About Vaisala

Vaisala develops, manufactures and markets electronic measurement instruments and systems for environmental measurement and the measurement needs of industry. Vaisala sensors, instruments and systems are used the world over by organizations that need to measure the environment with great accuracy and consistency. Vaisala offers a comprehensive range of products that provide the measurement data necessary for forecasting the weather, protecting the environment and improving the safety of air and road traffic. The parent company, headquartered in Vantaa, Finland, is listed on the Helsinki Exchanges (HEX).

For more information visit www.vaisala.com

About NLDN and CLDN

One of Vaisala’s recognized areas of expertise is lightning. Vaisala Thunderstorm is the lightning-specialty business unit within the Vaisala Group. Lightning-sensitive operations around the world rely on Vaisala lightning warning, tracking, mapping and analysis systems and services to save lives, protect property and reduce economic losses caused by lightning.

The Network Control Center (NCC) for the U.S. National Lightning Detection Network® (NLDN) and the Canadian Lightning Detection Network (CLDN) is based in the Vaisala Tucson Operations. The NLDN and CLDN provide users of lightning data seamless information with no degradation in DE or accuracy along or across any nation, provincial, territory or state border. Together the NLDN and CLDN provide the most comprehensive lightning monitoring solution in the world.

For more information on Vaisala Thunderstorm, please visit www.vaisala.com/thunderstorm.

For more information on the CLDN, please visit http://weatheroffice.ec.gc.ca/lightning

Environment Canada’s CLDN
Canadian Lightning Detection Network

24/7 lightning tracking across Canada
The No. 1 Source for Lightning Data in Canada

The Canadian Lightning Detection Network is the only lightning information system monitoring cloud-to-ground lightning activity across Canada, 24 hours a day, 365 days a year.

Weather forecasters in both public and private sectors use real-time lightning maps and individual lightning strike characteristics from the CLDN to closely monitor thunderstorm development, strength, and paths for more accurate severe weather forecasting and to issue warnings. Operations that are affected—forestry, power, airports, telecommunications, explosives handling, mining and more—rely on real-time lightning data to tell which resources and facilities are at increased risk from thunderstorms.

CLDN up-to-the-minute lightning information is used for monitoring current conditions and for studying past events. Since 1998, the CLDN has been reporting cloud-to-ground lightning strokes and flashes; creating an archive of lightning flash and stroke data used for statistical and forensic analysis.

The CLDN is owned by Environment Canada.

Real-time and Historical Lightning Data for Critical Decisions

Live lightning tracking to save lives and protect property

Meteorologists use real-time CLDN data to closely monitor thunderstorm development, strength, and movement for issuing severe weather warnings. Lightning is a fast and accurate indicator of severe weather and can also help identify hazardous weather where other observations can be less effective, such as in mountainous areas where radar images may be blocked and remote areas lacking other data.

Managers responsible for human safety, property protection, risk management, and productivity at operations that are sensitive to lightning and thunderstorms rely on CLDN data for early warning of lightning and thunderstorm threats. By knowing when and where lightning is active, planned precautions can be taken early to reduce vulnerability and risk.

Vaisala’s lightning detection technology used in the CLDN and network performance have been scientifically validated. Network operations and every CLDN sensor are continuously monitored to ensure data quality and proper operation.

The CLDN is owned by Environment Canada.

 Historic lightning information for research and analysis

Since 1998, the CLDN has recorded cloud-to-ground lightning strokes and flashes to create a valuable lighting archive database used for statistical and forensic analysis.

Meteorologists, electric power, arson investigators, insurance companies, and land management agencies use historic CLDN data to correlate and document suspected lightning damage with recorded lightning activity. A specific lightning incident can be examined in detail or researched more comprehensively, covering large areas over days or weeks.

Seasonal or multi-year studies of lightning trends in a specific area are important for lightning risk assessment for site selection and designing optimal lightning protection schemes.

CLDN stroke data provides time, location, polarity, amplitude of each cloud-to-ground lightning flash. However, up to 20 return strokes can make up a flash and these strokes often strike the earth in different locations up to sixteen kilometers apart.

CLDN stroke data provides time, location, polarity, and amplitude of each stroke to target locations and automatically monitors lightning activity in user-selected areas.

CLDN stroke data is most often used for general trending of lightning events; stroke data is critical for understanding and detailing specific incidents.

CLDN performance is measured in two ways: location accuracy and detection efficiency. Median stroke location accuracy, or the typical margin of error for locating a cloud-to-ground stroke, is scientifically validated at 500 meters.

Flash detection efficiency, or percentage of cloud-to-ground lightning flashes detected by the network, has been verified to range from 80 to 90 percent across most of Canada for those events with peak currents above five kiloamperes.

The network and every CLDN sensor are continuously monitored to ensure data quality and proper operation. CLDN optimizes have been scientifically validated to range from 80 to 90 percent across most of Canada for those events with peak currents above five kiloamperes.

How the CLDN Works

Weather forecasting: detects and helps predict severe weather for public warning

Power-sensitive operations: prepare for storm-caused power outages by switching to backup power before operations are impacted

Hazardous materials handling: warn personnel working near explosives and flammable materials to evacuate

Forestry: dispatch fire fighting crews to suspicious fire starts for more successful initial attack, narrowing the patrol and search areas

Aerospace: monitor weather for safest conditions for satellite launches

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