Sentinel 3 : Technology & Heritage

Accurate sea levels and temperatures from space.

ESA’s new earth observation satellite SENTINEL-3A will soon be launched into orbit. Once more the European Space Agency ESA proves it is on the forefront of monitoring our environment and the climate. Using state of the art and proven technology the Sentinel-3 satellite is a fabulous piece of engineering set to play a key role in the European Commission’s Copernicus programme. However this technological piece of craftsmanship is only possible as the result of earlier scientific missions such as ERS, Envisat and Cryosat, with Sentinel-3 building on their heritage.

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| Image | Text |
| 10:00:10* INT. Sentinel-3A in cleanroom – Thales-Alenia Space -> Cannes, France – 29/09/2015 –TAS
* STILL – Ocean Topography map – Unknonwn date – ESA
* Animation – ocean temperature globe – unknown date –ESA
* STILL – Ocean color – Unknonwn date – ESA
* Animation – Sentinel-1 scanning with Copernicus goals – Unknown date –ESA
* INT. Sentinel-3A in cleanroom – Thales-Alenia Space -> Cannes, France – 29/09/2015 –TAS
 | Esa’s new Sentinel-3 satellite will soon be put into orbit and it can start collecting earth observation data. Measuring ocean-surface topography, sea- and land-surface temperature and ocean- and land-surface colour it will greatly contribute to the European Commissions Copernicus programme for earth observation. Despite being the third satellite in the sentinel family, Sentinel-3 is a rather special satellite with different applications and a different multi-instrument payload when compared to it’s brothers and sisters.  |
| 10:00:40* ITW Susanne Mecklenburg – Sentinel-3A cleanroom, Thales-Alenia Space -> Cannes, France – 14/10/2015 –ESA
 | **ITW Susanne Mecklenburg: Sentinel-3 Mission Manager***Sentinel-3 is special in many respects. We have a very special payload. We have three different instruments quite in contrast for instance to sentinel 1 and sentinel 2. And as a consequence of that we have a large variety of different data available that will cover a large variety of applications. Which is for operational applications so for instance for the Copernicus core services but also for scientific applications. So we cover quite a large range.* |
| 10:01:07* ANIMATION – Sentinel-3A Tech C no earth - 2015 – ESA
* ANIMATION – Envisat, 2 shots – unknown date – ESA
* ANIMATION – Sentinel-3A Tech A, stripping, zooming in, text – 2015 –ESA
* ANIMATION – Envisat – unknown date – ESA
* STILL – Ocean temperature map – Unknonwn date – ESA
* INT. Sentinel-3A cleanroom, Thales-Alenia Space -> Cannes, France – 14/10/2015 -ESA
* ANIMATION – Sentinel-3A Flyby fires/ Tech A Tech A, stripping, zooming in, text/ - 2015 – ESA
* STILL - ocean topography maps –unknown date – unknown origin
* ANIMATION – Cryosat – Unknown date –ESA
* ANIMATION – Sentinel-3 half tech view – 2015 - ESA
 |  Sentinel-3A is a stunning piece of technology, combining new technologies with so-called proven technologies which have been tested on pioneering ESA earth observation missions such as ERS-2 and Envisat.One of the main instruments on board of the Sentinel-3 is the Sea and Land Surface Temperature Radiometer or SLSTR. It has been based on the Envisat satellite's Radiometer and it is used to measure sea and land temperatures  up to an accuracy higher than 0.3 Kelvin. The radiometer, with its characteristic banana-shaped baffles, measures in 9 spectral channels and has two bands which are optimised for monitoring fire, such as bush or forest fires. Another instrument with a heritage is the Synthetic Aperture Radar Altimeter and it is used for measuring topography over sea ice, ice sheets, rivers, lakes and also sea-levels It is an improvement on the Cryosats altimeter. However what makes the Sentinal-3 so advanced is its multi-instrument payload.  |
| 10:02:13* ITW Constantin Mavrocordatos – Sentinel-3A cleanroom, Thales-Alenia Space -> Cannes, France – 14/10/2015 –ESA
 | **ITW Constantin Mavrocordatos: Sentinel-3 payload manager, ESA***By combining also of the measurements of the other instruments like OLCI, which is on top of the satellite and analyses the color of the surface of the earth, it is possible for example to determine the composition of the oceans and the flow on the ocean, like the presence of algae, chlorophyll, pollution. And how all of this moves around the world.* |
| 10:02:41* ANIMATION – Sentinel-3, Animation/ half tech view/ Flyby algea bloom – 2015 – ESA
* INT. CAISSON VIDE Thermique – Sentinel-3A, Thales-Alenia Space -> Cannes, France – September 2015 –TAS
 | The Sentinel-3 mission consists of two paired satellites, Sentinel-3A and Sentinel-3B with Sentinel 3A being launched first only to be complemented later by Sentinel-3B. And although they can operate over land their primary focus will be on the oceans. There have been other ocean observation satellites but the technology and the project of Sentinel-3 has some important advantages. First the sentinels have a faster revisit-time, so they can cover the oceans in only 2 days, a great improvement compared to Envisat for instance. Such frequent updates are crucial for numerical models. |
| 10:03:16* ITW Bruno Berruti – Sentinel-3A cleanroom, Thales-Alenia Space -> Cannes, France – 14/10/2015 –ESA
 | **ITW Bruno Berruti: Sentinel-3 Project Manager, ESA***We will also be better because the previous satellites were providing a resolution at 1km and sentinel-3, depending on the wavelength of the frequency, will be able to go down to 500 or even 300 metre-resolution. Which for a global mission is extremely important.*  |
|  10:03:36* INT. Sentinel-3A in cleanroom – Thales-Alenia Space -> Cannes, France – 29/09/2015 –TAS
* INT. Sentinel-3A cleanroom, Thales-Alenia Space -> Cannes, France – 14/10/2015 -ESA
* ANIMATION – Sentinel-3 Solar array deployment - 2015 - ESA
 | With al these improvements the user community anxiously awaits the first data from the Sentinel-3 satellites with high expectations. Once more ESA works on the cutting edge of satellite technology and after years of research and development it proudly presents the Sentinel-3 satellite. Sending it into space to keep mankind safe on the ground. |
| **B-ROLL** |  |
| 10:03:59 | **ITW Bruno Berruti – Sentinel 3 Project Manager, ESA – English and Italian**Sentinel-3A cleanroom, Thales-Alenia Space -> Cannes, France – 14/10/2015 –ESA |
| 10:10:44 | **ITW Craig DONLON - Sentinel 3 Mission Scientist, ESA – ENGLISH**Sentinel-3A cleanroom, Thales-Alenia Space -> Cannes, France – 14/10/2015 –ESA |
| 10:15:59 | **ITW Susanne Mecklenburg - Sentinel 3 Mission Manager, ESA – ENGLISH and GERMAN**Sentinel-3A cleanroom, Thales-Alenia Space -> Cannes, France – 14/10/2015 –ESA |
| 10:20:47 | **ITW Volker Liebig –Director Earth observation programmes, ESA – ENGLISH, FRENCH and GERMAN**Sentinel-3A cleanroom, Thales-Alenia Space -> Cannes, France – 14/10/2015 –ESA |
| 10:25:05 | **ITW Constantin Mavrocordatos: Sentinel-3 payload manager, ESA – ENGLISH and GREEK**Sentinel-3A cleanroom, Thales-Alenia Space -> Cannes, France – 14/10/2015 –ESA |
| 10:29:57 | **ITW Kaiser Clemens, Director of development, EUMETSAT – ENGLISH and GERMAN**Sentinel-3A cleanroom, Thales-Alenia Space -> Cannes, France – 14/10/2015 –ESA |
| 10:32:59 | **MAURO FACCHINI, Head of UNIT Copernicus, EC – ENGLISH and FRENCH**Unknown location -> Brussels, Belgium – Oktober 2015 –EC |
| 10:37:33 | **END** |