NewsLetter

KONGSBERG SPACETEC
MANUFACTURER AND GLOBAL EXPORTER OF SURVEILLANCE TECHNOLOGY

MEOS
Multi Mission Earth Observation System

METEOROLOGY   CLIMATE AND ENVIRONMENT MONITORING   SURVEILLANCE

WORLD CLASS - through people, technology and dedication   www.spacetec.no

Events 2012

22 - 26 January 2012
AMS 2012 New Orleans
http://www.ametsoc.org/
meet/annual/index.html

21 - 27 March 2012
ITSC 18 - Toulouse France
http://cimss.ssec.wisc.edu/
itwg/itsc/

25 - 27 April 2012
VI International Conference
«Remote Sensing – the
Synergy of High Technologies»
in Moscow, Russia
http://sovzondconference.ru

11 - 15 June 2012
SpaceOps 2012, Stockholm,
Sweden
http://www.spaceops.org

3 - 7 September 2012
EUMETSAT Meteorological
Satellite Conference
http://www.eumetsat.int/
Home/Main/News/Confer-
ences_and_Events

For meeting and appointments
during the events, e-mail us on
marketing@spacetec.no

SENTINELS DFEP
Kongsberg Spacetec – developing the Sentinels DFEP

The Consortium of Kongsberg Spacetec and Advanced Computer System, is developing the Demodulator and Front-End Processing System (DFEP) for the Sentinels ground segments. Kongsberg Spacetec is the primecontractor.

Three DFEP systems will be delivered to the European Space Agency within 2nd quarter 2012. A total of 20 DFEP systems shall be delivered to the Core Ground Station sites within 2013.
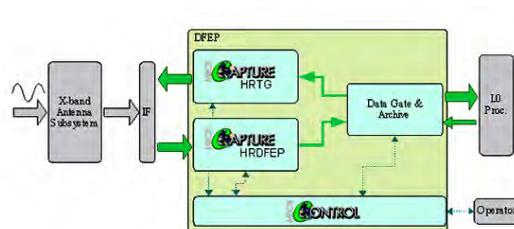
We deliver a well defined and reliable DFEP system with zero data loss. The DFEP handles all Sentinel satellites in a seamless manner, by using already existing field proven products.

The DFEP system is designed for the Sentinels life-cycle (20 years), and the system is equipped with two modulators in one box to handle the strong performance requirements. A modular design however, allows the system to be delivered in different configurations, even as a demodulator for existing ground stations that needs to be upgraded with Sentinels reception capabilities.

European Space Agency was very satisfied with the acceptance testing in December 2011. The first DFEP system is shipped to ESRIN for extensive testing in an operational environment.

Kongsberg Spacetec Sentinel DFEP Overview

Sentinels
The DFEP is a part of the processing Ground Segment for Sentinel-1, Sentinel-2 and Sentinel-3 missions. The satellites and associated ground segments are developed by the European Space Agency.

The following summarizes the missions:
• Sentinel-1: SAR imaging. All weather, day/night applications interferometry.
• Sentinel-2: Multi-spectral imaging. Land applications.
• Sentinel-3: Ocean and global land monitoring.

For more information, please visit
http://www.esa.int/web/gsc/mission-groups/future

DFEP Overview
DFEP shall receive telemetry data from the X-band antenna systems and decode these data into low level formats, archive and distribute the data to the Payload Data Ground Segment (PDGS).

The DFEP is based on field proven products, MEOS™ Capture HRTG/HRDFEP and MEOS™ Control manufactured by Kongsberg Spacetec and the DG&A manufactured by Advanced Computer Systems.

For more technical information, please visit
http://www.spacetec.no

Kongsberg Spacetec - BarentsWatch project team

BarentsWatch – The Norwegian Government's High North strategy

The Norwegian Government's High North strategy states that the government will take the initiative to establish a comprehensive monitoring and warning system for the North.

The main purpose of the government's initiative is to secure a civilian monitoring of Norwegian waters and as part of an operational activity, contribute to responsible management of environment and resources, and to support the Norwegian foreign policy.

Fishing in the Barents Sea is an important industry for both Norway and Russia. Iceland and the EU also fish for cod, haddock and char in the nutritious waters between Northern Norway and Spitsbergen. With such a level of activity, it can be valuable to collect information on how human activity impacts on life under the water's surface.

BarentsWatch will collect and integrate data from a number of sources – both historical and real time.

"With this data, we may discover unknown connections and will be able to evaluate different ways in which we can cooperate," explains Gro Kibsgaard- Petersen, in charge of communications for BarentsWatch.

High-prestige project

The goal for the project is to provide a comprehensive monitoring and information system for users working with or interested in climate and the environment, shipping traffic, marine resources, oil and gas activities or maritime law. "Our most substantial challenge is to create an open and flexible system which allows for expansion, and to get the different data to interact," explains system architect Dr. Frank Øynes from Kongsberg Spacetec.

The project is scheduled for launch in May 2012. Knowledge of life and processes under the water's surface is absolutely essential if you want to succeed with a business in the high north. Events such as unexpected growth of algae, shipwrecks and oil spills are clear indications of the need for improved measurement and warning systems.

The information exists today, but is difficult to access and integrate in one system.

These are the problems to be solved by BarentsWatch.

Patience

BarentsWatch also represents a milestone for KONGSBERG. Kongsberg Spacetec is the prime contractor and supplies the portal's catalogue of services and map section.

The system will allow users to collate the data in a map in order to provide a better overview. The user will also be able to save, open, share and comment on the maps. This type of information system has been subject to discussions for close to a decade. Vice President of Research&Development Viggo Jensen and system architect Dr. Frank Øynes at Kongsberg Spacetec are among those who have been part of the process since the very start.

A closed portal has also been planned for the Norwegian authorities, but this has yet to be adopted. The concept is for the closed portal to provide for improved coordination of national operative services.

Business development

Initially, BarentsWatch will start up as a national project. However, both Viggo Jensen from Kongsberg Spacetec and Project Manager Frode Kjersem from the Norwegian Coastal Administration confirm that the end goal is to develop a system on an international scale.

"We work hard to ensure compliance with international standards so that the system will be able to integrate information from a higher number of suppliers," continues Mr. Kjersem.

A world of opportunity

Viggo Jensen and the rest of the KONGSBERG team hope that their future work on development of the system will bear fruit for the entire Kongsberg Group.

The innovative developers in Tromsø have also identified potential for use of the system on land and in the air. "The Armed Forces could make good use of this type of system which collates different sources of information," claims Viggo Jensen.

Experts believe that the new experience gained and technology developed will provide a substantial competitive edge for KONGSBERG. "It could be used as a shared platform for a number of projects. There's no doubt now that KONGSBERG can supply integrated systems," confirms Frank Øynes. "

The service oriented architecture can be used as a common integration platform for a diversity of applications. " We are currently investigating use of this system in several countries for different needs and applications" says Harald Lauknes, Vice President Sales and Marketing.

- A comprehensive information and monitoring system for the northern coastal and sea regions.

- Collects data from 27 governmental units and research institutions.

- Generates real time and historical data for the following fields:
  - climate/environment
  - marine resources
  - maritime activities
  - oil/gas activities
  - maritime law / regulations

- Will provide an overview and a more comprehensive basic data for management of the area.

- Priority target groups:
  - Public institutions in charge of the different fields involved
  - Commercial users

- The very first services are due for launch in May 2012.

MEOS ™ POLAR release plan – Spring 2012

The current release plan for our MEOS™ Polar system is rapidly evolving to incorporate changes in the business but also user feedback and general improvements.

MEOS™ Polar V3.4

[tentative release date: February 2012]

- Support for new METOP-B Multi Mission Admin message
- HP hardware monitoring supported in GUI
- NPP mission support
- Support for selected Qurum receivers
- General improvements

MEOS™ Polar V3.5

[tentative release date: March 2012]

- Support for FY3 level0 segmentation
- Support for NPP segmentation
- Integrate KSPT MEOS™ Antenna subsystem in MEOS™ Polar
- SeaDas v6.3 integration
- Improved web reporting (PDF-eksport and sorting)
- Bug fixes and general improvements

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KONGSBERG

Near-real-time service chain for SAR applications

Kongsberg Spacetec has a long experience in Synthetic Aperture Radar (SAR) data processing and information extraction from SAR data.

We now kickstart a new era of SAR processing. With support from the Norwegian Space Center we are developing a service chain capable of producing value added information from SAR raw data in near real time - regardless of which mission the SAR data originates from.

How?
New and innovative focusing algorithms in combination with a sofisticated pipeline processing scheme.

More on this in the next issue of our newsletter.

ENVISAT ASAR 03.03.2011 fra Gwa-dar, Pakistan
© European Space Agency

NASA recognition to Kongsberg Spacetec team

In August 2011 a team from Kongsberg Spacetec was awarded NASA's Group Achievement Award for its contribution to the Advanced Land Observing Satellite Tracking and Data Relay Satellite project (ALOS TDRS) .

The ALOS TDRS project was a joint Japanese - American partnership that combined the JAXA and NASA space agencies' resources to produce more and better Earth observation data for America. JAXA's ALOS spacecraft produced valuable science data from America for monitoring e.g. earthquake hazards, forest declines, and changes in water resources. NASA's relay satellite system TDRS was used to downlink the data to the White Sands Complex ground station in New Mexico, USA.

Kongsberg Spacetec contributed to the system design, implementation and testing. NASA selected Kongsberg Spacetec's MEOS™ Capture HRDFEP to receive, demodulate and process ALOS data to Level 0. The MEOS™ Capture HRDFEPs also featured real-time image processing and display during data acquisition.

ALOS Level 0 data was forwarded from WSC to Japan and to NASA's Alaska Satellite Facility for further processing and distribution. The entire system was declared fully operational on April 12, 2010.

The successful ALOS TDRS project was the first international partnership of this kind for NASA and JAXA.

More information at:
http://www.nasa.gov/home/hqnews/2010/apr/HQ_10-079_NASA-JAXA.html

Photo courtesy: KSPT Arne Nylund

Chris Wilkinson - NASA, KSPT Project Manager Hårek Gamst, KSPT team members Anders Mikkelsen and Ove Kåven