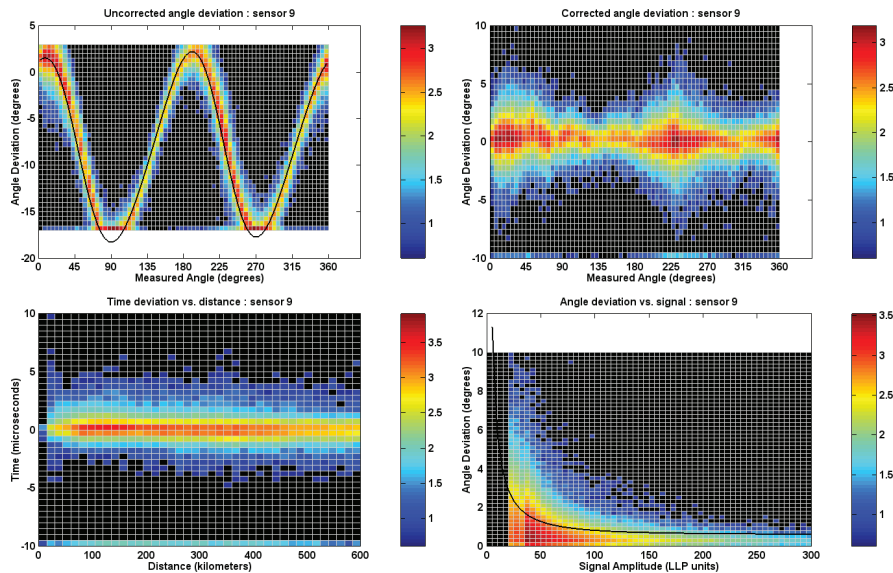


Vaisala Lightning Network Performance Evaluation Program (NPEP)



NPEP reports

Get the Most Out of Your Lightning Network

The Vaisala Lightning Network Performance Evaluation Program (NPEP) enhances the performance of your lightning network by introducing site-error corrections for sensors and optimizing the parameters in your central processor. Additionally, the NPEP estimates the improved lightning network performance after the site-error corrections have been introduced. The NPEP provides:

- Verification of the reliability of the output data
- Confirmation that the network environment has not changed
- Optimal system configuration
- Assurance that new or upgraded sensors are configured and contributing to the network in the most effective way

Why and When

For optimal network performance, an NPEP should be performed under the following circumstances:

- After network installation, once adequate lightning data has been gathered by the new network
- Eighteen months have passed since the last NPEP
- Any sensor site has undergone a significant physical change (buildings or fences have been erected, trees planted, etc.)
- Any sensors have been rotated or moved
- The average number of contributing sensors, available from regstatd, has changed significantly.
- High sensorqa errors in log files are being generated by the central processor

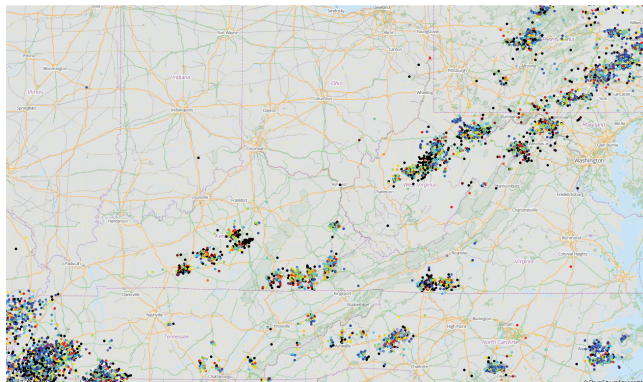
NPEP Features and Benefits

The NPEP report optimizes network sensor configuration settings and includes the following:

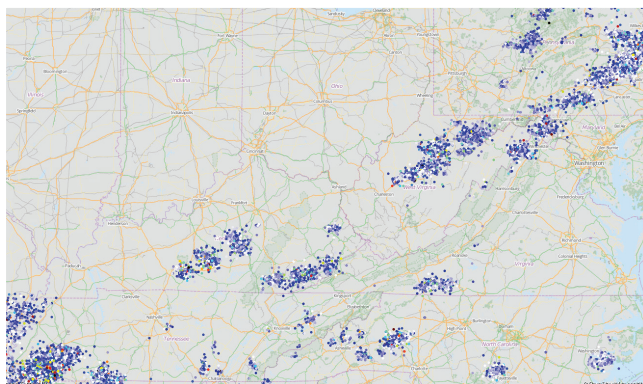
- Site-error corrections which take into account the electromagnetic environment of each sensor and can be entered directly into the central processor database
- Estimation of network detection efficiency as determined from observable parameters
- Estimation of location accuracy after the new site error corrections are applied to the central processor
- Optimization of parameters used in the patented location algorithm configuration file

Lightning Network Performance Evaluation Program (NPEP)

Examples of lightning data before and after a Vaisala NPEP are shown below:

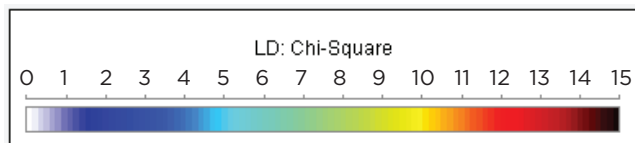


Before a Vaisala NPEP



After a Vaisala NPEP

- Higher detection efficiency
- Improved location accuracy (better clustering of lightning events)



Vaisala NPEP Service Levels

Vaisala LF networks

Service	What We Provide
NPEP for added or relocated sensors	<ul style="list-style-type: none"> Site error corrections for added or moved sensors only Random error of angle, time, and signal amplitude for added or moved sensors only Gain corrections where applicable Tuning the location algorithm configuration file Analysis of chi-square distribution
Complete NPEP	<ul style="list-style-type: none"> Site error corrections for all sensors in the network Random error of angle, time, and signal amplitude for all sensors in the network Gain corrections where applicable Tuning the location algorithm configuration file Analysis of chi-square distribution Cloud to Ground Detection Efficiency (DE) analysis Location Accuracy (LA) analysis

Vaisala LF + VHF Networks

Service	What We Provide
NPEP for added or relocated sensors	<ul style="list-style-type: none"> Includes the LF network analysis listed above and the following VHF network analysis Antenna rotation correction for added or moved sensors only Raw sensor data analysis of antenna diagrams, time series plots, outage times, directional noise sources for added or moved sensors only
Complete NPEP	<ul style="list-style-type: none"> Includes the LF network analysis listed above and the following VHF network analysis Antenna rotation correction for all sensors in the network Raw sensor data analysis of antenna diagrams, time series plots, outage times, directional noise surfaces for all sensors in the network

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.



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

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