**ESA Galileo launch Completing the constellation**

**On the 25th of July 2018 four more Galileo satellites will be launched on top of an Ariane 5 and be put on orbit. With this launch the Galileo constellation will be almost completed. After only 10 years, ESA and the European commission’s ambitious goal of deploying a satellite navigation constellation will be achieved!**

**Now that the constellation is up and running test have shown that the Galileo signal is better than expected. Today Galileo is also useable in all new smart phones.**

**This video presents this latest Galileo mission. It includes an interview with Paul Verhoef, director of navigation programmes at ESA and Valter Alpe, Galileo FOC satellite AIV manager.**

|  |  |
| --- | --- |
| 10:00:00 | ESA leader |
| 10:00:10 | **Title: GALILEO LAUNCH COMPLETING THE CONSTELLATION** |
| 10:00:10   * INT. Galileo Facilties, Fitcheck Galileo 23-24-25-26 - Kourou, French Guiana - June 2018 - ESA/CNES/ArianeGroup * INT. Ariane 5 Assembly building - Kourou, French Guiana - 2017 - ESA/CNES/ArianeGroup * Animation Galileo satellites being deployed - Unknown date - ESA | Kourou, Fench Guiana. In a dedicated cleanroom one of ESA’s new Galileo Satellites is going through a fit check. Here the satellites condition and functions are thoroughly being checked one last time before launch.  Together with 3 of its brothers this satellite will be sent into orbit on top of an Ariane 5 launcher.  It will be the third and final Ariane 5 launch for Galileo and these satellites truly mark the end of an era for the programme: they are the final satellites needed to complete the first cycle of the building the constellation. |
| 10:00:46:20  - INT. Interview Paul Verhoef - ESA offices - Brussels, Belgium - June 2018 - ESA | **ITW Paul Verhoef Director of Navigation – ESA**  *With this launch we will therefore have a complete constellation for operational purposes but yet without these necessary reserve satellites, which are essential if ever something goes wrong that we have of course back-ups. We have said that we would move to around 30 satellites in orbit, that is 24 operational and 6 reserves. This amount will be reached. We may sometimes be under that, we may sometimes after a launch be over it. So this is a figure that fluctuates a bit. The important number is that we need 24 satellites for operational purposes functioning at any time.* |
| 10:01:29:08   * Animation Galileo constellation - Unknown date - ESA * INT. Galileo Facilties Galileo 9-10 - Kourou, French Guiana - 2015 - ESA/CNES/ArianeGroup * INT. GIOVE A control room - 2005 - ESA * INT. Galileo Facilties, Fitcheck Galileo 23-24-25-26 - Kourou, French Guiana - June 2018 - ESA/CNES/ArianeGroup | Once the satellites are on orbit the constellation will be comprised of 26 satellites and for the first time fully operational.  Quite an achievement when you consider that 22 of these satellites where launched only in the last four years and when you recall ESA had no experience regarding satellite navigation when the Galileo programme started. It was also the first time the European space agency had to build so many satellites in such a short time. However ESA and industry faced this challenge and now master this technology and the production process. |
| 10:02:05:14  - INT. Interview Valter Alpe - Galileo Facilities - Kourou, French Guiana - June 2018 - ESA | **ITW Valter ALPE – Launch Campaign and Satellite Production Manager, ESA**  *The good success of being able to produce in such a series is also and maybe mainly because of our design which is taking in high priority the production needs. The production accessibility needs.* |
| 10:02:22:09   * Animation. Galileo Satellite 360° fly around -ESA * INT. Galileo control Room - Oberpfaffenhoven, Germany - 2013 - ESA * INT. Galileo maser clock - Oberpfaffenhoven, Germany - 2013 - ESA * Animation. Galileo tech view highlight maser clock - unknown date - ESA * Animation. Galileo maser clock - unknown date - ESA * Close GNSS simulator - unknown date - ESA * INT. Navigation Van - unknown date -ESA * INT. Galileo initial services start - European Commission - Brussels, Belgium - 2016 - EC * EXT. Travellers - Videoblocks * EXT. Girl with smartphone - Videoblocks * EXT. Guyusing navigation - unknown date -ESA | But the satellite design was not solely focussed on the mass production aspect. The quality of the navigation signal and of the services are key to the success of Galileo. The European developed maser clocks on board the satellites which have now proven to be 10 times more accurate and stable than the other clocks used by competitive systems. A result well beyond expectations:  The quality of the Galileo performances can be assessed by its users who have had access to the initial operational services which were started by the European commission two years ago. Furthermore, new smartphones are ready to receive Galileo signals, so Europe finally has its own operational satellite navigation system. A must have in the modern world. |
| 10:03:10:14  - INT. Interview Paul Verhoef - ESA offices - Brussels, Belgium - June 2018 - ESA | **ITW Paul Verhoef Director of Navigation – ESA**  *The system is important to Europe because we have a high dependency on GPS at the moment. Around 10% of our economic activity at the western world is directly dependent on GPS. Of course this is very high. And this is a dependence on a single system. So it is considered absolutely essential that we have not only our own system for obvious strategic reasons but also we need a back-up.* |
| 10:03:38:04   * INT. Galileo Facilties, Fitcheck Galileo 23-24-25-26 - Kourou, French Guiana - June 2018 - ESA/CNES/ArianeGroup * Still. Galileo 2nd generation preliminary Design - 2014 - ESA * Animation Galileo constellation - Unknown date - ESA * INT. Galileo Facilties, Fitcheck Galileo 23-24-25-26 - Kourou, French Guiana - June 2018 - ESA/CNES/ArianeGroup * Animation. Galileo Satellite 360° fly around -ESA | In the following years more satellites will join the constellation as spares or replacements. From 2025 a new and more powerful generation of Galileo satellites should be available to consolidate and enhance the system. It took many years to build Galileo but now it is a shining example of a well performing satellite navigation system. It allows Europe to be at the forefront of a domain that is now fully part of our daily lives. |
| 10:04:08:23 | **B-ROLL** |
| 10:04:08:16   * INT. Interview Paul Verhoef - ESA offices - Brussels, Belgium - June 2018 - ESA | **ITW Paul Verhoef, Director of Navigation – ESA - ENGLISH**   * operational constellation and spare satellites * Importance of Galileo for Europe * Third and final Ariane 5 launch |
| 10:07:08:16   * INT. Interview Paul Verhoef - ESA offices - Brussels, Belgium - June 2018 - ESA | **ITW Paul Verhoef, Director of Navigation – ESA - FRENCH**   * On the upcoming Ariane 5 launch * Status of the constellation |
| 10:08:15:06   * INT. Interview Paul Verhoef - ESA offices - Brussels, Belgium - June 2018 - ESA | **ITW Paul Verhoef, Director of Navigation – ESA - DUTCH**   * On the upcoming Ariane 5 launch * Importance of Galileo for Europe |
| 10:10:17:02   * INT. Interview Paul Verhoef - ESA offices - Brussels, Belgium - June 2018 - ESA | **ITW Paul Verhoef, Director of Navigation – ESA - GERMAN**   * On the upcoming Ariane 5 launch * Importance of Galileo for Europe |
| 10:12:00:13  - INT. Interview Valter Alpe - Galileo Facilities - Kourou, French Guiana - June 2018 - ESA | **ITW** **Valter Alpe – Launch Campaign and Satellite Production Manager, ESA - English**  - Galileo Satellite Design |
| 10:13:14:12   * INT. Galileo Facilties - Kourou, French Guiana - June 2018 - ESA/CNES/ArianeGroup | **Galileo 23-24-25-26 Launch campaign**  **Fitcheck**  **CSG Kourou, French Guiana**  **June 7, 2018**  (12 shots) |
| 10:14:29:01   * Animation. Galileo Satellite 360° fly around -ESA | **Galileo 360 fly around**  **Animation**  **ESA** |
| 10:15:09:24 | **END GEN** |