Copernicus Atmosphere

Soon Sentinel-5P will be in orbit joining the other Sentinel satellites of the Copernicus programme. Copernicus is the world’s largest environmental monitoring programme which is operated by ESA and the European Commission. With sentinel-5P Copernicus has its first satellite dedicated to the monitoring of atmospheric chemistry. These measurements are important to observe air pollution and climate change.

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| Image | Text |
| 10:00:10:00   * ANIMATION – Sentinel-5P on orbit – Q3 2017 – ESA * ANIMATION – globe with ESA, Copernicus and EC logo – 08/2017 –ESA * ANIMATION – Sentinel-1 on orbit – unknown date– ESA * ANIMATION – Sentinel-2 on orbit – unknown date– ESA * ANIMATION – Sentinel-1 on orbit – unknown date– ESA * INT. Cleanroom general view Sentinel-5P – Stevenage, UK – 20/07/2017 – ESA * INT. Cleanroom TROPOMI – Stevenage, UK – Q2 2017 – AIRBUS * ANIMATION – Sentinel-5P on orbit – Q3 2017 – ESA | Like all other Sentinel satellites, Sentinel-5P is part of the Copernicus. This programme is a collaboration between the European space agency ESA and the European commission. It is the most ambitious earth observation programme worldwide.  Sentinel-5P is the first atmospheric chemistry mission within Copernicus. Its main instrument is a state of the art spectrometer called Tropomi which will be used to detect trace gasses in our atmosphere. With Sentinel-5P and TROPOMI Copernicus will dramatically improve operational atmospheric services. |
| 10:00:39:04   * INT. Cleanroom Sentinel-5P – Stevenage, UK – 20/07/2017 – ESA | **ITW Claus Zehner, Sentinel-5P mission Manager, ESA**  *There are two major operational services that are operated by the European commission. One is called Cams - Copernicus atmospheric monitoring service. They’re using data assimilation to and they will include sentinel-5P data and they will provide the possibility to do forecasting on special events, for example air quality.*  *Another important service that is operated by the European commission or financed by the european commission is the copernicus climate change monitoting C3S and here sentinel-5P data can contribute to the establishment of longterm datasets. Making the link to previous missions such as GOME, Sciamachi and Omi in order to provide data that can be used to learn about climate change.* |
| 10:02:24:15   * INT. ERS CLEANROOM splitscreen – unknown date – ESA * INT. ENVISAT CLEANROOM – unknown date – ESA * EXT. Cars driving on the road – 2017- Euronews * EXT. Images of industry and smoke – 2017- Euronews * ANIMATION – Sentinel-5P fly-by, Scanning for trace gasses– Q3 2017 – ESA * ANIMATION, global ozone concentration – umknown date – EUMETSAT * STOCK FOOTAGE,People Enjoying beach and sun, Cancer treatment – VIDEOBLOCKS * ANIMATION – Sentinel-5P 360° view – Q3 2017 – ESA | After ERS and Envisat stopped working there was a need to fill the gap on observing air quality and air pollution.  Furthermore according to the world health organization air pollution is responsible for over 3,7 million premature deaths worldwide every year. But the health costs are even greater as many people suffer from non-lethal afflictions caused by or aggravated by breathing polluted air. Another major health concern on which sentinel-5P is gathering data is the ozone in our atmosphere. When the ozone in our atmosphere depletes ultraviolet light from the sun is no longer filtered. Increased exposure to UV-light can cause Skin cancer, immune system damage and other ailments for humans. Hence the importance of Sentinel-5P data.. |
| 10:02:26:08  -INT. Airbus facility near Sentinel-5P – Stevenage, UK – 20/07/2017 – ESA | **ITW Pepijn Veefkind Senior Scientist, KNMI**  *the Tropomi data will be used operationaly, so it will be used to improve air quality forecasts and air quality forecasts are of course important for people who are vulnerable for pollution but also for the general public in case of big smog events. What we can do with the Tropomi data, we can look at the emissions of pollutants and when you see them changing over time that is very important because we can see if certain policy measures have the right impact or where we still see increases and still have to do more to reduce the polluting emissions.* |
| 10:03:12:19   * ANIMATED STILL, Copernicus timeline – 08/2017 –ESA * STILLs Sentinel-4 – unknown date ESA * STILL Sentinel-5 – unknown date - ESA * ANIMATION Sentinel-5 – unknown date – EUMETSAT * INT. controlroom people processing data, unknown location – unknown date – EUMETSAT * ANIMATION Copernicus themes – 08/2017 - ESA | In the early 2020’s the space component of the Copernicus atmospheric services will be extended with the addition of sentinel-4 and 5 missions. Sentinel-4 will be a geostationary mission where as Sentinel-5 will be a low polar orbiting mission like Sentinel-5P.  Atmospheric services are part of the Copernicus portfolio. which comprises six main themes: Marine, Land, emergency, security, climate and atmosphere, giving a complete view on our planet’s health and its evolutions. |
| 10:03:48:17   * INT. Airbus facility near Sentinel-5P – Stevenage, UK – 20/07/2017 – ESA | **ITW Josef Aschbacher, Director of *Earth* observation programmes, ESA**  *The copernicus programme is providing free data to anyone anywhere in the world. So many users not only in Europe but also in America, in Asia are using our data on a very large scale and very significantly.*  *And so therefore Copernicus is really monitoring the health of our planet from all dimensions The atmosphere, the oceans, the land surface, the icecaps and the whole systems of the earth composed of these components is constantly monitored with Copernicus and therefore it is really important to see what is the state of our planet and how it will evolve in the future.* |
| 10:04:31:13   * ANIMATION globe with all Copernicus satellites – 2016 – ESA * INT. office University of Bremen– Bremen, Germany - March 2017 - Euronews * INT. Paris Climate summit 2015 – Paris, France – 2015 – unknown source * EXT. People walking in NYC – unknown date – Videoblocks * ANIMATION – Sentinel-5P fly-by– Q3 2017 – ESA | With Copernicus ESA and the European Commission provides scientists, policymakers and ordinary people worldwide with a priceless insight into their own environment and how they might make our planet better for all. |
|  | **B-Roll** |
| 10:04:44   * INT. Airbus facility near Sentinel-5P – Stevenage, UK – 20/07/2017 – ESA | **ITW Josef Aschbacher, Director of *Earth* observation programmes, ESA -ENGLISH**  - These atmospheric measurements are extremely important for mankind. first of all to see how our planet changes in terms of climate but also to see how air quality changes and over time. We have highly polluted areas which are of course transporting pollution from one place to the other so these fluxes of pollution or gasses is very important to monitor. But also if you take europe for example. Europe has introduced very strong legislation and regulations in order to reduce greenhouse gas emissions and this also has to be verified measure, a very good way of making sure these reductions are taking place at a large scale.  - sentinel-5Esa’s role in copernicus is that ESA is the coordinator of the copernicus space component.  Copernicus has two mean components, a space component and a services component. Politically copernicus is run by the european commission overall but ESA’s role is really yo coordinate the space component. There is a lot of activities within the spacecomponent. The main ones are to build the satellites, to buy recurring satellites, to operate missions, some of them by ESA some by EUMETSAT. And to buy data from other sources to complement sentinel missions. All of this is coordinated by ESA in terms of activity but also in terms of other partners. |
| 10:06:25   * INT. Airbus facility near Sentinel-5P – Stevenage, UK – 20/07/2017 – ESA | **ITW Josef Aschbacher, Director of *Earth* observation programmes, ESA –GERMAN**   * Esa’s role within Copernicus * Why is Copernicus data so Important? |
| 10:08:08   * INT. Cleanroom Sentinel-5P – Stevenage, UK – 20/07/2017 – ESA | **ITW Claus Zehner, Sentinel-5P mission Manager, ESA -ENGLISH**   * There are two major operational services that are operated by the European commission. One is called Cams - Copernicus atmospheric monitoring service. They’re using data assimilation to and they will include sentinel-5P data and they will provide the possibility to do forecasting on special events, for example air quality. Another important service that is operated by the European commission or financed by the european commission is the copernicus climate change monitoting C3S and here sentinel-5P data can contribute to the establishment of longterm datasets. making the link to previous missions such as GOME, Sciamachi and Omi in order to provide data that can be used to learn about climate change. * Atmospheric measurements are important becauseespecially these measurements that are done by sentinel-5 precursor like tropospheric ozone, information about nitrogen dioxide, sulfur dioxide, also information about aerosols particular methanethey have impact on the health of people. they can impact thepeople who have problems with their heart, their lungs and as it has been show there are more than 400000 premature deaths in the European commission based on exposure to air pollution. |
| 10:09:48   * INT. Airbus facility near Sentinel-5P – Stevenage, UK – 20/07/2017 – ESA | **ITW Pepijn Veefkind Senior Scientist, KNMI – ENGLISH**   * continuous monitoring is very important euh especially when you are looking at slow changes and and overlap between the data is then really necessary to glue these different datasets together to one datarecord. And we have datarecords from these kinds of instruments starting in the 90’s for example for the pollution. It’s really important to maintain these valuable datarecords and to extend them into the future. * well the data can be used for different applications, for example in the air quality forecasts, it is also used by KNMI for example for the UV forecasts. and we also use it to warn the aviation for volcanic ash plumes. On top of that the data will also be used by scientists around the world to study the atmosphere and to study how man is changing the atmosphere over time. |
| 10:11:09   * INT. Airbus facility near Sentinel-5P – Stevenage, UK – 20/07/2017 – ESA | **ITW Pepijn Veefkind Senior Scientist, KNMI – Dutch**   * How can Tropomi data be used operationally * How can this type of data impact our daily lives * What is the importance of continuous datasets |
| 10:12:55   * ANIMATION – Sentinel-5P– Q3 2017 – ESA | **SENTINEL-5P Animations** |
| 10:15:20 | END |