

GLD360 Enables Quality Lightning Warnings for Any Airport Around the Globe



Quality lightning warnings are now possible at airports around the world as a result of Vaisala's Global Lightning Dataset (GLD360). These warnings can be used to improve safety for airport grounds crew personnel, such as baggage handlers and re-fuelers.

Vaisala's Airport Lightning Warning System (ALWS) consists of two primary components; GLD360 data and Vaisala's Thunderstorm Warning System software (TWX300). TWX300 ingests and displays a real-time GLD360 datastream and allows the customer to configure and issue lightning warnings.

GLD360

Vaisala owns and operates a lightning detection network that offers a uniform, quality lightning data product GLD360 across the globe. Similar to Vaisala's United States National Lightning Detection Network (NLDN), each GLD360 sensor provides both direction and time-of-arrival information. Scientific studies have shown that using both direction and time-of-arrival sensor information significantly improves lightning network detection efficiency. In addition, GLD360 sensors detect lightning up to 9,000 km from their location due to breakthroughs in sensor software algorithms developed by Stanford University and improved sensitivity.

GLD360 performance is continuously verified over the continental United States using Vaisala's precision NLDN as ground truth. The results consistently show near-NLDN quality lightning data being reported across the continental United States.

During the summer of 2011, a GLD360 verification study was conducted by the Finnish Meteorological Institute (FMI) over Scandinavia. NORDLIS data produced by a separate Vaisala precision lightning sensor network were used as ground truth and the results were consistent with the verification findings over the continental United States.

TWX300 Lightning Display and Warnings

TWX300 software is used today at numerous airports in the United States and several international airports outside the United States to display and issue cloud-to-ground

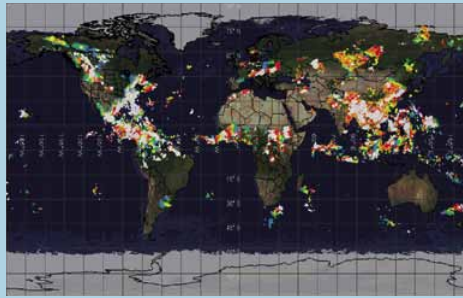


Figure 1. TWX300 image showing over two million lightning events reported by GLD360 across the globe on 23 June 2011. Colors show age of lightning events on 23 June in 4-hour intervals with shades of blue representing data from 00-04 UTC and shades of white representing data from 20 UTC 23 June to 00 UTC 24 June.

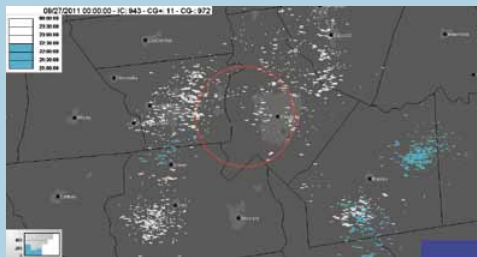


Figure 2. TWX300 map showing a lightning warning for Charlotte/Douglas International Airport, United States on 27 September 2011 (for demonstration purposes only, not official lightning warning issued by the airport). Lightning color-coded by time with white shades representing data from 2230 UTC 27 September to 0000 UTC 28 September and light blue shades representing data from 2100 to 2230 UTC 27 September. Lightning warning issued when lightning was observed within 16 km of the airport (red circle).

(CG) lightning warnings. TWX300 installations at United States airports currently ingest, display and issue CG lightning warnings using Vaisala NLDN data. Before GLD360, Vaisala airport customers outside of the United States had to rely upon the availability of lightning data from another customer in the region that installed and operated a precision Vaisala lightning detection network, if one existed. Now Vaisala airport customers can purchase an Airport Lightning Warning System (ALWS) directly from Vaisala for any airport in the world.

Vaisala has recently conducted studies that evaluated GLD360 airport lightning warning performance against Vaisala's NLDN in the continental United States. Similar to the GLD360 verification studies over this region, GLD360 produced airport lightning warnings that were near the high quality standard set by the NLDN.

In summary, quality airport lightning warnings that improve safety for airport grounds crew personnel can be issued anywhere in the world thanks to breakthrough Vaisala GLD360 technology and Vaisala TWX300 software.

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For more information, visit www.vaisala.com or contact us at sales@vaisala.com

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