



## Spanish WindSled expedition takes Panasonic Toughbook to unexplored Antarctic

For almost two months, the Inuit Wind Sled team has traveled 2,538 kilometers in one of the most remote and unexplored areas of planet Earth: Continental Antarctica. With the help of Panasonic TOUGHBOOK rugged tablets and notebooks, the four explorers have carried out 10 leading research projects in different fields such as biology, glaciology, meteorology, and telecommunications.

### Challenge

Carry out ten scientific experiments and demonstrate that the WindSled is a suitable means for carrying out polar scientific research.

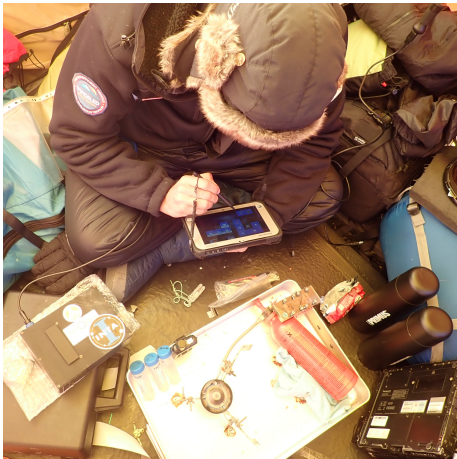
### Solution

The TOUGHBOOK CF-20 and the TOUGHPAD FZ-M1 proved very useful thanks to their ruggedness and their resistance to low temperatures

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Isaac Feijoo, Account Manager for Spain and Portugal at Panasonic Mobile Solutions Business Division Europe



In a world that seems overpopulated, it is difficult to imagine that there are still areas of the globe where there is no human life. Nonetheless, the team of the Inuit WindSled project has travelled 2,538 kilometers over 52 days in one of the most remote and unexplored areas of planet Earth: the Continental Antarctic, where life is neither present nor possible in the absolute nothingness.

The purpose of this feat was to carry out ten scientific experiments and to demonstrate that the WindSled, launched by the explorer Ramón Larramendi in 2000 and steadily improved over the years on different expeditions, is a suitable means for carrying out polar scientific campaigns on account of its low cost and zero environmental impact in one of the most fragile and complex places on the planet.



The team of Spanish explorers, made up of Ramón himself, Ignacio Oficialdegui, Hilo Moreno and Manuel Olivera, carried out ten cutting-edge research projects in different fields including biology, glaciology, meteorology, telecommunications, space science and the environment, compiling data from a zone in which almost no information is available on the ground. It was the first time that the European Space Agency (ESA) was able to compile data on operation of all of its satellites in the Galileo Constellation in the Antarctic. The Galileo system is the alternative to the North American GPS for navigation via satellite.

In addition to the ESA, the explorers carried out studies for the University of Maine (USA), which involved compiling samples of snow and ice for the study of climate change in the region; for the Autonomous University of Madrid and the Spanish State Meteorology Agency (AEMET), to determine the capacity for dispersion and colonization of microorganisms in polar areas, in relation to climate change; or for the University of Valencia, among other.



The scientific equipment carried in the wind sled included a Mars Environmental Dynamics Analyzer (MEDA) sensor, developed by the University of Alcalá de Henares and the Center of Astrobiology (CSIC-INTA), and which has been approved for travel to Mars on the Mars 2020 mission. The similarities between the environmental and climate conditions of the Antarctica and those of the red planet make the continent ideal to put in practice different technologies designed for the exploration of Mars.

In addition to the MEDA sensor, the wind sled was equipped with a Signs Of Life Detector (SOLID), a tool developed in Spain by the Center of Astrobiology to detect extraterrestrial life through planetary exploration, capable of detecting and identifying biochemical composites via in situ analyses of samples from the ground and liquid samples.

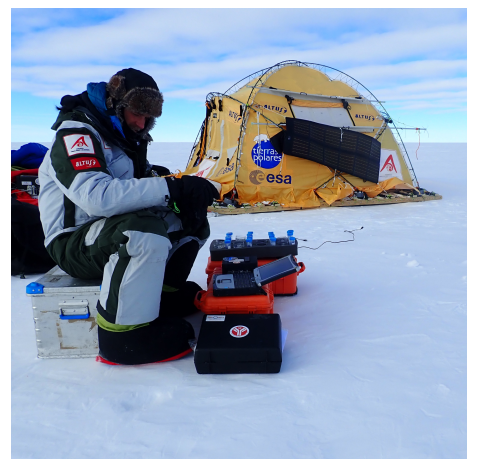
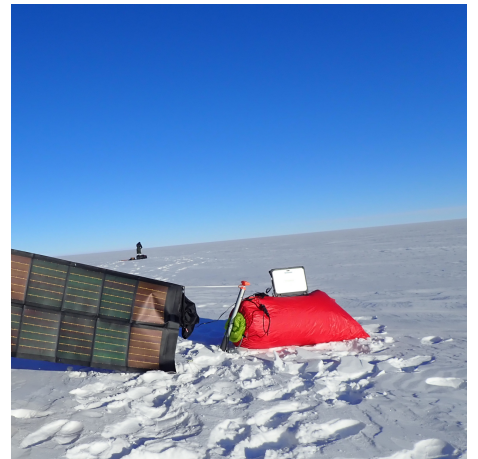
**To collect all of this information, and to ensure that the expedition was a success, the team used two ruggedized Panasonic TOUGHBOOK devices: the CF-20 Laptop and the TOUGHPAD FZ-M1 tablet, which are designed to withstand water, dust and extreme temperatures, making them well suited to Antarctic conditions.**

Ignacio Oficialdegui is Head of Wind and Photovoltaic Technology at Acciona Energía and one of the longest serving members of the team, having joined the project in 2000 shortly after it was launched, and he has participated in all of the Antarctic expeditions with this vehicle. **"We needed computer equipment that would allow us to collect data from the different measurement devices, make backups of the information collected and other graphical material, reset the software in scientific devices to fix them when necessary, write reports and the logbook, and communicate with the press that was following our expedition,"** he explained.

For Oficialdegui, the principal added value of Panasonic TOUGHBOOK products is their ruggedness, having witnessed their resistance to extreme conditions and impacts caused by potholes in the terrain, making the equipment much more versatile, and allowing him to change task when necessary without having to store the equipment in a shock-free location to prevent damage. **"Sometimes a fragile computer is more of a problem than an advantage, because we are travelling by sled with a tent in constant movement, with loads of things in a very small space over uneven terrain, and events can require us to change task suddenly. TOUGHBOOK devices have allowed us to relax in this regard, since you just have to close the lid and leave it in the tent, and you know nothing will happen to it. Then you open the lid and you can keep working with no problems."**

The CF-20 is the first totally detachable rugged laptop, with a durable design that is both compact and lightweight, and a versatility that enables it to be folded and positioned in six different ways. It can be used with gloves or with the stylus, and the long battery life (up to 17 hours thanks to a second hot-swappable battery) meant they didn't have to connect the laptops as frequently to the photovoltaic modules to recharge them.

**The TOUGHBOOK devices have also demonstrated their resistance to lower temperatures than other conventional equipment, operating perfectly at 30° below zero.**



"I got in touch with Panasonic TOUGHBOOK because their resistance to low temperatures caught my attention. From there everything was very easy, they provided us with the device and **the truth is we have not been disappointed,**" explains Ignacio Oficialdegui.

**"Panasonic rugged mobile computing is designed to withstand the most extreme atmospheric conditions, so we are particularly pleased to be able to demonstrate the reliability of products such as the CF-20 and the FZ-M1 in an exceptional environment such as the Antarctic,"** comments Isaac Feijoo, Account Manager for Spain and Portugal at Panasonic Computer Products Europe.

The Panasonic TOUGHBOOK FZ-M1 tablet also performed well and, although they were not able to make it fit quite so well with their specific requirements, Ignacio believes there is a lot of potential for the future, since in addition to the versatility it offers in terms of hardware and accessories, you can also carry it in your pocket, which helps to keep the device warm and to better withstand low temperatures.

Moreover, the Intel Celeron processor in the device provides it with maximum mobility and energy efficiency, as well as being a significantly lightweight tablet, weighing just 540 grams. It is IP65 certified, which means it is watertight and resistant to dust and snow, and provides exceptional outdoor visibility, making it the perfect tool for a scientific expedition of this caliber.

**When asked about the future of Panasonic TOUGHBOOK devices on future trips, the director of Acciona has no doubt that they will make room for them in their luggage because of the added value these products bring.**

But what about him? Ignacio laughs. "The truth is that every expedition involves a huge personal commitment: almost a year of preparation, building the sled and the kites, coordinating with different scientific teams to see what research services they are going to need in situ, looking for funding and sponsors, and all of that in your free time, plus all the effort needed to swim against the tide of established, conventional thinking, especially in terms of our profound respect to the environment and zero impact. It makes no sense to send out an expedition to study the effects of climate change while generating more carbon dioxide and waste in a practically unspoiled environment."

**"Our objective is to make the WindSled an official project available to Spanish scientists, which could position us amongst the leading countries in terms of research and exploration of the Continental Antarctic. We would also like to bring new professionals into the team so that we can take in turns. Nonetheless,"** concludes Ignacio, "I'm absolutely hooked on wind power, its energy is always calling to me."

