautile in the Eastern Mediterranean for the ESF EUROCORES programme MEDIFLUX (NAUTINIL).

There was also a joint cruise on the R/V Polarstern in the Antarctic.
Within the barter arrangement an add-in cruise on RV L'Atalante and a shared barter on RV L'Europe took place. Early November a barter cruise will start on RV Pelagia for NERC/SOC and CSIC for the EU EUROSTRATAFORM project with the NERC deep tow bathymethric instrument (TOBI), also surveying in the Galicia Bank area where the Prestige sank for CSIC.

*Mr. Juanjo Danobeitia (CSIC-UTM – Spain)* confirmed that Spain has become an observer to the barter group to become a full member soon.

*Mr. Geraint West (NERC/SOC-UKORS – UK)* added that, NERC had six barter cruises within the group, and there were a number of cruises on UNOLS ships within the barter arrangement with NSF, and that such cruises are planned also for 2004.

### 3.3. Staff Exchanges

*There were no reports on staff exchanges*.

### 3.4. Equipment lost

*Cpt. Masatake Zaitsu (NME - Japan)* reported that on May 29, the ROV KAIKO was conducting earthquake research on the sea floor some 4675 m below the surface in Nankai Trough, off southern Japan, when a typhoon approached. Operators on the RV KAIREI decided to reel in the probe before the storm struck and could not join KAIKO with the launcher because of power failure of the vehicle. The secondary cable was snapped at the cable end.
KAIKO vehicle is designed to float to the surface and emit a tracking signal if its tether is broken. Although searchers briefly detected the beacon, which meant that the vehicle surfaced, they were unable to locate it. Since then KAIKO is missing. No trace of it even after extensive search from sea and air. Investigation of the accident revealed that the tension members in the cable probably were weakened by bending under high pressure. A microphoto of the tension lines showed many kinks.
JAMSTEC decided that a new KAIKO system will be developed. UROV7 will now be modified as a temporary replacement of the KAIKO vehicle.
*Mr. Hiroyasu Momma (JAMSTEC – Japan)* added that 1 ADCP Mooring System was lost deployed in Nov. 2001 off Okinawa Islands and 1 BGC Mooring system deployed on Oct. 2002 in the North Pacific K2-Point.
3 OBS were lost, one in 2002 and two in 2003. Still the recovery rate increased from 97.4 to 98.7%.

*Mr. Ian Calvert (South Africa – SMS)* reported that AFRICANA lost a streamer in the South Atlantic.

*Mr. José Diaz (CSIC-UTM – Spain)* reported the loss of a CTD on the Mid Atlantic Ridge during transit to Antarctica due to poor cable condition. As soon as HESPÉRIDES will reach Antarctica, the cable will be replaced.

*Mr. Geraint West (NERC/SOC-UKORS - UK)* reported the loss of a CTD by RRS CHARLES DARWIN in the Indian Ocean.

## 4. European RV Operators Workshop – Constanța, Romania, April 2003

*Mr. André Pollentier (Belgium)* participated in the 5th ERVO meeting held in Romania at the Black Sea resort of Mamaia (Constanta area), 25 - 26 April 2003, which was hosted by the Romanian National Institute of Marine Geology and Geo-Ecology (GeoEcoMar) and the European Science Foundation–Marine Board (ESF-MB). The meeting was chaired by Dr Gheorghe Oaie of GeoEcoMar, Bucharest, Romania. The ERVO was attended by 30 persons of 10 RV operator groups representing 5 EU Member States (Belgium, Finland, Ireland, Sweden and UK), 2 Associated States (Iceland, Norway) and 3 New Accession States (Romania, Bulgaria and Poland participated in the Meeting. Messages from EUROCEAN and Turkey were presented.
ERVO 2003 had two specific objectives:
1. To welcome RV operators from the New Accession States (Romania, Bulgaria, Poland, Turkey).
2. To facilitate core ERVO agenda on exchange of information on issues concerning RV operation.
Current issues of common interest / concern included:
. The ISPS Security Code.
. Implementation of the ISM Code.
. Quality Control on Fishing Gear / Other instruments.
. Coastal State MSR Clearance.
. Minimum Certification required by scientific personnel.
. Submersibles.
. The Future: RVs vs. AUVs.
. Marine Archaeology.
. On-board waste management.
It was agreed that the primary focus of ERVO Meetings and presentations should be on issues of mutual interest to RV operators rather than general back-ground issues.
The minutes of ERVO are available on the ESF Marine Board website:
http://www.esf.org/generic/625/ERVO2003report.pdf

## 5. Future plans on research fleets

### 5.1. US –Charting the Future for the National Academic Research Fleet

*Ms. Dolly Dieter (NSF – USA)* brought forward that after completion of the FOFC "Charting the Future for the National Academic Research Fleet" ship renewal Plan the US Government now asks for an Integrated Federal Fleet renewal plan that can serve as a proposal to Congress. The "National research fleet Plan" should be dealing with RV's strictly for state and/or Government funded research, and not comprise charters. The FOFC has accepted the challenge and is now working towards integrating the Federal fleet renewal plans.
ONR is initiating a feasibility study of attaining science mission requirements (SMRs) under USD 80 Million budget for an Ocean Class vessel. NSF contracted a study on the feasibility of attaining science mission requirements (SMRs) within USD 25 Million budget for Regional Class. Because of tonnage limits the oceanographic community is requested to re-evaluate the SMRs.
NSF aims at building three Regional Class vessels and MREFC (Major Research Equipment and Facilities Construction) projects including the Alaska Region Research Vessel, the IODP Drill Ship, and the Ocean Observatories Initiative.

The FOFC has initiated a vessel "lease versus purchase" analysis.

**5.2. EU/ESF – Marine Infrastructure & Research Fleets**

*Ms Marieke Rietveld (Netherlands)* reported on efforts to reach a co-ordinated approach on operation and strategic planning for the European research vessel fleet.

On operation: research ship operators in Europe use various platforms, like ISOM and ERVO for exchanging views and discussing best practice. From the ISOM evolved in 1996 the Tripartite barter group, formed by the German ministry for research BMBF and the national research agencies of France (Ifremer) and UK (NERC). In 2002 Royal NIOZ joint the group and the research council of Spain (CSIC) joint as an observer. Main objective is exchange of shiptime and major equipment via 'bartering' based on value points according to scientific capacity as agreed between members. The group meets twice per year (Spring and Autumn) for 1 day. Future perspectives are to absorb new active members, increase ship exchanges, increase inter-operability of major equipment, and co-ordinate major investments. Further shared investment costs, shared RVs, and development of joint cruises.

Foreseen new builds within the group are: the 80 m NO BEAUTEMPS BEAUPRÉ (Ifremer/French Navy) - 2004, the 95 m FS Maria Sibylla MERIAN (Germany) – 2004/2005, the 105 m NO POURQUOI PAS? (Ifremer) - 2005, and the RRS Charles Darwin replacement (NERC) – 2006. The Spanish Government recently approved the building of a 60 –70 m new multi-purpose RV.

On the strategic planning: in 2002 the European Strategy forum on Research Infrastructure (ESFRI) of the European Union installed the ad hoc Working Group on Marine Research Infrastructure (WG MRI). Members are from scientific institutions, national research agencies and ministries. The MRI reported in 2003 and recommends to establish a 'virtual' pool of RVs in Europe, following the Tripartite group model, and to establish a Marine Infrastructure Strategy Group (MISG), that could be an important actor for long term strategy on investments and new builds of the European RV fleet.

The European Science Foundation (ESF) Marine Board installed the Ocean research Fleets Working Group (OFWG). Members are RV operators assigned by Marine Board member states from various European zones. The OFWG will liase with other European fora on RV's. The objectives are the description of existing fleets and their management; recommendations for an enhanced European ocean fleet and its management, recommendations on a more efficient use of the fleet, and on the establishment of a common long-term investment strategy. The OFWG started from the EU report on national fleets of RVs in Europe (Von Spee et. al.) that was an inventory of the existing fleet of RVs over 35 m. From there the OFWG will elaborate on the existing management and funding processes as well as on the existing partnerships and possibility of further collaboration. The OFWG should produce a tool for politicians to decide on future investments in marine infrastructure, including fleet renewal. The OFWG first met in September 2003.

**6. National Oceanography Commission - CONA**

*Mr. Rodrigo Nuñez (SHOA – Chile)* reported on the research fleet of the Chilean Hydrographicc Survey (SHOA) that is also active in research cruises through the Chilean National Oceanographic Committee (CONA), the 64 m RV VIDAL GORMEZ (former AGOR10) and the 30m RV CABRALES. CONA is funding 40 science days at sea. The VIDAL GORMAZ was built in 1965 and is part of the Chilean research fleet since 1992. She is planned to be decommissioned in 2006. As Chile does not have much funds, the option is to buy another second hand ship.

The Director of SHOA is president of the National Oceanographic Committee (CONA).

CONA has been installed to facilitate ocean research in the Chilean EEZ for better use of its natural resources, better environmental protection, and better knowledge of the ocean's influence on the climate. CONA also aims at better co-ordination of the institutes and organisations that are involved in marine research. This is reflected in the National Oceanographic Plan that is evaluated and updated every year.

Research cruises of RV VIDAL GORMAZ mainly take place in the central part of Chile between 38º S and 30º S from Talcahuano (Center-South Zone) till Coquimbo (North Zone), mainly for environmental reasons.

The smaller RV CABRALES, equipped with multi beam echosounder, is mainly involved in cartographic work, and is active in the Southern part of Chile, though limited because of sea state.

*Mr. Nuñez* also elucidated the Chilean clearance procedure and its history. This is reported under agenda item 16.

**7. Universitad del Mar – COPAS**

*Mr. Giovanni Daneri (UdMar – COPAS, Chile*) gave a presentation on the Center for Oceanographic Research in the Eastern South Pacific (COPAS). COPAS was created in 2002 with funding provided by the Fund for Advanced Research in Priority Areas (Centers of Excellence FONDAP) of the National Commission for Science and Technology (CONICYT).

COPAS main research focus is on multi- and interdisciplinary research on the physical, biogeochemical, ecological and paleoceanographic processes that occur in the systems of the Eastern South Pacific (ESP) region. Its scientific goals in the medium-term (5 years) are:

i) to analyse and understand the impact of the ENSO (El Niño Southern Oscillation) cycle and other large scale phenomena in the region and its feed-back on the climatic system,

ii) to study the structure and function of the Oxygen Minimum Zone (OMZ) and its impact on the climatic system, and

iii) to identify the role that the Antarctic Intermediate Waters (AAIW) play in the physical, chemical and biological characteristics of the region and its modification due to the global climate change.

COPAS further focuses on training of young scientists by improving education and provide better research opportunities for young scientists. This may be achieved by promotion of international co-operation and participation international and global programmes.

*Mr. Daneri* stressed the importance of marine research for Chile. Chile has an extremely long coastline along the south eastern boundary of the Pacific Ocean, between latitudes 18°S and 56°S, with a length of 4100 kilometres and an average width of 220 kilometres. It has three well defined climatic regions: Desert, Subtropical and Temperate Oceanic. The desert region is one of the earth's driest, with areas that receive less than one millimetre of rainfall per

year, with no particular seasonal cycle. The Subtropical region has a climate with four well defined seasons and most of the precipitation (around 450 millimetres per year) during fall and winter. Further south, the Temperate Oceanic region is characterised by year-round precipitation that keeps the landscape green but limits farming to the growing of more traditional grains and pasturing animals. All of them are affected by "El Niño Southern Oscillation" (ENSO) or by oceanographic and meteorological anomalies associated with ENSO.
Research ships are of utmost importance, and RV ABATE MOLINA serves as the main platform. There are, however, problems with research in the deeper trenches as the cable that measured 5000 m has become shorter than 3000 m.
The study region of COPAS is, to a large degree, concentrated in the eastern boundary current or Humboldt Current System (HCS) off Chile (18-42ºS). Other areas in the ESP, to the south (>43ºS), to the north (<18ºS), and to the west (open ocean, South Pacific gyre) will be considered through international co-operation efforts, joint projects, and data access agreements (e.g., remote sensing, mooring systems, cruises in the ESP). Further information can be found on the web address: www.copas.cl

**8 JAMSTEC's programmes and issues (1)**
*Mr. Chiyija (JAMSTEC – Japan)* gave a concise summary of a number of items under this topic.
a. The OD 21 Riser Drilling Vessel CHIKYU has now entered her installation phase.
b. The AUV URUSHIMA has completed successful sea-trials and its power capacity has been increased towards 4 kW by installation of fuel cells.
c. A real time deep sea observatory off Hokkaido island made timely observations of the latest earthquake off Tokachi-oki, the South East coast of Hokkaido on 26 September. The earthquake's damage could be restricted to buildings and fires, with only 1 victim.
d. INMARTECH 2002 held in Yokosuka 7 – 11 October 2002 was successful with 67 presentations, and 169 participants from 13 countries.
e. JAMSTEC will be organized in a new legal body as of April 2004 by absorbing the two research ships of the University of Tokyo (ORI).
*Mr. Hiroyasu Momma (JAMSTEC – Japan)* added that these RV's whose jurisdiction will be transferred are the 100 m HAKUHO-MARU (build 1989) and the 50 m TANSEI-MARU (built 1982). The average days at sea for the JAMSTEC fleet is 270 – 300 days per year. The two OKI ships so far did an average of 150 days/year, because of lack of funding.
*Mr. Momma* continued on the following issues:
f. The "BEAGLE" around the world cruise of RV MIRAI is the highlight of the year. The studies focus on the Antarctic overturn that plays a key role in the Southern Ocean. The cruise is a follow up of the WOCE programme and is embedded in the Partnership for Observation of the Global Oceans (POGO). Over 500 science stations are planned for CTD measurements, water sampling, and piston coring will take place at 3 stations West of Chile, and 3 stations South East of Australia.
g. Technical Support for research cruises is given by three organisations, NME (Nippon Marine Enterprises) with 20 Marine Technicians. Main operations are in Geophysics / MCS / OBS / Deep Sea Research, operating on the R/V's NATSUSHIMA, KAIYO, YOKOSUKA, and KAIREI; Marine Works Japan (MWJ) with 144 Marine Technicians. Main operation Water sampling/ Mooring / Chemical analysis /Deep tow / Sediment Sampling; and GODI (Global Ocean Development Inc.), with 8 Marine Technicians. Main operation : Geophysics / Meteorological observation, operating on R/V MIRAI and D/V CHIKYU.

**9. OD 21 Riser Drilling Vessel CHIKYU**
*Cpt Akio Nakagawa (GODI – Japan)* presented the status of the Drilling Vessel CHIKYU. The ship has left the Mitsui Tamano Shipyard in April for sea trials and after that sailed to Nagasaki at the Mitsubishi Shipyard for drilling parts construction and installation, overall sea trials and tests, where it arrived on 1 July 2003. On 26 September the installation of the drilling derrick of 107 m was completed.
Cpt Nakagawa showed pictures of the wheelhouse, the bridge, labs, cabins and (single) messroom. The total science component of the ship is 49 (30 scientists and 19 marine technicians). There is room for another 8 guests. The crew component including drilling personnel and catering is 72. Total capacity 150 persons.
Specs of the CHIKYU are: LOA 210 m, width 38 m, Gross tonnage 57.500. DPS with 6 x 4,200 kW Azimuth Thrusters and 1 x 2,550 kW Bow Thruster. Two generators, main generator 6 x 5,000 kW, auxiliary generator 2 X 2,500 kW. Speed 10 knots. CHIKYU will stay at Mitsubishi shipyard in Nagasaki until April 2005. From May 2005 it will go to JAMSTEC for introductory operations. In October 2006 the ship will be operational for the IODP programme.

**10. New R/V G.O. SARS, lessons learned**
*Mr. Per Nieuwejaar (Norway - IMR)* reported on the experiences with the new building of R/V G.O. SARS.
A small project team with Skipsteknisk AS as designer, senior technicians, scientists, a shipyard inspector and noise consultant was formed to build the multipurpose G.O. SARS, a 50 million Euro (55-60 million USD) project funded by the Norwegian Parliament. The steelwork was done in Gdynia (Poland) and the installation at Flekkefjord Slipp & Maskinfabrikks in Kvinesdal (Norway).
For DP manoeuvrability resiliently mounted tunnel thrusters on bow and stern were installed and a retractable thruster at the bow. To achieve a very low noise level, according to ICES standard 3 double flexible mounted diesel electric engines (Wärtsila) were installed generating 8 megawatt with vibration reduction. Main propulsion by two TECO Westinghouse 3 megawatt DC motors in tandem. The noise reduction and vibration calculations were done with the help of DNV (Det Norske Veritas).
Four Hydralift Deck cranes and a CTD davit. A double set of winches for trawling. All winches are electric and remotely controlled. The bridge is 190 square meter, and single handed with side and back navigation. Three men on the deck and 28 camera's.
The ship carries lots of acoustics and multibeam sonar for fish volume measurements. G.O. SARS has two drop-keels.
Equipment includes a vessel mounted ADCP. A MBS and sub-bottom profilers for deep sea floor and cold coral reef mapping. The ship is capable of handling AUV Hugin, and ROV's (AGLANTHA) as well as other towed equipment. All these operations are possible over the side from a covered hangar.

Research work the vessel is capable of carrying out include: pelagic and bottom trawling, plankton sampling, CTD/ rosette operations, towed body operations, hydrographic operations, water sampling, miscellaneous kinds of environmental sampling, grabbing and coring, hydro-acoustic research work, seismic operations.
Most labs are fixed labs, according to the wish of the scientists in Norway who do not like container labs and that the "turn around time" in port is drastically reduced since it is no need for on/off loading of containers and no need for coupling/decoupling of hoses and cables from the containers to the ship systems . *Mr. Nieuwejaar* admits that this is more expensive moneywise, but in the Norwegian situation this is more efficient timewise.
All cabins are noise reduced, with noise range better than cruise standard. The ship has a 30 seats auditorium and large projection screen.
The communication system is via NORSAT Sealink, Hi-LAN and Ships-LAN.
The ship was officially launched 7 May, 2003 in Bergen. It was awarded the Nor-shipping "Ship of the year award" for 2003.

**11. RRS Charles Darwin Replacement – Update**

*Mr. Edward Cooper (NERC/SOC – UK)* reported that funding for the replacement of RRS Charles Darwin is granted and 40 million GBP (60 million Euro) is available to build a state-of the art multi-role oceanographic research vessel. The ship should have enhanced capabilities, operating world wide (tropics to ice edge – i.e. Greenland in November). It should be a DP ship with improved handling systems and increased number of scientific berths for both scientists and technicians. A consultation exercise amongst UK marine scientists and support services has been undertaken under the auspices of the NERC Research Vessel Advisory Panel (RVAP). This consultation has been undertaken with specific groups, moorings, ROV, Science programmes, other groups elsewhere in the world like UNOLS, etc., and a User Consultation Panel has been formed. A business case has been made with Outline Project Plan and GA Drawings. The Statement of Requirements (SOR) is underway and expected to be ready in October.
The new vessel should be ready by mid or end of 2006.
Unconfirmed details assuming a new build are as follows: 85 – 90 m vessel with DP, 32 Scientists / technicians, 2 Drop Keels (no moon pool), Low noise, try to meet ICES standard at 11 knots (No fisheries research), Draft less than of fisheries vessel, Annex Laboratory Containers (2/4), Other Containers (9), Laboratory Suites mainly general but some dedicated, Multibeam(s), Sub Bottom Profiler, ADCP – 75 & 150 kHz, Fisheries Echo Sounder – multifrequency, Winches fitted and some re-locatable, ISIS ROV (cf. JASON-II) capable, A-Frame, P. Gantry, Hydroboom.
A comparison has been done between single screw and twin-screw propulsion. According to *Mr. Nieuwejaar* propeller suppliers can provide excellent models.
Regarding shipyard interest: there were 23 Expressions of interest, and 12 Responses to PQQ (Pre-Qualification Questionnaire). Further information on the NERC website: http://www.nerc.ac.uk/funding/marineplan/jcp_intro.shtml

**12. Conversion of RV SOUTHERN SURVEYOR**

Mr. Ron Plaschke (Australia – CSIRO) gave an overview of the conversion of RV SOUTHERN SURVEYOR to replace FRANKLIN as Australia's National Facility Research Vessel. ORV FRANKLIN was purpose built in 1984 by CSIRO as Australia's 55m National Facility ORV, and was operated by CSIRO Marine Research from 1985 to 2001.Funded for 180 days per year.
RV SOUTHERN SURVEYOR was built in 1972 as a 66m Arctic stern trawler, then refitted as a North Sea diving support vessel and purchased in 1988 by CSIRO Marine Research, refitted as a fisheries and oceanographic RV. She was operated 1991 to 2001 as RV vessel as well as for commercial charter work. A new main engine was fitted in 1994. New research demands were limited by Franklin's capabilities, particularly in fisheries and geoscience, and urged for fleet rationalisation. CSIRO Marine Research (owners of SOUTHERN SURVEYOR) considered chartering more cost-effective than vessel ownership. The decision was taken to sell FRANKLIN and convert SOUTHERN SURVEYOR to the new multi-purpose National Facility RV. To sell FRANKLIN a tender was advertised in December 2002 through international brokers C W Kellock, London. The tenders closed in February 2003, and the new owners are Tiger Marine Systems (TMS) in Sweden. RV FRANKLIN sailed from Hobart in August 2003 for Stockholm. Her future will be a demonstration vessel for a new hull coating system and for tourism research
There are plans to operate SOUTHERN SURVEYOR 180 National Facility days per year plus 80 Research Charter days per year by partner agencies. The SOUTHERN SURVEYOR conversion aims to improve the vessel's multi-purpose capability to enable a wide range of marine research in: oceanography, geosciences, fisheries, and ecology
Scope of the Conversion Project is to remove the existing trawl gantry and open up the after- deck while retaining trawling capability. To install a new 15T wide angle A-frame and coring winch; to the after-deck crane and hydrographic winch, to upgrade selected laboratory and accommodation spaces, storage and recreational areas, and to upgrade communications, UPS, sewage treatment etc.
The conversion took 8 month, at the cost of AUD$2M.
*Mr. Plaschke* showed pictures of various highlights of the conversion project.
RV SOUTHERN SURVEYOR key technical capabilities are: LOA 66m with dynamic positioning, Trawl warps with 5000m of 24mm wire each; Coring winch with 5000m of 19mm wire and net drum, 15T wide angle stern A-Frame, side A-Frame, Twin drum hydrographic winch each with 7000m of 8mm conducting wire. Heila after-deck knuckle boom crane, 7T@12m. Sea trials took place in February 2003.
The ship will be used extensively during research charters by partner agencies as well as National Facility users
The 2003/2004 research schedule so far, have involved research on:

- submarine volcanoes in the Western Pacific
- sand movements along Australian east coast
- geoscience aspects of northern Australian waters
- fisheries biology in western Australian waters

New Capabilities will include a Swath mapper, Kongsberg Simrad EM 3000 1 * 1 degree system and sub-bottom profiler to follow. Under keel gondola installation in December dry docking.
Partnership between CSIRO Marine Research, Geoscience Australia and National Oceans Office – AUD$3M project

SOUTHERN SURVEYOR be used extensively during research charters by partner agencies as well as National Facility users
More information www.marine.csiro.au/nationalfacility/

**13. Specific developments in Spain – organisational changes and new building**

*Prof. Juanjo Danobeitia (CSIC/UTM – Spain)* reported on the new developments within the marine science organisation in Spain.
A new building was opened for the Mediterranean Marine and Environmental Centre (CMIMA) on Barcelona's marine drive. The Centre resorts under the Scientific Research Council CSIC. The is composed of the Institute of Marine Sciences (ICM) and the Marine Technology Unit (UTM). The goal of the CMIMA consists on furthering and expanding our scientific understanding of the seas and oceans and discovering their role in the context of our planet. The UTM was created by the CSIC to take charge of R&D, logistical and technical support for oceanographic research. The UTM is responsible for the technical management of a number of major oceanographic facilities, such as the Navy owned 82.5 m Oceanographic RV HESPÉRIDES (1990), the 37 m RV GARCIA DEL CID (1977), the small launch MYTILUS and Spain's Antarctic Base "JUAN CARLOS I".
RV GARCIA DEL CID will be replaced, as mentioned during the Round Table, and hopefully next year there is more information available.
The association of the ICM and the UTM makes the CMIMA one of the leading marine research centres in Spain and in the Mediterranean region. CMIMA researchers take part in international oceanographic projects and surveys in nearly all the world's seas and oceans.
The technical support needed better organisation, and therefore CMIMA has two organisations: ICM for science, and UTM for technology. UTM will do the technical development of new tools and the equipment support on board, including heavy seismics and compressors. UTM also takes care of the scientific infrastructure maintenance, the equipment maintenance and its calibration.
UTM also runs a large oceanographic database. A World database for Environmental Science. UTM is active in R&D for challenges as new sensors, new systems, remote and on-line processing, cost-effectiveness, two-way data flow.
Another big player in marine research in Spain is the IEO (Instituto Español Oceanografica), also resorting under CSIC, with eight coastal centres, and mainly involved in multidiciplinary marine biological research (fisheries and environmental research) and owner of the RV's CORNIDE de SAAVEDRA and five smaller ships.
The challenge that is now at stake is how to form a National Marine Management Centre. For better efficiency and flexibility enhancement. Joining forces of IEO and UTM-CMIMA also involving the Fisheries RV of the Ministry of Food and Agriculture VISCONDE de EZA (54 m).
A modest start has been made with a combined time schedule for the total of 10 research ships (including the French RV THALASSA that is available for Spain during two months per year for fisheries research).

**14. Research Vessel opportunities for ARGO**

*Ms Marieke Rietveld (Netherlands)* introduced this topic, for which she was briefed by Dr. John Gould, director of the Argo International Project Office at Scripps (SIO) in La Jolla, USA. Dr. Gould also provided a fact sheet that was distributed to all members. Argo is an international project in which (at present 18) countries collaborate to deploy an array of free drifting autonomous floats that collect information from the upper 2 km of the global ocean. The floats spend most of their (typically 4 year) lives at depth and rise to the surface every 10 days to make CTD profile observations that are transmitted, and the floats located, by satellite.
The data collected are freely available, and not restricted to the Argo contributing countries.
Argo has a target of 3000 floats to be in place by 2006. At present (September 2003) 888 floats are operating.
The floats can be deployed by various means. - by merchant ships on passage, from C-130 and some maritime patrol aircraft, and from research vessels. Agreement on the operation of floats within EEZs has been reached through the Intergovernmental Oceanographic Commission of UNESCO. The intergovernmental mechanisms are detailed at the Argo Information Centre (http://argo.jcommops.org).
A particular challenge faced by Argo is that of populating the rarely visited areas of the ocean and particularly those in the southern hemisphere.
It is in this regard that ISOM members may be able to assist Argo. This assistance could be in several forms.
1) Alerting the Argo project when research vessels are likely to visit remote areas of the deep ocean
2) Facilitating the deployment of floats either on passage legs or within research activities
3) Helping with customs clearances.
For item 1) contact should be made with the Argo project office (argo@ucsd.edu). For items 2) and 3) negotiations would be with the float providing country.
The assistance of ISOM is sought in this regard.
ISOM members acknowledged, that they were aware of Argos, and willing to assist. *Mr. Rodrigo Nuñez (Chile)* confirmed that Chile is in favour of the Argo floats, and offer ships, however, in Chile the floats are subject to the law of the sea, and diplomatic permission has to be requested.
*The address is: Dr. W John Gould, Argo Project Director, Scripps Institution of Oceanography, 9500 Gilman Drive La Jolla, CA 92093-0230, USA, Phone 858 534 5096, e-mail:* argo@ucsd.edu

**15. Marine Mammal Environmental Policy and Acoustic Pollution (JNCC)**

*Mr. Geraint West (UK – NERC/UKORS)* gave a presentation on Guidelines for Acoustics & Marine Mammals. He recalled incidents of stranded marine mammals in the last five years, which led to the introduction of mitigation by protected areas and guidelines. Legal background is embedded in international law and conventions that found room for general interpretation regarding the obligation to protect and preserve the marine environment and the requirement of precautionary and anticipatory approaches.
The Rio Declaration and Agenda 21 add that lack of full scientific certainty cannot be used as an excuse for taking appropriate measures to prevent harm to the environment.
The ASCOBANS (Agreement on conservation of Small Cetaceans of the Baltic and North Seas) stated in August this year that sonar may have potentially lethal consequences. This statement finds more and more scientific evidence as

recent publications reveal. In its 4th Resolution the protected area was extended towards the Irish Sea and the N.E. Atlantic, so closing the gap with the Agreement regarding the Black Sea and the Mediterranean.
The UK JNCC (Joint Nature Conservancy Council) adopted guidelines following extensive consultation, that have been endorsed by ASCOBANS, and is adopted voluntarily by UK Offshore Operators, and International Geophysical contractors for all UK shelf operations. Recordings of marine mammals are essential, and the mitigation measures can be summarised by: a 1.5 km zone + 30 minutes distance, and qualified observers (MMO's) as was shown by the Sonar Trial of RV Triton and RV Pelagia this Spring.
*Mr. West* showed a comparison of guidelines and MMO requirements between UK-JNCC, SACLANTCEN, Environment Australia and MMS (Gulf of Mexico).
Conclusions are that the link between acoustic pollution and marine mammals is now widely accepted. Knowledge and visibility is increasing. Nevertheless policy and protocols are primarily driven by offshore industry and military. There is a need to harmonise guidelines wherever possible. *Mr. West* concluded with several information sources, and acknowledged gratefully the assistance of Roland Rogers of Qinetiq, UK for the preparation of his presentation. As a wealth of information was in the presentation, it was agreed that the file would be added to the ISOM website shortly after the meeting.
The marine mammal issue in relation to sound pollution will remain on the ISOM agenda.

**16. IMO regulations in high latitudes – Update on Arctic and Antarctic rules**

*Mr. Fred Smits (New Zealand)* gave an update on this issue.
There is a significant difference between Arctic and Antarctic, simplified to: Arctic = ice surrounded by land and Antarctic = land surrounded by ice. *Mr. Smits* reported that the IMO Arctic rules on ice-covered waters were ratified in December 2002. Details can be found on the IMO website: http://www.imo.org/includes/blastDataOnly.asp/data_id%3D6629/1056-MEPC-Circ399.pdf
At the XXVI (ATMC) Antarctic Treaty Consultative Meeting in Madrid June 2003, Antarctic Treaty countries asked CONMAP (Council of Managers of National Antarctic Programs) to review the IMO guidelines and recommend whether these are applicable to the Antarctic. The ship operators group of CONMAP made up a draft that was transformed into a final version in July 2003.
The rules refer to the region south of 60º South.
Important pragmatic issues are: ice-pilot training; double bottoms limited application (major costs); cleaning of oil evaluation (as cleaning may cause more pollution); and removal of wrecks may cause greater environmental damage than leaving wrecks alone.
Next meeting of the ATCM in November 2003.

**17. Insurance and Liability - Update on world Insurance and Legal and Liability issues**

*Prof. Dennis Nixon (NSF/UNOLS - USA),* the Risk Manager and Legal Advisor for the US UNOLS fleet, recalled the important role that Chile had played regarding the UNCLOS. In 1946 Chile was the first country to install a 200 nautical mile zone.
Regarding the issue on marine mammals, *Prof. Nixon* noticed the diversion in the world between countries active in the ocean noise and marine mammal rules versus the countries involved in scientific whaling.
The Marine Mammal Protection Act (MMPA) is currently going through the amendment process. Proposed changes to the MMPA include: The definition of "harassment" has been modified from the "potential to injure" to the "probability of injuring," which would result in a lower degree of protection for marine mammals. These proposed amendments to the MMPA come at a controversial time
Relaxing the definition of harassment could become controversial due to recent marine mammal strandings apparently caused by sonar use in the ocean.
Behavioural responses to ocean sound are variable and depend on both internal and external factors.
These responses are still considered "harassment" under the new MMPA amendments, however, cessation of activity will need to occur if there is a "probability" rather than "potential" to injure the marine mammal.
The NRC report "Ocean Noise and Marine Mammals" (2003) developed several recommendations concerning the effects of sound on marine mammals resulting from research activities.
As a result the testing of a device for listening to whales was declined because it might disturb the grey whales.
Insurance and Liability: Insurance and liability updates have arisen from cases decided during the past year. The cases discussed concern collisions, breach of contract with fraudulent misrepresentation, personal injury claims, the Jones Act, Maintenance and Cure, and general maritime law. Details on the cases can be found on the ISOM website under minutes/drafts.
The poor underwriting performance combined with deteriorating returns in equity markets has led to a 20-25% increase in rates. At the end of 2002 losses on hull & cargo had risen to 800-850 million USD. Losses could not be compensated through investment income. It may be expected that global marine hull insurance rates will peak in 2005, a year later than previously expected. But there remains doubt whether these increases will be sufficient to return the market to profitability
The loss of the space shuttle Columbia influenced the Lloyds loss with nearly $17.7 million.
Although piracy is on the rise, it seems to have less effect on marine insurance rates than the stock market, as maritime crime effects a relatively small percentage of world shipping.
ISM Code update: A 65% reduction in the number of casualties since its implementation was reported.
Nevertheless there is consensus that the ISM code generates too much paperwork. Lack of time to complete the paperwork could result in an accident because seafarers then try to do it while they are on watch.
2002 Marine Insurance Expenditures: the US fleet spent 1.4 million USD on insurance. The big ships are the high spenders, all just P&I with salvage, no Hull & Machinery.
Over a ten year range, profit was in the first eight – now comes the expenditure. Also, when adding new vessels, cost of insurance will rise.

**18. Diplomatic Clearance**
**Update: procedures/trends/trouble shooting**

*Mr. Rodrigo Nuñez (SHOA – Chile)* explained the Chilean procedure DS711 for clearance, that was established in 1972, ten years earlier than UNCLOS. Not only foreign

vessels, but also Chilean ships has to ask for permission six months in advance. For non Chilean research a copy of the data have to stay in Chile, and samples always have to be taken in duplo, where one sample stays in Chile. It is advisable to have a Chilean counterpart on board. Applications can be sent directly to the Navy Hydrographic and Oceanographic Service.
*Ms. Liz Tirpak (Department of State - USA)* gave an update on the procedures by the U.S. Government. The Department of State (DOS) facilitates the transmission of MSR applications to the appropriate authorities as required by UNCLOS.. DOS assists both the U.S. research community seeking access to foreign territorial seas and EEZs and the foreign research community seeking access to U.S. waters. DOS also co-ordinates U.S. science policy development and delegations to international meetings such as IOC, ICES, PICES, SOPAC, regional fisheries management organisations, UNEP Regional Seas Programs, International Maritime Organisation, and those regarding the application and interpretation of the Law of the Sea.
*Ms. Tirpak* presented clearance trends from the last five years, wherein the number of applications by the US to conduct MSR in foreign waters averaged approximately. 300 per year and the number of applications received from abroad are approximately 65 per year. The U.S. fleet has been denied 16 times over 2002-2003, primarily due to a lack of response from the coastal State. Recommended actions are to meet the 6-month lead time, to submit complete applications, to establish foreign partners, and to check threat assessments and advisories. DOS refers ship operators to NIMA Maritime Safety Reports (http://pollux.nss.nima.mil/index/index.html) and DOS travel warnings (http://travel.state.gov/warnings_list.html) for regularly updated information. Countries are welcomed to view the procedures and forms on the DOS website: http://www.state.gove/g/oes/ocns/rvc/.
*Ms. Tirpak* announced her intent to pursue the following improvements to the clearance process in 2004: provide online application for both applicants and researchers interested in reviewing the U.S. RV clearance history, provide application for Aircraft MSR Operators, provide information regarding research-related import & export permits, provide port call guidance for US & foreign ship operators,, improve co-ordination between USG agencies with regard to foreign applications, provide visa assistance to scientific participants, work with the UN to update their LOS country files, and integrate U.S. clearance interests in bilateral science and technology agreements

**19. NIWA's Vessel Risk Management & Replacement Study.**
*Mr. Fred Smits (New Zealand)* introduced NIWA's Risk Assessment to determine levels of risk associated with loss of revenue or incurred costs for medium (1 – 6 months) period of vessel downtime for each client of NIWA.
Ship breakdown and science downtime separated. Risk variety from 120.000 – 900.000 USD.
Minimisation through procedures and training.
For disaster replacement, there are the problems of insurance (that is underinsurance) and emergency response, say a minimal ship.
For replacement after distinct end of life – which means to substitute with a new, more state-of-the-art vessel, a comparison was made between a number of RV's and their new build costs. (Scotia, Celtic Explorer, G.O. Sars, Charles Darwin replacement). Costs for disaster replacement of Tangaroa would then range from 31 – 62 million USD. To cope with this, cash reserves need to be increased. This has as a consequence that charter rates will rise. *Ms. Dieter (NSF – USA)* concludes that this would mean that a depreciation rate is included. *Mr. Nieuwejaar (Norway)* remarks that such system would not be feasible in the Norwegian system, where the Government as a financier, would deduct build-up reserves from its grant.

**20. Safety and Security issues**
**20.1. International Ship and Port Facility Security (ISPS) Code**
*Mr. Per Nieuwejaar (Norway)* recalled the background of the ISPS Code, that was prepared by the IMO and adopted by the SOLAS conference in December 2002. The increasing losses for the shipping industry due to terrorism and piracy, and the acknowledgement that port facilities are vulnerable to terrorist attacks by ships. *Mr. Nieuwejaar* gave an overview of the Code. The ISPS Code is a set of new maritime regulations designed to help detect and deter threats to international security. It comes into force in July 2004 and applies to all SOLAS vessels over 500gt engaged in international voyages and all port facilities serving such ships. All ships and port facilities covered by the ISPS Code must implement the mandatory requirements by July 1, 2004. All ships then shall carry a valid international ship Security Certificate (ISSC). Requirements of the code for ships include deadline (1 July 2004): Ship Identification Number (SIN) to be permanently marked on vessel's hulls
Continuous Synopsis Record (CSR) kept onboard showing vessel history – flag state name, registration date and SIN, ship name and registration port, owners name and address, bare boat charterer name an address, operating company name and address, classification society. Further an Automated Identification System (AIS) to be installed.
A Ship Security Alert System (SSAS) shall be in place as of 1 July 2006.
Mandatory requirements (ISPS Part A) are:
Company Security Officer (CSO) to be designated by the ship operator, and a Ship Security Officer (SSO) to be designated on each ship.
Ship Security Assessment (SSA) to include on-scene security survey.
Each ship should carry a Ship Security Plan (SSP)
Continuous ship to port security communication link
Training and drills.
Ship security levels comprise: level 1 – normal;
level 2 – heightened (increased security risk), and level 3 – Exceptional (imminent security risk).
For further guidance *Mr. Nieuwejaar* recommends the webpages of the International Chamber of Shipping: http://www.marisec.org/isps/index.htm, and the Practical Pack of Lloyds Register:
http://www.lr.org/market_sector/marine/maritime-security/practical-pack.htm

**20.2. Piracy Problems/War zones update**
*Ms. Marieke Rietveld (Netherlands)* gave an update on the piracy issue and showed an overview of the attacks in various parts of the world as issued by the ICC International Maritime Bureau. As usual highest rates are in the far east in Indonesian waters. She showed some trends over the last 10

years. The number of attacks is increasing. Most are boardings or attempts to board the ship. Most susceptible ships are RORO and General Cargo ships. Knives and undetermined weapons are most commonly used. Most common crew attacks are hostage. She referred to a secure ship protection system, that advertises with a non lethal 9000V electrifying fence around the ship. Further she mentions the SHIPLOC security alert system (SSAS) that is recognised by the International Maritime Bureau.
A website on piracy can be found at:
http://www.iccwbo.org/ccs/menu_imb_piracy.asp
Relevant information on war Zones. can be found on the UNOLS site and at http://travel.state.gov/warnings_list.html

**20.3 Hazardous materials**
This issue was introduced by *Mr. Jon Reeve (AAD – Australia)*. The AAD has a procedure in place consisting of data sets and incidence evaluation. AAD is happy to share this with others.

**21. Databases**
**21.1 and 21.2. OCEANIC and the EurOcean Internet Portal**
*Mr. Douglas White (OCEANIC - USA)* gave background information on Oceanic and referred to the information that was handed out on the European EurOcean Internet Portal.
EurOcean, the European Centre for Information on Marine Science and Technology started an Internet portal in March 2003. Priority is given to marine infrastructures including: research vessels and underwater vehicles, observing and monitoring systems; land-based infrastructures; data management centres and emerging technologies. EurOcean is presently focusing its efforts on research vessels.
Co-operation has been established with OCEANIC regarding the database of research vessels.
*Mr. White* encouraged all ISOM members to look into either or both sites and to take care of updating information.

**22. INMARTECH 2004**
*Mr. Edward Cooper (NERC/SOC – UK)* presented the venue and accommodation of the fifth INMARTECH that will be organised by the British Antarctic Survey (BAS) and the Southampton Oceanography Centre (SOC) in September 2004. The venue will be at the BAS in Cambridge, and accommodation will be provided at the guesthouse of the Robinson College
(www.robinson.cam.ac.uk).
The INMARTECH programme is still under construction. All participants of earlier events will be contacted. ISOM members are encouraged to send marine technicians to the INMARTECH 2004 workshop.
For ideas and suggestions ISOM is invited to contact either David Blake of BAS (dmbl@bas.ac.uk) or Edward Cooper (ebc@soc.soton.ac.uk)

**23. Pooling of used cables/wires for re-use**
The issue was brought forward by *Mr. Per Nieuwejaar (Norway)*, who stated that most RVs have a number of winches for different purposes, using a wide variety of cable and wire types and lengths. Cables are in general very expensive and when a cable becomes too short in length, a new cable has to be installed, as extending existing cables is very difficult. If re-use on your own ships is not an option, then what to do with the remaining cable? Could other RV ship operators be interested.?
When suggesting a used cable/wire market place, *Mr. Nieuwejaar* thinks of a combined effort of ISOM, ERVO, EurOcean and OCEANIC, to post offers and requests, specifying type, length, characteristics, price, transport requirements, warranty, and else. Such a market place could even be extended to other equipment and items of interest, such as airguns, CTD-sensors, coring equipment, hydro-acoustical antennas, trawl sensors and other.
*Ms Dieter (NSF – USA)* reports that UNOLS has already two cable pools, where exchanges are made frequently. All exchanges has to be authorised by herself. Requests are sent out by e-mail.
The issue seems interesting and will come back on the agenda next ISOM.

**24. Any Other Business**
As some presentations contain a wealth of information, it is agreed that these should be posted on the ISOM website.

**25. Date and Place of Next Meeting**
All ISOM members present were in favour of continuation of ISOM.
On the issue of the venue for next year, ISOM was in the exceptional luxurious position that there were three offers. *Mr. Dimitris Georgopoulos (Greece)* brought the news that that NCMR offered to host the meeting next year, and there is the outstanding offer of India, an offer from Ireland. Within the deliberation the usual alternation of venue within Europe and outside Europe was considered. Having a European venue for next year would be favourable for those European members who cannot afford the travel expense outside Europe, and hence for financial reasons could not attend the ISOM in Chile. ISOM therefore was in favour of keeping the usual alternation, and as Ireland would prefer to host the meeting in a later year, for next year Greece's offer was gratefully accepted. The ISOM secretary announced to contact *Mr. G. Janakiraman* of NIOT, India at short notice, to ask him if the offer that NIOT will host the meeting in Chennai, India is still viable in 2005.
After some words of thanks to the Chilean hosts for the most generous hospitality, and concluding that Valparaiso has been a great setting for the ISOM meeting - the meeting was adjourned.