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Brazil contributes to research in the Antarctic

Brazil is committed to the research and preservation of the Antarctic and its unique climatic characteristics. Vaisala equipment is used for reliable in-situ data.

Vaisala's representative office in Brazil, HOBECO Ltda, supplied a portable Vaisala Automatic Weather Station (MAWS) to the Antarctic Meteorological teams of the Directory of Hydrography and Navigation of the Brazilian Navy (DHN) at the "Estação Antártica Comandante Ferraz (EACF)", which is the Brazilian Antarctic Base.

The station was installed in summer 2005, and has operated continuously and satisfactorily under the most adverse meteorological conditions. As a way to evaluate the performance of the system, HOBECO

interviewed Lieutenant-Commander Emma Giada Matschinske, head of the Meteorological Forecast Division of the Brazilian Marine Meteorological Service, operated by DHN.

Why does Brazil have an Antarctic Station?

The Antarctic region and the surrounding Southern Ocean is the least known region in the world. It has its own distinct climatic characteristics, which make working outdoors difficult for human beings. Many contemporary processes of

global relevance can be witnessed there, such as ozone depletion, atmospheric pollution, climate change, sea level rise and melting ice shelves and glaciers.

The highly successful International Geophysical Year of 1957-58 gave rise to the formulation of the Antarctic Treaty in 1959, and its ratification in 1961. The Treaty has promoted cooperation among nations and stimulated unrestricted scientific research and data exchange.

As one of the countries to ratify the Antarctic Treaty, Brazil assumed

international commitments which imply the duty to carry out scientific research and to preserve the Antarctic environment.

What is the role of the Brazilian Navy in the Brazilian Antarctic operations?

Brazilian activities in the Antarctic region are coordinated by the Brazilian Antarctic Program (PROANTAR). The main efforts of Brazilian scientists focus on the Comandante Ferraz, EACF Antarctic station.

Both the administration of EACF and the logistic support for materials and staff are provided by the Brazilian Navy. PROANTAR also relies on support flights, carried out by a Brazilian Air Force aircraft, and on PETROBRAS, Petróleo Brasileiro S/A, which is responsible for all fuel used.

Where in the Antarctic continent is EACF based?

EACF is located at 62°08 S 058°40W in Admiralty Bay, King George Island, some 130 km from the Antarctic Peninsula. The Station has been named after Commander Luis Antonio de Carvalho Ferraz, a late Navy Hydrographer, one of the Brazilian Antarctic exploration pioneers.

When did EACF operations start?

EACF commenced operations in 1984, and has continued with no operational interruptions so far. Its tasks include supporting research programs, which are developed to study the impacts of global environmental changes in Antarctica and its consequences for the Americas. Brazilian researchers also contribute at three other sites located at Elephant, Nelson and King George Islands, and on board the oceanographic support ship Ary Rongel.



Vaisala Automatic Weather Stations survive even in the most demanding weather conditions.

What is DHN's role in Antarctic weather forecasts?

Weather forecasting is paramount for the safety of activities in the Antarctic. DHN transmits daily bulletins and special meteorological forecasts, as well as numerical weather products for EACF. The Ary Rongel ship has also benefited from atmospheric and wave forecasts.

Why did DHN need an Automatic Weather Station at the EACF?

The station is used to evaluate weather forecasts generated by the Brazilian Navy. It also allows meteorologists to observe the main characteristics of the meteorological polar summer systems in-situ. The Brazilian Navy has already sent six Meteorological Officers to EACF in different periods during the latest Southern summers. With the data provided by Vaisala systems, DHN Meteorological Officers can evaluate the necessity to increase the resolution of its numerical models, and work towards the implementation of data assimilation and state-of-the-

art numerical weather prediction, currently under development at DHN.

What are your experiences with the Vaisala weather stations?

The Vaisala systems are easy to set up and configure, and measure wind speed and direction, pressure, temperature, relative humidity and precipitation - guaranteeing the necessary data for the evaluation and calibration of the numerical weather models generated by DHN.

Comparison between the forecasts made in-situ with the ones elaborated remotely revealed that the presence of meteorological teams from DHN at EACF allowed a better understanding of local conditions, which led to an improvement of about 15% in forecast accuracy.

Further information:

www.mar.mil.br/dhn/chm/meteo
www.vaisala.com/weather/products/weatherstations