Sentinel-1 services: Tracking Sea-ice

Soon the European Space agency ESA will launch the sentinel-1B satellite. The twin brother of Sentinel-1A and the fourth satellite of the Copernicus sentinel series. Being the first family of sentinel satellites that is to be completed the Sentinel-1 satellite family is the perfect opportunity for ESA and the European Union to showcase the importance of the sentinel satellites and the space component of the Copernicus program. The sentinel-1 satellites will offer numerous services like the ones related to the monitoring of Arctic sea-ice and iceberg mapping. It will also cover applications such as oil-spill monitoring and ship detection for maritime security, monitoring land-subsidence and mapping of forests, water and soils. It can also be used humanitarian aid support and the management of crisis situations

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| Image | Text |
| 10:00:00:00  INT – Sentinel-1B Preparation – Arianespace, Kourou, French-Guiana – 08/03/2016 – CNES  ANIMATION of Copernicus emergency services, Flood mapping –-ESA  EXT – DMI building – Copenhagen, 30/03/16 – ESA  INT – DMI building, Lobby – Copenhagen, Denmark, 30/03/16 - ESA | Soon Sentinel 1 B will be put into orbit working as a constellation with Sentinel 1 A. Both satellites will gather operational data for Copernicus, the European Union's global monitoring for environment and security programme.  This programme aims to offer users from around the globe satellite and in situ data, along with dedicated services. Already we can see that this data is changing the work of many institutions. Here at the Danish Meteorological institute, the DMI, in Copenhagen, Copernicus data has definitively an impact on the activities. |
| 10:00:48  ITW – DMI Building, Offices - Copenhagen, Denmark, 30/03/16 - ESA | **ITW Leif Pedersen – Senior Researcher, Centre for Ocean and Ice - DMI**  **Copernicus is changing our work sort of in two ways, both that it has provided us with a platform to combine all the data that we are collecting but also in the sense that we can now provide a better service to our users because we now have funding to produce these forecasts that our users are asking for, the forecasts for Danish waters, the ocean currents, for the salinity and temperature.** |
| 10:01:17  INT – DMI building, OFFICES – Copenhagen, Denmark, 30/03/16 – ESA  STILLS – ICE CHARTS of Greenland – March 2016 – DMI  EXT – Tugboat with sea-ice stock shot - Videoblocks  EXT – Images of Greenland Sea-ice from helicopter – Greenland, March 2016 – DMI | One of these products that the DMI produces are ice charts for the Nordic waters. This process of receiving environmental data and making ice charts is key for living in the artic regions. With lives of people working and travelling at sea at stake, it is necessary for the DMI to track the position and thickness of sea ice on and around the shipping routes…… >  The creation of these ice charts greatly benefits from the new Sentinel 1 data. |
| 10:01:45  ITW – DMI Building, Offices - Copenhagen, Denmark, 30/03/16 - ESA | **ITW Jens Jacobsen – Ice Advisor, Centre for Ocean and Ice - DMI**  **Well we get especially sentinel-1 data from ESA and we use that to make ice-charts of Greenland. Especially in the wintertime it is very dark in Greenland and the good thing about sentinel-1 is that it is radar imagery, so it doesn’t matter whether it is dark or daylight. Also in periods with bad weather when we have a lot of clouds in Greenland you can still see through the clouds, so we can see where we have ice and where we have open water. And then we make these ice-charts that we send to the vessels sailing around Greenland and also between Denmark and Greenland.** |
| 10:02:18  EXT – Images of Greenland Sea-ice from helicopter – Greenland, March 2016 – DMI  Still Sentinel-1A radar images – March 2016 –ESA  ANIMATION – Sentinel-1 satellites in orbit, Scanning. 360° view of the satellite, SAR instrument and scanning through clouds – Unknown Date –ESA  INT – DMI building, OFFICES – Copenhagen, Denmark, 30/03/16 – ESA | Where in earlier years the DMI had to rely on planes, helicopters and the occasional satellite to gather less than optimal data, the use of the Sentinel 1 data has been a game changer. These high-resolution radar images are not only useful in all weather conditions but also their frequency and coverage is an important factor. Today the gathering of data by Sentinel 1A already happens at a very high frequency but this will double with the launch of Sentinel 1B. The timely images of the Sentinel 1 satellites allow the DMI to keep ice charts much more up-to-date. In a sea filled with ice, it is important for the people aboard ships to know what they are about to encounter. |
| 10:02:55  ITW – DMI Building, Offices - Copenhagen, Denmark, 30/03/16 - ESA | **ITW Jens Jacobsen – Ice Advisor Centre for Ocean and Ice - DMI**  **I think having access to sentinel-1 images means that we have a much more flexible approach to our work. We can make our ice-charts when they are really needed, when we know vessels are entering Greenland waters, so when they reach certain areas we can makes ice-charts because now we have images almost every day of the Greenland waters.** |
| 10:03:13  -Animations Copernicus – mapping Sea Ice, shipping routes – ESA  -Animation Sentinel-1 total in space, Forest mapping, sentinel-1 detecting changes in volcanic activity, flyby – ESA | This process of ice-mapping is an excellent example of the difference the Sentinel 1 satellites can make. But they provide many other services as well, such as forest mapping, detection of oil spills, volcanic activity measurements and disaster monitoring. The Sentinel 1 satellites and their services are a perfect illustration of the goals of the Copernicus programme. An operational monitoring tool for our environment with services for thousands of users worldwide, all working together to protect our planet and its people. |
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| 10:03:48 | B-Roll |
| ITW – DMI Building, Offices - Copenhagen, Denmark, 30/03/16 - ESA | **ITW Jens Jacobsen – Ice Advisor Centre for Ocean and Ice – DMI – ENG 5** |
| 10:05:30  ITW – DMI Building, Offices - Copenhagen, Denmark, 30/03/16 - ESA | **ITW Jens Jacobsen – Ice Advisor Centre for Ocean and Ice – DMI – DANISH 2** |
| 10:07:00  ITW – DMI Building, Offices - Copenhagen, Denmark, 30/03/16 - ESA | **ITW Leif Pedersen – Senior Researcher, Centre for Ocean and Ice – DMI – ENG 2** |
| 10:08:13  ITW – DMI Building, Offices - Copenhagen, Denmark, 30/03/16 - ESA | **ITW Leif Pedersen – Senior Researcher, Centre for Ocean and Ice – DMI – DANISH 3** |
| 10:10:03  EXT and INT – DMI Building lobby, Offices - Copenhagen, Denmark, 30/03/16 - ESA | **Establishing shots DMI – Danish meteorological institute Copenhagen – 30/03/2016 - Denmark** |
| 10:12:31 | **Aerial shots of ice-sea from helicopter – Greenland – March 2016 - DMI** |
| 10:14:59 | **END** |
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