**Preparing for an Earth Observation satellite mission**

April 2019

A-Roll

Duration: 3:20

Text intro: Developing a space mission is a long process that involves a lot of tests, sometimes in harsh environments. An airborne campaign was recently carried out in the Arctic between Greenland, Iceland and Svalbard. Enduring temperatures of 30 degrees below zero, a team tested an airborne version of an imaging microwave radiometer to support the development of a potential satellite mission for Europe’s Copernicus programme.

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| **Timecode** | **Footage** | **Voiceover** |
| 10:00:00 | Opening titles |  |
| 10:00:10 | GVs  Twin Otter plane carrying radiometer, Longyearbyen airport, Svalbard  March 2019 | Inside this small plane at the airport of Longyearbyen, one of the most northern cities in the world, is an instrument that is helping to define a future space mission to better understand our planet. |
| 10:00:33 | GVs  Campaign team checking the radiometer, Longyearbyen airport, Svalbard  March 2019 | In the extremely harsh conditions of the Arctic, engineers and scientists are testing a microwave radiometer: an instrument that is able to monitor sea ice and its evolution. |
| 10:00:50 | Soundbite: **Tania Casal**  **Scientific Campaign Coordinator, ESA** | *The radiometer just senses – it reads, basically – the sea ice at certain frequencies. And from that, from breaking it into several frequencies you can study the sea-ice signatures. From that you can infer what kind of sea ice you have, and also from that you can infer how old the sea ice is, for instance.* |
| 10:01:13 | GVs  Views from and inside the plane: sea ice, campaign team at work, Arctic Ocean  March 2019 | The information on sea-ice characteristics from this airborne campaign is being used to support the Copernicus Imaging Microwave Radiometer, one of the six high-priority candidate satellite missions being studied for the European Union’s Copernicus system.  This is a difficult activity, but necessary to be sure that **if** the mission is selected to go into space, scientists will be able to retrieve the high-quality data they are looking for. |
| 10:01:44 | Soundbite: **Tania Casal**  **Scientific Campaign Coordinator, ESA** | *This instrument that we’re flying has been around for many years already and had to be completely renovated in order to fly again. We’re testing it now for the first time, because we want to obtain the sort of data that the satellite will see later on. And really answer some scientific questions we’ve had in the meantime with this data that we’re going to collect here.* |
| 10:02:07 | GVs  Snow and sea ice, Longyearbyen, Svalbard  March 2019 | This is how many operational Earth observation missions are created: a policy need that leads to the development of a tool able to give the best scientific measurements.  The results on concentration and distribution of Arctic sea ice will contribute to the larger question of climate change, and how the Arctic environment is affected by this global phenomenon. |
| 10:02:29 | Soundbite: **Professor René Forsberg**  **National Space Institute, Denmark** | *The sea ice is strongly changing. You can see that parts of Svalbard which were earlier ice-covered in winter like the fjords just out here, they are not ice-covered anymore. In the Arctic ocean, in the summer, there’s much less ice and that is the very important thing to follow by the present missions, the CIMR which we fly for right now and also for the future.* |
| 10:02:51 | GVs  Views from and inside the plane: mountains of Svalbard, campaign team at work, sea ice  March 2019 | This Arctic airborne campaign to help prepare the Copernicus Imaging Microwave Radiometer is part of this quest to obtain more accurate data, providing hard facts on the evolution of ice coverage, one of the key elements to understanding climate change and its impact on Earth - all part of the Integrated European Policy for the Arctic. |
| 10:03:16 | End of a-roll |  |
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|  | Preparing for an Earth Observation satellite mission : B-Roll | |
| 10:03:16 | Soundbites: **Tania Casal, Scientific Campaign Coordinator, ESA [English]** | |
| 10:05:37 | Soundbites: **Tania Casal, Scientific Campaign Coordinator, ESA [Portuguese]** | |
| 10:08:41 | Soundbites: **Professor René Forsberg, National Space Institute, Denmark [English]** | |
| 10:15:44 | Soundbites: **Professor René Forsberg, National Space Institute, Denmark [Danish]** | |
| 10:18:02 | GVs Twin Otter plane, campaign team checking the radiometer, Longyearbyen airport, Svalbard, March 2019 | |
| 10:22:54 | GVs Views from and inside the plane: sea ice, campaign team at work, glacier, Arctic Ocean  March 2019 | |
| 10:24:01 | GVs Snow and sea ice, Longyearbyen, Svalbard, March 2019 | |
| 10:25:47 | GVs Views from and inside the plane: mountains of Svalbard, campaign team at work, sea ice, March 2019 | |
| 10:26:45 | end of b-roll | |