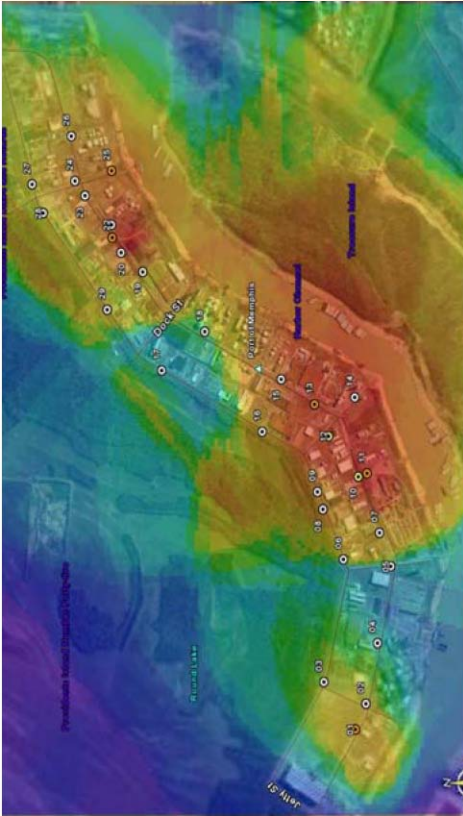


Risk-Based Sensor Placement Methodology

Providing Optimal Monitoring of Hazardous Releases

Collaboration with the Port of Memphis, Tennessee, for Sensor Placement



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Summary

Current methods for sensor placement are based on qualitative approaches ranging from “best guess” to expensive, customized studies.

Scientists at ORNL have developed a model for quantitative risk based determination of optimal sensor locations for protection of public safety and the environment by taking into account a variety of factors such as weather, terrain, potential airborne hazards, and population distribution. Whereas current technologies for sensor placement only consider airborne concentration, this method also takes into account toxicity and population density as key factors in determining risk across the site of interest. Furthermore, the method is generally applicable as it does not depend on factors such as locations, types of threats, etc. User friendly software provides an objective and quantitative way of measuring the benefits of each additional sensor. The method has been successfully demonstrated at the Port of Memphis, Tennessee.

In addition to the value for monitoring hazards, this system could also be used to determine optimal placement of sensitive assets, such as buildings, crops, etc, to minimize exposure risk due to hazardous material releases.

Advantages

- Software package meets end user requirements such as quality, functionality, configurability, and documentation
- Substantial savings by determining the smallest sensor investment needed to achieve a specified level of detection
- Eliminates many hours of intense labor required to analyze various sensor placement parameters
- Provides greater financial and efficacy value compared to current sensor placement approaches

Patents and Copyrighted Software

- (UTB – ID 1639 and UTB – ID 1573) Patent Pending



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