



# VAISALA

## NO COMPROMISES ON QUALITY

Vaisala is a global leader in environmental and industrial measurement solutions. The company offers a wide range of innovative observation and measurement products and services for the needs of industry, meteorology and many weather-dependent sectors, such as aviation.

Vaisala serves national meteorological institutes as well as organisations whose operations are significantly affected by weather. Vaisala's customers also include industrial companies for whom accurate measurements and monitoring of weather conditions are of vital importance.

Vaisala's products and services cover measurement devices ranging from small probes to comprehensive deliveries of weather observation solutions, such as regional surface weather observation networks and airport weather systems complete with data services.

Vaisala employs approximately 1,400 professionals at operating locations worldwide. The Group achieved net sales of EUR 253 million in 2010. Annually Vaisala serves customers in more than 150 countries.

## BANGKOK'S NEW AIRPORT

SATEL radio modems are used at airports in many different types of equipment. At Bangkok they handle LLWAS-system data transfers. The system observes inconsistencies in the winds around the airport. Sudden windshears or downdrafts are dangerous phenomena for aircraft during take-off and landing. Downdrafts typically arise in the tropics, and air accidents have occurred in connection with them. Bangkok's new airport has wind sensors on 12 high masts. Based on continually updated information, the system calculates the consistency of the wind field and warns about sudden changes.

The electricity required for the masts is obtained from solar panels, and data transfer is handled by radio modems. Key selection criteria for the SATELLINE

modems were their low power requirement and suitability for 12-volt electrical systems. The modems also operate reliably at distances of up to 5 km or more, which is difficult to achieve with "free frequency" devices. SATEL is a renowned manufacturer with impeccable testing documentation, so official approval presents no problems.

Equipment usability was also an important criterion. SATEL has considered matters from the user's perspective and its devices are easy to configure. Vaisala's project manager in the Bangkok project says that the fact that the user-interface and the necessary tools have been purposefully kept the same year after year is a truly positive feature.



Although Vaisala builds its systems such that the malfunctioning of one device does not bring down a whole system, the project manager considers SATEL's durability and reliability to be a big plus.

"The equipment's mechanical structure inspires confidence, and maintenance has been absolutely excellent compared with some other manufacturers we've dealt with."

## System in a nutshell

**LLWAS**  
(Low Level Windshear Alert System)  
Bangkok's new airport.

- Four weather stations containing SATELLINE modems monitor wind stations in the airport area.
- 12 wind stations containing SATELLINE modems
- Quadruple authentication
- Wind stations send data once every 10 seconds
- Wind stations have 50 W solar panels and 2 x 26 Ah batteries, 12 V
- Completech antennas
- Obelux mast lights
- Temperature up to 40°C, no cooling or fan



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