

European Delegation Visits St. John's to Explore Potential for

Ocean Tech Collaboration

By Andrew Safer

A delegation of eight ocean technology researchers, industry representatives, and agents/distributors from the United Kingdom, Spain, and Italy visited Halifax and St. John's from September 25th to 30th, 2011 to explore opportunities for collaboration, technology transfer, and product distribution in the European market. The Government of Canada's Department of Foreign Affairs and International Trade (DFAIT) initiated the Inbound European Ocean Observing Mission which was supported by DFAIT and the Atlantic Canada Opportunities Agency.

This visit followed the Italian Embassy in Rome's trade mission to the NEPTUNE Canada and VENUS observatories in British Columbia in January 2011, when Italian delegates involved in the sector met with SMEs and research laboratories, and in 2009, a Spanish trade and R&D mission to Halifax, St. John's, and British Columbia that focused on ocean observatories. "Last year, we added ocean technologies as a new priority sector," said John Picard, Director of Science and Technology for the Trade Commissioner Service in Rome, Italy who led the European delegation to Atlantic Canada, in discussing the

European Mission delegates and trade commissioners:

L to R (front) Keith Birch, Alessia Baldini, Noelia Ortega, Andrea Faccioli, Adolfo Uriarte, Giorgio Budillon, Isidro Garcia, Daniel Tibbetts; L to R (back) Lorenzo Motos, Stephen de Mora, Alejandro Palmeiro, John Picard.



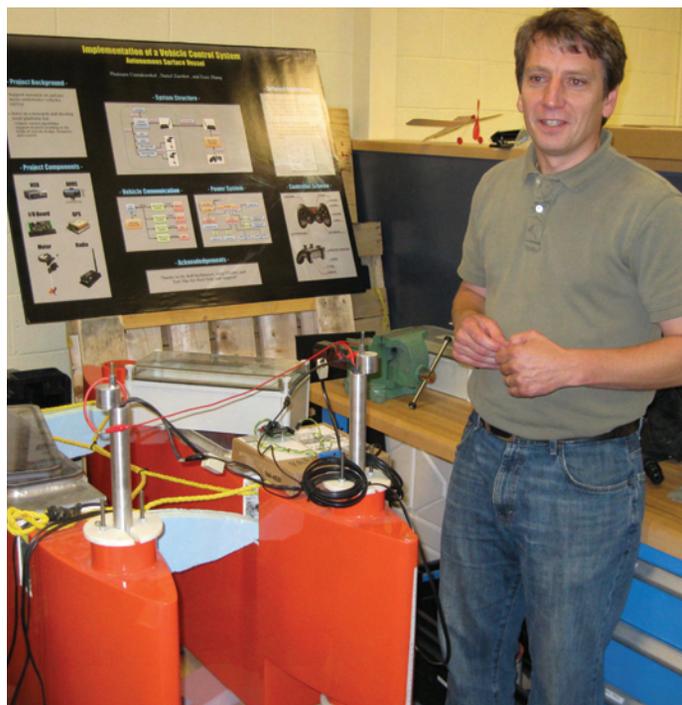
mission afterwards. "As Science Officer in Italy, I discovered there is a lot of interest in Canada as a marine technology center of excellence. There are many potential synergies."

The missions flow from DFAIT's global ocean technology strategy, developed by Jane Rutherford, DFAIT's Global Practice Lead in Ocean Technology. She works out of an office next to OceansAdvance, the organization that represents the Newfoundland and Labrador ocean technology cluster, at the NRC-Institute for Ocean Technology (NRC-IOT) in St. John's. "Judging by the feedback we received from mission participants," Jane Rutherford said afterwards. "I think they got a sense of 'The Canadian Way' of pursuing research and development and our interest in partnerships, networks and excellence. Canada has state-of-the-art marine research facilities, significant and growing public sector investment in R&D and a global reputation for ocean science and technology excellence. The recent mission to Atlantic Canada was a great opportunity to profile the region and explore new potential international partnerships. We're keen to do more!"

The delegation included:

- **Dr. Adolfo Uriarte and Dr. Lorenzo Motos (AZTI Tecnalia)**
- **Noelia Ortega (Centro Tecnológico Naval y Mar), & Alejandro Palmeiro (Nautilus Oceanica) from Spain;**
- **Keith Birch (National Oceanography Centre, Southampton), and Professor Stephen de Mora (Plymouth Marine Laboratory) from the UK; and**
- **Professor Giorgio Budillon (CoNISMa) and Alessia Baldini (DLTM) from Italy.**

Following presentations by the Newfoundland and Labrador ocean technology cluster, the delegates and cluster members discussed their areas of research interest, opportunities for ocean technology development, and potential collaboration. During the two-day visit, they walked from meetings at the NRC-IOT to the Faculty of Engineering and Applied Science at Memorial University and visited the Autonomous Ocean Systems Laboratory. They toured the facilities at the Fisheries and Marine Institute of Memorial University of Newfoundland (Marine Institute) where they were given an overview of the Centre of Applied Ocean Technology and the School of Ocean Technology. They visited the facilities at the NRC-IOT; Provincial Aerospace; and the Marine Institute's Holyrood Marine Base. DFAIT arranged one-on-one meetings between the delegates and representatives of Newfoundland and Labrador ocean technology



Dr. Ralf Bachmayer, Canada Research Chair in Ocean Technology, explains his work with gliders at Memorial University's Autonomous Ocean Systems Laboratory.

companies. Reflecting on the mission, Ms. Noelia Ortega, Managing Director of Centro Tecnológico Naval y Mar (CTN), the center for maritime technology development in the Murcia Region in southeastern Spain, noted the innovation of SMEs, and the extent of collaboration among community partners. During the two-day meeting, she said that CTN, a technology transfer entity, could serve as the intermediary in the process of collaborating to develop new products. "We would be getting knowledge from Canadian companies and we would be providing our knowledge and expertise," she said, "and a new product could be sold in the future." Whereas Spain has strong research capacity in fisheries and significant technological capacity in shipbuilding, defense and security, Ortega said there is a lack of ocean technology developers and manufacturers, which has resulted in researchers having to buy technologies from abroad. "A lot of projects for ocean observation are going to be stopped," she said, "because there is no private funding for this." She suggested that medium- and long-term partnerships with Canadian SMEs could help Spain develop capacities to be able to continue with ocean observation research.

Regarding innovation, Ortega said, "I have seen how medium-sized and small companies can create new innovative products and can benefit from this innovation. It's something that's very inspiring for me." She added that the "high technological level of capability at Memorial



Jane Rutherford, Department of Foreign Affairs and International Trade's Global Practice Lead in Ocean Technology.

University is mainly focused on industry needs. It's very important to me to see that reality." While in St. John's, she had discussions with several companies and Memorial University to identify opportunities to collaborate on knowledge transfer, and for Spanish companies to assist in commercializing new Canadian ocean technology products. "Canada has invested in technology and innovation. It's more than 30 years after they started to think about ocean technology. They have a very profitable business sector and they also have a good link between the universities, research centers and industry. Projects are easily done here. Their system for transferring knowledge is running very well."

Her colleague, Dr. Lorenzo Motos, is Director of the Marine Research Division at AZTI Tecnalia in Pasaia, northern Spain. Eighty researchers work in this Division which provides advisory services in fisheries management and environmental management of the coastal zone. Dr. Motos is also a representative of the Basque Marine Cluster. Asked about his objective in visiting St. John's, he said, "I want to learn about the capacities of Canadian marine science, new technologies and advanced techniques, and identify where we can collaborate." After visiting the Marine Institute, he said, "I was very interested in the flume tank which has very good equipment for developing seabed-friendly gear for trawlers. I could see researchers coming over here using the flume tank to do

experiments." He added the facilities are well equipped and are affordable for testing certain aspects of the geometry and behaviour of fishing gear. Dr. Motos also expressed an interest in arranging a Master's level course at the Marine Institute's School of Ocean Technology for researchers at AZTI Tecnalia's Marine Research Division. Concerned that too many young fish are being caught in the fishing attraction devices (FADs) that are being used in the international high-seas tuna fishery, Dr. Motos said that researchers are working to develop an acoustic system to differentiate the young and old tuna in the FADs, adding, "We could partner on this kind of research."

Professor Stephen de Mora, Chief Executive of Plymouth Marine Laboratory (PML) in Plymouth, UK, said he sees a lot of scope to conduct enhanced research and development activities in ocean acidification and ecosystem modeling with the Ocean Sciences Centre, a cold ocean research facility operated in conjunction with Memorial University. The impetus for his visit was to explore potential collaborations in studies of the marine ecological effects of ocean acidification and explore the opportunity to establish a centre for ocean acidification research. Referring to the Ocean Sciences Centre, Professor de Mora said, "Because their hatchery facilities are different from ours, it opens up opportunities for us to do research we can't do back home." Referring to the centrifuge at C-CORE, the facilities at the Centre for Marine Simulation, and the flume tank at the Marine Institute, he said, "There's a huge infrastructure base here that not only supports research and development but must attract outside interests. It must be a magnet for bringing people in."

Mr. Keith Birch, Business Development Manager, National Oceanography Centre, Southampton (NOCS), said, "I see opportunities for universities to work really strongly with the commercial sector." He expressed an interest in partnering on glider projects. Referencing NOCS' group of 30 researchers and PhD students who are developing micro-sensors, he said that some sensors could be put on gliders for testing and evaluation. He added that a lot of sensors have underlying generic technology, and with more people interested in different sensors, they could be brought forward into other areas. He added that NOCS has several devices involving microfluidics. "We only have enough resources to take two or three options forward," he said. "More people can take the same technology forward."

When Ms. Alessia Baldini met with St. John's ocean technology companies, she was looking for potential matches with members of DLTM, the marine technology

cluster in the Liguria region of northwestern Italy, which is home to a diversified group of SMEs, all directly and indirectly active in the marine sector. The DLTM business developer saw the potential for cooperative R&D projects and other joint initiatives with DLTM members, including research centers, and 112 SMEs associated with Tecnomar Consortium, an important member of the cluster. In addition to looking for opportunities for collaborative research and education initiatives, Baldini also suggested that an Italian company could do contract manufacturing for a Newfoundland and Labrador-based company, providing access to the European market while eliminating shipping and transportation costs. “Your company could get to know a new market,” she said, “and after a while, they could start their own business in Italy.” She added that the same arrangement could apply to Canadian companies doing contract research for Italian companies. Baldini said DLTM is interested in creating links in Newfoundland, not only for doing business but also to develop R&D and education projects—in line with the statutory aims of DLTM. Regarding collaboration in Newfoundland and Labrador, she said, “There is a really strong connection between industry, research institutes, and university.”

Mr. Andrea Faccioli, Head of Business Development at Codevintec Srl in Milan, Italy, is a supplier of technology, including sensors to be used both on land and subsea to monitor earthquakes. He was looking for marine and environmental sciences instrumentation products to add to his product line. “Ocean business is keeping the company running,” he said. “I’m here to see if there are new ideas, new opportunities I can bring to Italy.” Faccioli noted that in the last 10 years the percentage of Canadian companies he represents has increased significantly. Prior to the visit, he had received a number of client requests for AUVs, and so was pleased to learn about AUV development initiatives in St. John’s, both at the Autonomous Ocean Systems Laboratory at Memorial University and in the private sector.

The mission highlighted many areas of common interest and opened the door to potential collaborations between Newfoundland and Labrador ocean technology companies, educational and research centres, and the organizations represented by the European delegates.