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Vaisala expands into lightning data services

Global Atmospherics Inc. joins Vaisala

In March 2002, Vaisala acquired Global Atmospherics Incorporated of Tucson, Arizona, USA, from the Sankosha Group. Global Atmospherics is the world's largest lightning detection equipment manufacturer and lightning data services operator. Renamed as Vaisala-GAI Inc., the company is now part of Vaisala's Remote Sensing Division. This acquisition strengthens Vaisala's lightning and thunderstorm detection expertise and expands the product selection offered to clients whose operations are affected by severe weather.

NLDN communications work as follows: 1) Sensors detect lightning and transmit the data to a satellite, 2) The satellite relays the information to earth stations, 3) Data are transmitted to the Network Control Center via landlines, 4) The Network Control Center processes the data, 5) The processed data are relayed back to the satellite, 6) Lightning data appear on user's display across the country within seconds of occurrence.
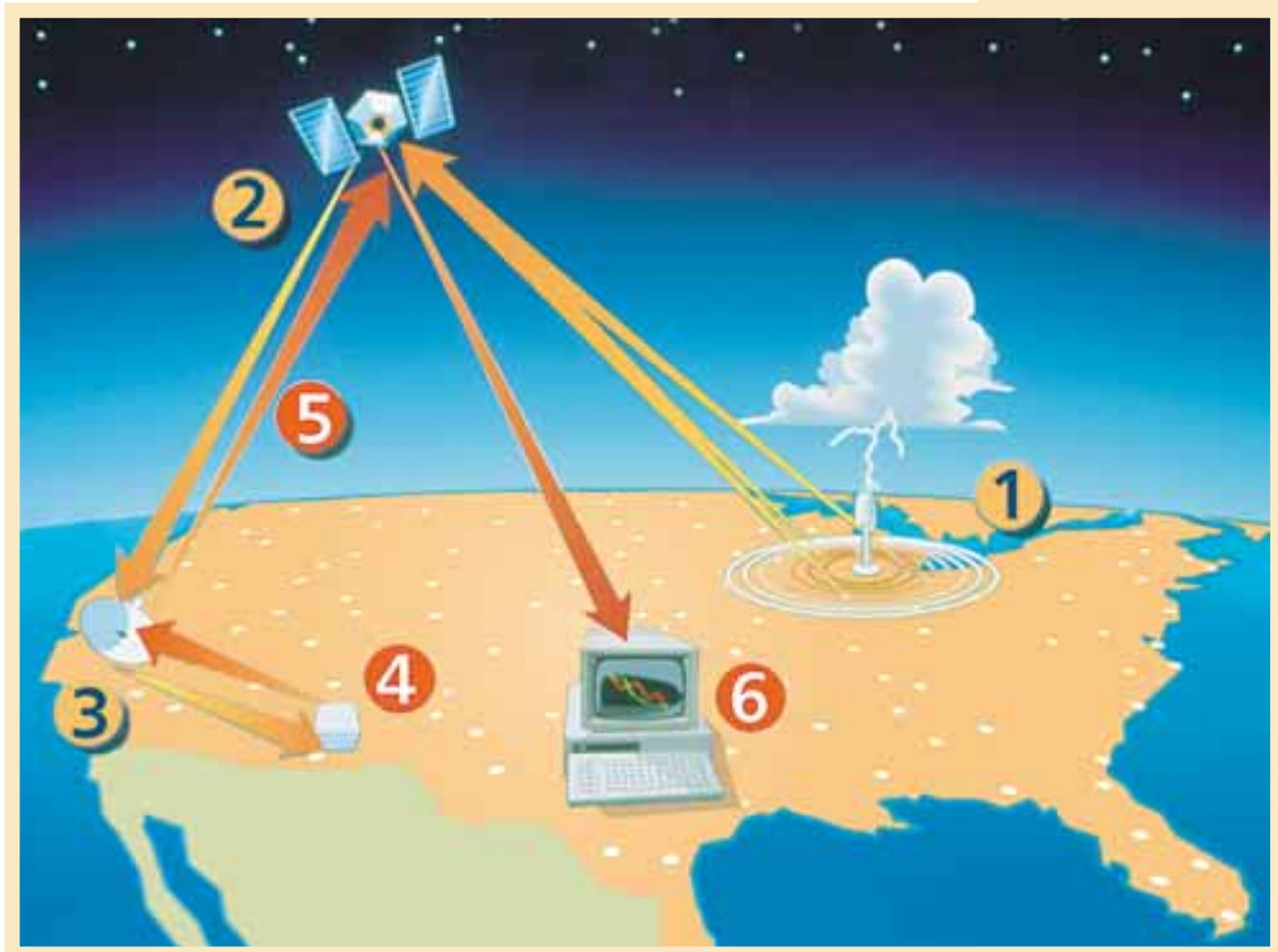
Vaisala-GAI is the leading manufacturer of standalone lightning detection instruments and LF (Low Frequency) lightning detection networks and has also recently developed VHF (Very High Frequency) lightning detection technology. The company owns and operates a national lightning sensor network in the U.S. and sells various lightning data products to the U.S. National Weather Service, airports, power utilities, recreational facilities, insurance companies and weather service providers. The company also participates in lightning data services in Canada, France, Central Europe and the Benelux countries.

Comprehensive remote sensing and lightning detection expertise

In early 2000, Vaisala acquired another lightning detection network manufacturer, Dimensions SA of France, which also part of the Remote Sensing Division of Vaisala. It is currently the leading manufacturer of VHF technology Total Lightning Detection Networks. Mr. Martti Husu,

The National Lightning Detection Network® locates strikes across the U.S. in seconds. The network operates 24 hours day, 365 days a year. Pictured is the control center at the Vaisala GAI Inc. office in Tucson.

Director of the Remote Sensing Division, stresses that there are remarkable synergies in combining the two lightning detection network product lines into one business unit. The combination will provide optimized systems for the varied needs of lightning detection network clients.

The Remote Sensing Division focuses on two new and expanding fields of atmospheric measurement: nowcasting and meso-scale forecasting. These are fields where severe weather phenomena which rise within a relatively short time, like thunderstorms, windshear, local rainfall and hailstorms, can be predicted. Following the acquisition of Global Atmospherics Inc. and the previous acquisition of Dimensions SA, Vaisala will elevate to a global market leadership position in the field of lightning detection and localization.

Vaisala-GAI's history

Vaisala-GAI was founded in 1976 by three University of Arizona scientists, Dr. E. Philip Krider, Dr. Burt Pifer, and Dr. Martin Uman, who began researching lightning properties and behavior in the mid-1970's. Over the next decade their research, combined with the contributions of others, resulted in the development of the United States' only national lightning detection system, the U.S. National Lightning Detection Network® (NLDN®). At the time of acquisition by Vaisala, the company was a subsidiary of the Sankosha Group of Japan.

Real-time lightning data nationwide in the U.S.

Since 1989, the NLDN® has monitored the 20 to 25 million cloud-to-ground lightning strikes that occur every year across the contiguous 48 states. NLDN® consists of over 100 remote, ground-based sensing stations located across the United States which detect the electromagnetic signals given off when lightning strikes the earth's surface. These remote sensors send the raw data via a satellite-based communications network to the Network Control Center operated by Vaisala-GAI Inc. in Tucson, Arizona. Within seconds of a lightning strike, the NCC's central analyzers process information on the location, time, polarity, and amplitude of each strike. The lightning information is then communicated to users across the country. Lightning data users in the US include the National Weather Service (NWS), the Federal Aviation Administration (FAA), the National Aeronautics and Space Administration (NASA), the Weather Channel® and PGA TOUR®, as well as major power companies, airports, and thousands of businesses nationwide. NLDN data is accessible to subscribers through various DOS, Windows®, or Unix® based display and analytical software.

European cooperation in lightning detection

Operators of Vaisal-GAI lightning information system technology in Europe established the European Cooperation for Lightning Detection (EUCLID) in August 2001. This lightning detection network covers the greater part of the European continent. EUCLID is capable of tracking lightning by mapping up-to-the-second lightning activity throughout Austria, Belgium, Czech Republic, France, Germany, Hungary, Italy, Luxembourg, Netherlands, Norway, Poland, Slovakia, Slovenia, and Switzerland. The network uses 85 ground-based sensors that detect and then report detailed information on each lightning event to a single, central processor. The network then provides accurate and reliable information about the cloud and cloud-to-ground lightning strikes to each member.

Preparing for storm hazards

Lightning information is critical for weather forecasters and weather-sensitive businesses, such as airport operators and air traffic controllers, electric power utilities, mission critical facilities, golf courses and outdoor sports facilities. They closely watch storm development so that they can be prepared for storm hazards. When a storm starts generating lightning the lightning alerts forecasters to watch the thunderstorm for other dangerous weather elements that often occur with electrified storms, for example heavy rain, hail, flash flooding, high winds, downbursts, and tornadoes. ●