

# Using Effigy

Using the Kenexis Effigy® Fire and Gas Mapping Toolkit



Kenexis Online Training

Effigy solves 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. By verifying the coverage of an array of fire and gas sensors, Effigy validates that the locations chosen will provide the coverage desired.

This online course is a complete guide on use of the Kenexis Effigy® Fire and Gas Mapping Toolkit. Effigy® is a component of the Kenexis Instrumented Safeguard Suite of applications for development of the design basis of a full range of instrumented safeguards employed at process facilities.

## In this course you will:

- Understand the hardware and software architecture and requirements of the Kenexis Instrumented Safeguard Suite
- Learn to incorporate facility data and administration information for an FGS project
- Understand how facilities are broken down into monitored areas and how those areas are described in the overview section of each study
- Learn how to input information about the physical layout of a plant, including definition of equipment items which may also be leak sources that generate loss of containment scenarios
- Learn how to include full range of FGS detection equipment in your study, including optical fire detectors and point an open path gas detectors
- Learn how to execute fire and gas mapping algorithms using the operations required to develop desired results
- Understand the FGS mapping results including geographic coverage, geographic risk, and scenario coverage for fire detection and gas detection
- Watch and listen to lectures, examples, take quizzes, and review quiz answers

## About Kenexis

Kenexis is an independent engineering consultancy. We ensure the integrity of instrumented safeguards and industrial networks. We do this by employing core skills in risk analysis, reliability engineering, and process engineering. Using these skills, we help establish the design and maintenance specification of instrumented safeguards, such as safety instrumented systems (SIS), alarm systems, fire and gas systems. We also use the same skills for industrial control systems (ICS) network design, assessments including cyber security, and industrial network performance analysis.

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## Course Outline

**Introduction and Scope** is an introduction to the Kenexis Instrumented Safeguarding Suite and Effigy including an overview of the contents of the course.

**Application Access** discusses the architecture of the software and servers that allow users to create and modify fire and gas mapping studies including details regarding browser software and web interfacing addresses.

**Handling Multiple Studies** discusses how the user defines facilities, manages library data, and can organize and manipulate project files that are associated with a facility.

**FGS Study Overview** presents how to enter and edit information that defines the extents and attributes of the overall zone that is being modeled along with various study parameters that define the facility and the desired results of the study.

**Working with Equipment Items** discusses the entry and editing of equipment items, physical pieces of equipment that can be obstructions to the view of detection equipment and also sources of leaks of process material. Their assessment is critical both in the analysis of risk posed by the process plant and also the effectiveness of fire and gas detection arrays.

**Working with Fire Detectors** discusses the management of fire detectors in a study. Fire detectors can be placed in multiple locations and can have different performance results depending on the make and model selected, the positioning, along with the attributes of the design basis fire that is desired to be detected.

**Working with Gas Detectors** discusses the management of gas detectors in a study. The placement of gas detectors, including emitter and receiver locations for open path detectors, is important to the coverage results that are obtained. The section also discusses parameters that impact performance such as detector set points and critical gas cloud sizes.

**Running Coverage Calculations** provides an overview of the types of coverage calculations that can be performed in Effigy. The discussion includes the range of result types that can be calculated along with user changeable settings that can impact the results that are generated and the speed with which the calculations are performed.

**Viewing and Interpreting Results** presents an explanation of how to view and interpret the results of an Effigy study. A variety of results can be presented by Effigy, including geographic coverage results along with scenario coverage (and associated geographic results). This section will also discuss options for optimizing coverage results given the results from the analysis of an existing system.

**Using the 3D Viewer** discusses how to view equipment items, detectors, and coverage results in an interactive 3D environment.