Event Location Estimation Program Improvement

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Background and motivation:

- FNET/GridEye monitors north American power grids and provides event reports
- The program was built based on libraries that are not available on latest operating systems
- The accuracy of location estimation can be further improved
- The program needs to be modularized in order to adopt new features easily

Technical approach:

- Translate the code into C# and adopt modern libraries
- Unit test the code to ensure correctness

Conclusion:

- The program was remade and now can be running on latest systems, including Windows and Linux
- The modularization makes further improvement and maintenance easier
The program analyzes events, including generation trips and pumped storages, in real time and then sends event reports to NERC and other CURENT industrial members.

The reports include estimated event location and estimated disturbance magnitude in MW.

The new version of the program was tested on hundreds of confirmed events to ensure correctness.
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