



Open PHA™ and Open PHA™ Premium are powerful tools for performing, analyzing, and maintaining HAZOP and LOPA studies.

Open PHA™ software is designed for facilitations where the Internet is not always available. Open PHA™ Premium runs in a browser and requires an Internet connection. Engineers use Open PHA™ to facilitate HAZOP and LOPA studies regardless of the location and Internet capability and then upload the file into the Open PHA™ Premium for further integration with Vertigo™ and Arbor™ when they have Internet access.

Open PHA™ is a no cost powerful software. It runs on your computer so you can work anywhere. Open PHA can be downloaded at <https://www.kenexis.com/process-safety-software/openpha/download/> and installed on Windows, Mac, or Linux computer operating system. Each time the software is started, it will check to see if it is latest version and update itself at no cost.

Open PHA™ Premium runs in a browser and adds services to make processing HAZOP and LOPA results much easier once you return to the office. Premium performs language translation so local language HAZOPs can easily be read in virtually any language. Premium also integrates with Vertigo™ and Arbor™ to provide SIL Verification Calculations, IPL-SIF Linking, and Black Box - Fault Tree Analysis.

Open PHA™ Premium integration with the other Kenexis online software running in our secure private cloud platform makes sharing HAZOP and LOPA information with other tools and across an organization seamless. You can easily setup your vendor, integrator, and licensor so that they can see HAZOP and LOPA results securely. Additionally, you can assign permission for Kenexis to see your project for additional assistance with complex scenarios like a focused QRA or Fault Tree Analysis. Just like online banking, not even Kenexis can see your data in the secure cloud infrastructure unless you share it.

The data structure design is fully integrated making the transition from HAZOP to LOPA seamless. Gone are the days of porting data from HAZOP to LOPA and worrying about the consistency of information across multiple files, studies, or data structures. The technology platform was developed as an integrated HAZOP and LOPA application from its inception with a deliberate effort to eliminate the problems presented with other software. As a result, all data common to HAZOP and LOPA are part of a shared common data set saving you the time, effort, and frustration of managing replicated data in multiple locations and different languages.

Open PHA™ Premium leverages the power of the Kenexis Integrated Safety Suite™ to synchronize Independent Protection Layers (IPLs) in LOPA studies with the SIS lifecycle management tools in Kenexis Vertigo™. During project or conceptual design phases, Vertigo™ SIF lists can be automatically

#### Open PHA™

- Free Download
- Runs Standalone (Internet not required)
- Upload to Projects to Premium Version for Added Features
- Cross-Platform Desktop and Cloud-Based Solution

#### Open PHA™ Premium

- Cross Platform Desktop Application and Cloud-Based Enterprise Solution
- Seamless Integration of PHA, LOPA and SIS Design
- Integration with Vertigo SIS Lifecycle Management Software
- Flexible and Configurable Open-Source Data Structure





generated from IPL lists in Open PHA™ Premium. Following HAZOP and LOPA revalidation studies, Vertigo™ SIL Verification Calculations and Safety Requirements Specifications can be synchronized with Open PHA™ Premium automatically to update Risk Reduction and SIL Requirements.

We realize that organizations have installed software applications on individual computers where transitioning to secure cloud-based solutions may either be a slow process or in some cases, not feasible yet. Because HAZOP and LOPA studies are the core of process safety documentation we believe it is important for the information contained within the HAZOP and LOPA to be easily shared across applications and platforms. Open PHA™ was developed with an Open-Source Data Structure which makes it easy for programmers with application program interfaces (APIs) to pull data from HAZOP and LOPA studies into third party and custom software tools. This philosophy is a paradigm shift in PHA software as file data structures have historically been proprietary to prevent third-party access and discourage the use of competing software tools.

The development of Open PHA™ is the result of vast experience of the Kenexis process safety engineering team who have facilitated thousands of HAZOP and LOPA studies globally. Open PHA™ was developed internally with the intent of providing a better HAZOP and LOPA application which address the significant shortcomings of traditional software packages. Open PHA™ Premium is designed to enhance to process of integrating and acting on results while keeping the cost of the tool very manageable.

## About Kenexis

Kenexis is an independent engineering consulting firm headquartered in Columbus, Ohio, with offices in Houston, Singapore, and Dubai. Kenexis was established in 2004 and is a privately held. Kenexis clients span the globe in many industries. Kenexis has performed engineering services for over 500 different major process industry customers in locations spanning over 20 countries.

Vertigo™ is a cradle to grave SIS Lifecycle software for tracking all aspects of maintaining your SIS throughout its lifecycle including SIL Verification Calculations with our extensive Equipment Failure Rate Database, developing conceptual designs, documenting, and tracking design changes and maintaining design documentation. Making it easy to tell which systems need attention to stay in compliance.

Arbor™ is a powerful Fault Tree Analysis tool. This is very useful in the performance of calculations in situations where the problem is too complex for LOPA.

Effigy™ is our robust engineering tool for performance-based Fire & Gas Mapping to determine scenario coverage and detector placement as described in ISA TR84.00.07. Effigy helps solve the problem of where each detector should be and why.

