KENEXIS

EFFIGY

Fire and Gas Mapping Software

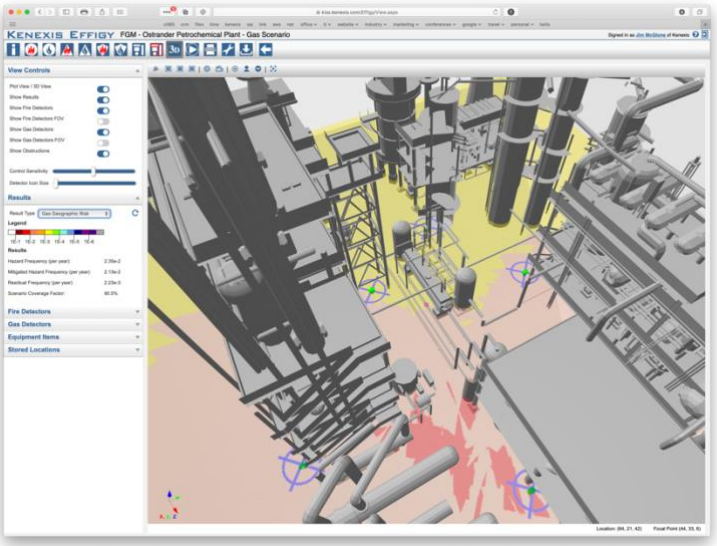
design and verification of detector locations and characteristics
to assess performance-based coverage

Overview

Effigy software assist engineers to solve the problem of where to put fire and gas detectors, why they need to be there, and how many detectors are required to achieve an acceptable level of protection. Designing the detector locations and characteristics is easy and the software verifies the design will provide the performance-based coverage required.

Fire and Gas Systems (FGS) are important tools for safeguarding process plants and production facilities that handle flammable and toxic materials. All such facilities have inherent risk, which in some cases require the installation of FGS to mitigate hazards. Kenexis performs design engineering of Fire and Gas Mapping (FGM) to determine where the detectors should be to sense the consequences and how the FGS should function for our clients. Continuing engineering and research have determined that accuracy of and repeatability of coverage analysis requires quality tools like Effigy

Effigy was developed internally by FGS consulting engineers that perform FGM, risk assessments, and design basis engineering. Their expertise captured and enhanced in Effigy - Fire and Gas Mapping software. This combination of engineering and software development provides the most rigorous analysis tool, which results in the safest plant at the lowest cost by optimizing detector placement.



Features

Geographic & Scenario Analysis

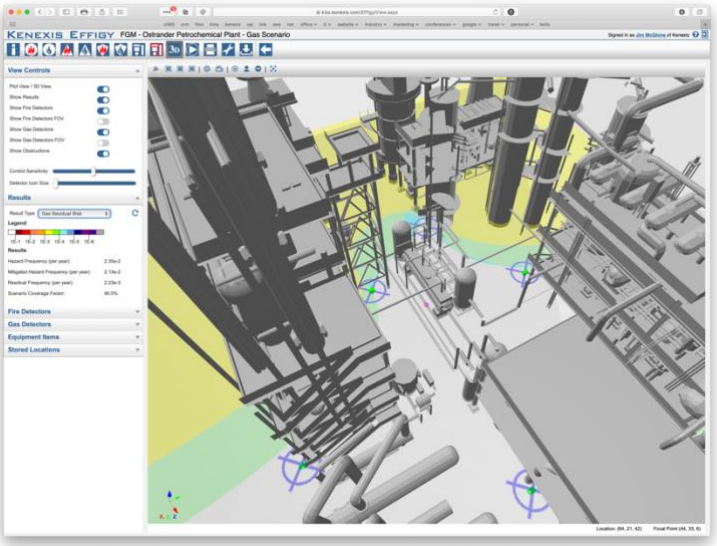
Fire, Flammable Gas, Toxic Gas, Ultrasonic, Gas Cloud Imaging

Plume Modeling (U.S. Pat. No. 10,600,057)

ISA-TR84.00.07 Compliant

3D Design, Import, and Analysis

Enterprise, Multi-User Web-Based Platform

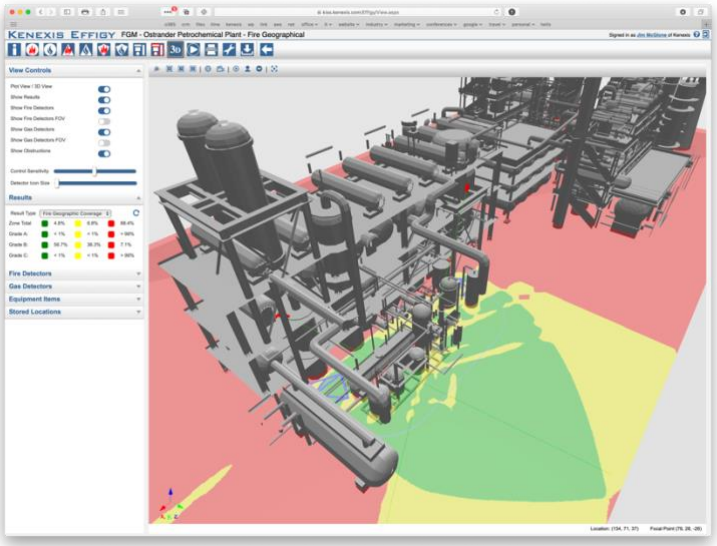


Geographic & Scenario Analysis

Analyzes detector location and characteristics based on geographic coverage or scenario coverage. Analysis considers the obstructions, consequences, detector equipment and settings used in the facility under study. Results provide a geographic risk profile that combines the thousands of consequences possible in a zone, calculates the detector coverage by zone, and maps the scenarios detected and not detected by the detectors.

Fire, Flammable Gas, Toxic Gas, Ultrasonic, Gas Cloud Imaging

Effigy supports generic detectors to allow development of the design throughout the engineering process up until detectors are actual chosen. Effigy also specifically models any brand of Fire, Flammable Gas, Toxic Gas, Gas Cloud Imaging & Ultrasonic detector, separately assessing all documented sensitivity settings of those detectors. The software comes with a database of most common detection equipment and associated performance metrics. Fire detection accurately models the cone-of-vision projections as detectors are moved away from the elevation of interest and rotated away from parallel using FM3260 Certified data.

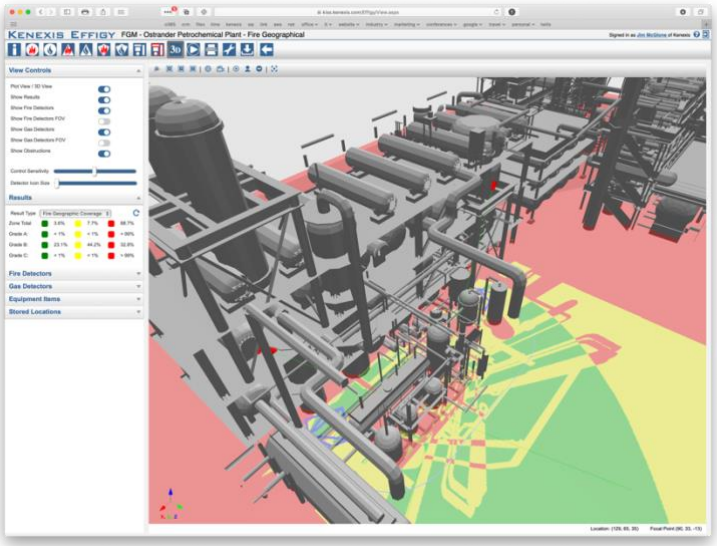


Plume Modeling (U.S. Pat. No. 10,600,057)

Our patented (U.S. Pat. No. 10,600,057) Plume Model accurately models different fire sizes and materials of interest (e.g., methane, hexane, methanol). This substantially increases to accuracy of detection capabilities.

ISA-TR84.00.07 Compliant

ISA-TR84.07-2010 Guidance on the Evaluation of Fire, Combustible Gas, and Toxic Gas System Effectiveness provides guidance on risk and performance-based FGS design. After years of research, validation, and projects Kenexis developed Effigy to perform sophisticated and accurate coverage calculations based on either geography or consequence modeling to standardize the approach to achieving quantitative coverage targets into their fire and gas design processes.



3D Design, Import, and Analysis

Supports 3D STL import (most 3D CAD packages can export to STL), 3D model creation using basic shapes, and 3D analysis including the detector cone-of-vision, obstructions, and obstruction shadow orientation. Analyzes multiple obstruction geometries, in all orientations. Results are presented in color-coded graphical coverage maps and coverage tables indicating extent of the various coverage areas.

Enterprise, Multi-User Web-Based Platform

Effigy is a module in the Kenexis Instrumented Safeguard Suite that assist in the performance-based design of your FGS detector array and ongoing management of instrumented safeguards, such as safety instrumented systems and fire and gas systems. Kenexis Instrumented Safeguard Suite is software as a service. The entire suite runs in an online web browser, is always up to date, supports multi-user, and is priced based on annual seats or by project.

Transition

Kenexis engineering staff will assist with the transition from your existing system to Effigy, contact us at info@kenexis.com or call at +1-614-451-7031.

About

Kenexis, an independent consulting engineering firm that provides technical safety services, performance-based fire and gas mapping, and risk analysis for process industries, and other industries that manage risks related to chemicals or stored energy.

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