

# Vaisala Thunderstorm

## Lightning Network Performance Evaluation Program (NPEP)



### NPEP Features and Benefits

The NPEP report provides network database sensor configuration settings and recommendations including the following:

- Network detection efficiency as determined from observable parameters, in order to verify performance
- Network corrections that can be entered directly into the central processor database
- Comparison of location accuracy before and after the new site error corrections are applied to the central processor
- Required changes in the patented location algorithm configuration file

### Get the Most Out of Your Lightning Network

Ensure your central processors are maximizing their capabilities with the Vaisala Thunderstorm Lightning Network Performance Evaluation Program (NPEP). The NPEP validates the lightning network performance and is dedicated to optimizing Vaisala Thunderstorm System Networks to their highest level of performance. A scientific lightning expert will conduct a detailed analysis to determine areas for network improvement, which include:

- Verification of the reliability of the output data
- Confirmation that the network environment has not changed
- Making certain that the system is properly configured

- Ensuring that new or upgraded sensors are configured and contributing to the network in the most effective way

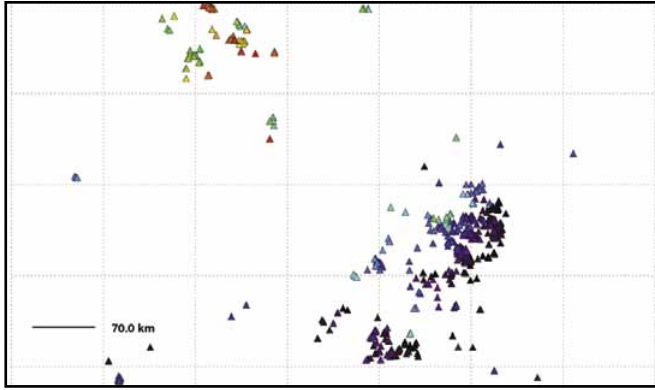
### Why and When

An NPEP should be performed upon network installation for optimal performance and then again under the following circumstances:

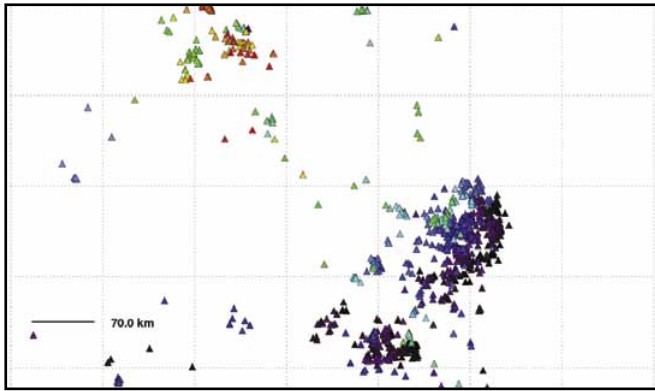
- Eighteen months have passed since the last NPEP
- The site has undergone a physical change (buildings have been erected, trees planted, etc.)
- A sensor has been rotated or moved
- The number of sensors in the network has changed
- High sensorqqa errors in log files are being generated by the central processor

# Lightning Network Performance Evaluation Program (NPEP)

Below is an example of network performance before and after a Vaisala NPEP



Before a Vaisala NPEP



After a Vaisala NPEP

- Higher detection efficiency
- Better clustering of lightning events or lightning location accuracy

For more information or to order a Vaisala NPEP report, please contact your Vaisala sales representative or email our Thunderstorm Support desk at [thunderstorm.support@vaisala.com](mailto:thunderstorm.support@vaisala.com)

## Vaisala NPEP Service Levels

### LS7001 (LF network)

Service	What We Provide
Quick Check	<ul style="list-style-type: none"> <li>Graphing of problem areas from sensorqa log files</li> <li>Summary and recommendations</li> <li>Quote for additional work</li> </ul>
Add or Move Sensor	<ul style="list-style-type: none"> <li>Graphing of problem areas from sensorqa log files</li> <li>Site error corrections</li> <li>Random error of angle, time, and signal amplitude</li> </ul>
Complete NPEP	<ul style="list-style-type: none"> <li>Graphing of problem areas from sensorqa log files</li> <li>Site error corrections</li> <li>Random error of angle, time, and signal amplitude</li> <li>Gain corrections (for LPATS sensors)</li> <li>Tuning located .cfg file</li> <li>Analysis of CHI-square distribution</li> <li>Cloud to Ground relative Detection Efficiency (DE) map</li> <li>Updated Location Accuracy (LA) map</li> </ul>

### LS8000 (LF + VHF Network)

Service	What We Provide
Quick Check	<ul style="list-style-type: none"> <li>Includes above LF network analysis plus the below VHF analysis</li> <li>Graphing of RDAM using B\$ data</li> </ul>
Add or Move Sensor	<ul style="list-style-type: none"> <li>Includes above LF network analysis plus the below VHF analysis</li> <li>Graphing of RDAM using B\$ data</li> <li>Antenna rotation correction</li> <li>Raw sensor data analysis of antenna diagrams, time series plots, outage times, directional noise sources</li> <li>Modulus (<math>\sin^2 + \cos^2</math>)</li> </ul>
Complete NPEP	<ul style="list-style-type: none"> <li>Includes above LF network analysis plus the below VHF analysis</li> <li>Graphing of RDAM using B\$ data</li> <li>Antenna rotation correction</li> <li>Raw sensor data analysis of antenna diagrams, time series plots, outage times, directional noise surfaces</li> <li>Modulus (<math>\sin^2 + \cos^2</math>)</li> <li>Analysis and fixing of sdd.cfg file</li> </ul>

# VAISALA

For more information, visit [www.vaisala.com](http://www.vaisala.com) or contact us at [sales@vaisala.com](mailto:sales@vaisala.com)

Ref. B210775EN-A ©Vaisala 2010  
 This material is subject to copyright protection, with all copyrights retained by Vaisala and its individual partners. All rights reserved. Any logos and/or product names are trademarks of Vaisala or its individual partners. The reproduction, transfer, distribution or storage of information contained in this brochure in any form without the prior written consent of Vaisala is strictly prohibited. All specifications — technical included — are subject to change without notice.

