

Seadarq participation in events and conferences

Introduction

Dear readers,

I would like to introduce to you the first Seadarq newsletter.

Beginning with this newsletter, we will release an issue every month. These newsletters will contain the latest news on the Seadarq System, like: what are the improvements, where the Seadarq System is in use and what are the results? You will read about this in our newsletters!

This first issue contains news concerning the events where Seadarq was present; the Seadarq system in Norway; and what can be learned about the webserver.

We hope you will enjoy this newsletter and the future ones to come.

If you like to share something with us by means of this newsletter, please contact us. Thank you.

Kind regards,

Geert Mosterdijk,
Seadarq



Seadarq has been present on several events and conferences over the last few months.

First we were present at the MEOST event in Abu Dhabi in the United Arab Emirates in January and in March at the Oceanology International in London. In May we participated in the International Oil Spill Conference in Savannah in the USA and the International Harbour Masters Associations in St. Petersburg.

Seadarq has been present at several events and conferences over the last few months. The MEOST event in Abu Dhabi in the United Arab Emirates took place in January. This event was organized along side the World Future Energy Summit. MEOST displayed new technologies, products, services and solutions from the seafloor to sea surface. The most current and up-to-date technology available to the growing ocean science and marine technology industry was featured on this event. Seadarq fits in perfectly in this area, due to the possibility of detecting disturbances of the water surface, such as small boats or oil slicks.

Following in March there was the Oceanology International in London. This conference was interesting for companies related to the theme 'Technology, Sustainability and the Ocean Environment'. The conference explored the vital role of marine science and ocean technology, in mind of

Seadarq-booth at the Oceanology International in London



the challenges posed by climate change, satisfying future energy needs and ensuring environmental and civil security. Therefore Seadarq was a suitable company for this event. The system can be of



MEOST-event in Abu Dhabi

assistance in tracking and cleaning up oil spills.

In May we joined the Oil Spill Conference in Savannah, Georgia in the USA. The main topics covered in this conference were prevention, preparedness, response and restoration. Seadarq has an impressive reputation regarding response to oil spills and therefore this conference strongly complements Seadarq and its radar system.

Our presence at this conference was therefore a great success.

Additionally in May we joined the International Harbour Masters Associations. Seadarq can be of great use in harbours all over the world and can be very helpful for wave measurements and for current measurement.



Protection of the severe Norwegian coastline

The Norwegian Sea-Hawk Navigation AS (SHN) has developed a radar sensor with unique and advanced polarisation- and processing technology. The resulting video signal transferred to the display units therefore contains a richness of detail and quality that no other known radar system within this price range can offer. Onboard the cruise liner, MS Nordlys, SHN have been tested together with a range of display systems during the winter season 2007/2008. MS Nordlys combines cruise traffic and the freight of goods along the entire Norwegian coastline from Bergen to Kirkenes, which is regarded as one of the most challenging and severe coastline on the planet. The results from these tests have been very satisfactory and are especially impressive when combining Sea-Hawk radar sensor technology and SeaDarq display system technology. In this instance Seadarq has, in a very convincing manner, demonstrated its abilities to manage and process video dynamics far beyond what traditional systems can do. Despite rough weather and very challenging winter conditions SeaDarq, in a novel combination with Sea-Hawk, have shown results that the onboard officers and navigators never even had been close to experience before. In storm and gale winds the SeaDarq display still presented a clear display picture with all relevant information details as opposed to the onboard type approved X – and S-band radars that all were useless ‘white screens’.

Webserver as UP-LINK and DOWN-LINK

In a recent statement, Mr. Donald Rumsfeld, when he was the U.S. Secretary of Defense, said: *“A revolution in military affairs is about more than building new high-tech weapons, though that is certainly part of it. It’s also about new ways of thinking... New concepts and techniques are taking form in our defense debate of today. That debate ponders issues involving the reaction of adaptive threats, the consequences of effects based operations, the modes and value of information operations, the structure and performance of command and control, and a host of other difficult to analyze subjects.”*

This reference is a pretense for introducing the basic concepts on which the SeaDarQ web server is based. Since the early 1990s, distributed sensor networks (DNSs) have been an area of active research. The trend is to move from a centralized, super-reliable single node platform to a dense and distributed component that as a group is capable of far more complex tasks and inferences than any individual super-node. In these few sentences above two words have been introduced: “node” and “far”. Before continuing, I would like to analyze more in detail these two concepts which are important in understanding the general concept and the basis of the web-server itself. As mentioned above, the web server is born inside an idea of distributed network sensors as a set of cooperative “nodes” spatially distributed. Analyses inside each single node unables us to decouple the components of each node by each spatial constrain. It is very common to imagine a node as a specific geographic point collecting everything. In order to demonstrate this common conviction, the case of a satellite node should be considered as an example.

Normally a satellite node is composed by two distinct segments:

- Satellite segment
- Ground segment

In this scenario the satellite in

orbit is the *platform* where the *sensors* are installed, while the ground segment is devoted to send commands to the satellite and its sensors and to collect and process the data provided by the sensors. Usually the communication between the ground station and the satellite is referred as up-link, while the communication between the satellite and the ground station is referred as down-link.

With this example we have not only introduced two basic concepts like platform and sensors but it has also been stated that the platform containing the sensors can distant from the place where the data is processed and can use a wireless connection like in the case of the satellite, but still globally they are going to constitute a node. The platforms can be in the sky, like satellite or aircraft or UAV (unmanned aerial vehicle), on the ground or on the sea and so regardless of their physical position are, they will provide the support for the sensors. We now have all the elements: sensors, platforms, processing unit, communication system (wired or wireless) collected in a node and nodes that are potentially collaborative in a DNS.

The SeaDarQ web server, as the word web server implies, exploits internet as communication system, like an up-link, to provide a means to send commands or request to the platform (regardless where it is, near or far), the SeaDarQ webserver also operates like a down-link which is able to collect data provided by the sensors (measurements), in a manner analogues to a satellite node and to decouple spatially, the platform by the processing unit. The web server provides a mean to collect data from different sites for comparison; like a DNS provides the possibility to process data acquired by different sensors, to integrate it and produce abstract interpretation of it.