

SILcet Cloud Main Features and Advantages

Introduction

SILcet Cloud has been developed as a **modern web-based platform for SIL Verification activities**, maintaining a strong engineering-oriented philosophy while introducing major improvements in **usability, workflow efficiency, collaboration, and platform flexibility**.

The objective of this document is to summarize the main features and advantages of SILcet Cloud for engineers, consultants, EPC companies, and end users involved in SIL Verification activities according to IEC 61511 / IEC 61508 / ISA84 methodologies.

SILcet Cloud website: <https://siltool.com>

SILcet Cloud videos: <https://siltool.com/videos/>

Executive Summary

#	Feature / Aspect	Traditional Spreadsheet-Based Workflow	SILcet Cloud
1	User Interface	Excel/VBA-based interface	Modern web-based interface
2	Ease of Use	Requires familiarity with Excel structure	Easier navigation and data entry
3	Workflow Speed	More manual handling	Reduced engineering hours
4	Visual SIF Configuration	Limited visual interaction	Interactive block diagram workflow
5	Team Collaboration	File exchange required	Built-in collaboration
6	Simultaneous Multi-User Work	Limited	Supported
7	Project Sharing	Manual file exchange	Native project sharing
8	Browser Translation	Not available	Supported through browser
9	Installation & Maintenance	Excel/VBA environment	Centralized cloud platform
10	Excel Interoperability	Native Excel environment	Full export/import support
11	Premium Device Database	User databases only	Premium shared database
12	Consultancy Support	Not included	Included in Advanced Plan
13	Report Languages	Supported	Extended and customizable
14	Platform Evolution	Desktop solution	Strategic future platform

Note: An additional Excel-based SILcet version is also available for users who prefer spreadsheet-oriented workflows.

1. Modern Web-Based Interface and Improved User Experience

One of the main advantages of SILcet Cloud is its completely redesigned interface.

The platform has been developed as a modern web-based application using standard HTML technologies, providing a cleaner, easier, and more intuitive workflow compared with traditional spreadsheet-based workflows.

Main advantages include:

- **Easier navigation** through projects and SIFs.
- **Faster data entry** and configuration.
- **Reduced learning curve** for new users.
- **Improved visualization of SIF architectures** and subsystem configurations.
- **Reduction of engineering time** required for SIL Verification activities.

Additionally, users can benefit from browser functionalities such as automatic translation, multi-tab workflows, and flexible navigation between projects, databases, and reports.

Users can duplicate browser tabs and work with multiple views of the same project simultaneously, for example:

- SIF configuration in one monitor.
- Database review in another monitor.

Browser automatic translation can also assist users who are not comfortable working in English, which is the default language of the interface.

2. Team Collaboration and Project Sharing

SILcet Cloud introduces native collaboration features designed to **facilitate teamwork and project sharing in modern engineering environments**.

Main collaboration features include:

- Multiple collaborators can be invited to the same project.
- Shared projects can only be duplicated, exported, or deleted by the project owner.
- Invitations are possible between users with the same license type.

Two collaboration models are supported:

Project-Based Sharing:

A project owner shares a specific project with another user such as an external consultant or reviewer. Databases remain independent but can be exchanged using Excel import/export.

Full Sharing:

Several users can work using the same account credentials with full visibility of projects and databases. Simultaneous work by multiple users is supported.

3. Visual SIF Configuration and Block Diagram Workflow

SILcet Cloud allows users to **visualize the SIF block diagram while configuring the SIF**.

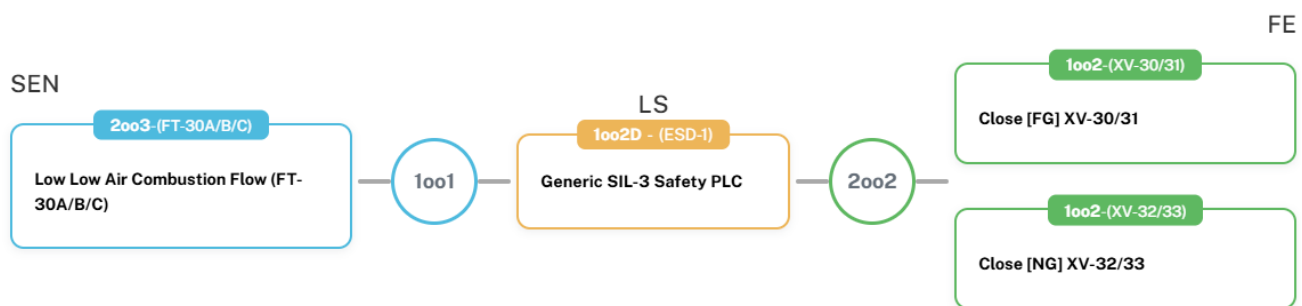
This provides major workflow advantages:

- Easier understanding of architectures.
- Improved visualization of voting structures.
- Easier configuration of complex subsystems.
- Reduced risk of configuration mistakes.

Descriptions can also be inserted directly within the block diagram of each subsystem:

- Sensor subsystem
- Logic solver subsystem
- Final element subsystem

This improves documentation clarity, communication between engineering teams, and readability of reports and project reviews.



4. Excel Export/Import Flexibility and External Workflow Integration

Projects and databases can be exported and imported using Excel templates.

Users can:

- Modify exported Excel files directly.
- Re-import modified information into SILcet Cloud.
- Develop complementary engineering tools.

Possible applications include:

- SRS generation tools.
- Customized SIF Lists.
- Proof Test checklists.
- Customized reporting systems.

Additional utilities based on Excel interoperability are currently under development.

The utility for importing exSILentia projects is now available within SILcet REVIEW as IMPORTER. It converts exSILentia detailed reports into project data for review and analysis in SILcet REVIEW.

IMPORTER simplifies interoperability by allowing users to bring information from exSILentia into the SILcet ecosystem and use SILcet REVIEW's review, analysis, and reporting functions.

5. Premium Device Database

Advanced Plan users have access to the SILcet Cloud Premium Database for SIF devices.

The initial release **includes more than 600 devices**, and the database will continue growing over time. The Premium Database includes failure rates and other SIL Verification parameters, as well as additional fields for remarks, engineering notes, and supplementary device information.

The objective of the Premium Database is to reduce manual data entry and engineering effort while improving consistency between projects.

6. Included Consultancy Support

For Advanced Plan users, one hour of free consultancy is included for SIL Verification related topics or engineering cases.

This consultancy is focused on Functional Safety engineering and SIL Verification applications.

Users can request assistance for:

- Complex SIL Verification cases.
- Architectural decisions.
- Proof test assumptions.
- IEC 61511 / IEC 61508 related questions.

Projects can also be temporarily shared for engineering review purposes.

7. Flexible Multi-Language Reporting

SILcet Cloud includes advanced **report language management capabilities**.

Two predefined languages are included by default:

- English
- Spanish

Additionally:

- Users can add up to three additional languages.
- Existing languages can be duplicated and customized.
- Headers and predefined report texts can be modified.

This allows adaptation of reports to company standards, client requirements, and local terminology preferences.

8. Easier Deployment and Maintenance

Compared with traditional Excel/VBA environments, **SILcet Cloud simplifies deployment and maintenance activities.**

Main advantages include:

- No VBA macro security restrictions.
- No dependency on local Excel installations.
- No Excel version compatibility issues.
- Centralized platform updates.
- Reduced IT maintenance effort.

9. SILcet Ecosystem and Future Development

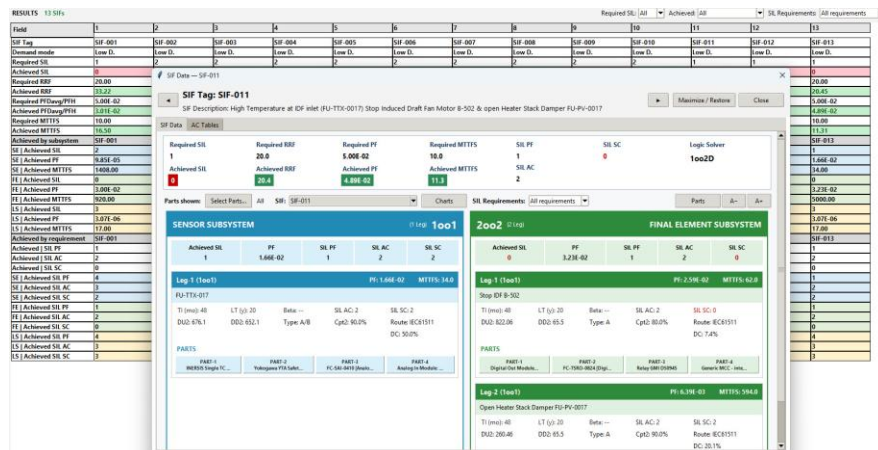
SILcet Cloud is the strategic platform for the continued development of the SILcet ecosystem, complemented by dedicated engineering applications.

The cloud architecture allows:

- Faster implementation of new functionalities.
- Easier integration of additional utilities.
- Improved scalability.
- Continuous platform evolution.

SILcet REVIEW is now available as a stand-alone application for Windows PCs. It complements SILcet Cloud with tools for reviewing SIL Verification projects, investigating results, and assessing alternative configurations.

SILcet REVIEW website: <https://safetyandisis.com/silcet-review/>



The screenshot displays the SILcet REVIEW application interface. At the top, a summary table shows various SIL metrics for different tags (SIF-001 to SIF-013). The main window is titled 'SIF Tag: SIF-011' and provides a detailed description: 'SIF Description: High Temperature at DIP inlet (PU-TTU-0017) Stop Induced Draft Fan Motor B-502 & open Heater Stack Damper PU-PV-0017'. Below this, there are sections for 'SIL Data', 'SIL Requirements', and 'SIL Calculations'. The 'SIL Data' section shows required and achieved SIL values for different components. The 'SIL Requirements' section lists the required SIL for various subsystems. The 'SIL Calculations' section shows the final calculated SIL values for the subsystems. The interface is designed to be user-friendly, with clear labels and a structured layout for reviewing complex SIL verification data.

SILcet REVIEW for SIL Verification Review and Checking

SILcet REVIEW supports the review and checking of SIL Verification projects created with SILcet Cloud, including:

- Internal project reviews.
- Independent verification activities.
- Third-party SIL Verification reviews.

The application helps reviewers assess whether:

- Main input data are correct.
- Results are technically consistent.
- SIF configurations are properly implemented.
- Project information is coherent across the complete SIL Verification.

Available review and analysis features include:

- Configurable results tables with search and filtering.
- Charts for comparing SIF architectures, parameters, and results.
- Detailed SIF data, including subsystems, legs, equipment, and calculation parameters.
- Automatic Review with user-configurable engineering checks.

Executive and technical reports, review data, and simulation results can be exported to Excel. These functions support a structured review workflow for large or complex projects.

SIF Simulation and Analysis

SILcet REVIEW includes PFDavg simulation to compare alternative parameter settings with the original calculation. This helps users assess options when:

- A SIF does not meet the required PFDavg target.
- Proof-test intervals, lifetime, failure rates, or proof-test coverage need to be reconsidered.
- Alternative voting architectures or beta factors need to be evaluated.

Simulation supports engineering assessment; proposed changes remain subject to appropriate validation and approval.

SILcet STUDIO and Future Planned Developments

Following SILcet REVIEW, SILcet STUDIO is planned as the next application in the SILcet ecosystem, with a broader range of engineering and documentation functions. Planned developments include:

- Generation of Safety Requirements Specification (SRS) documentation and Test Protocols.
- Utilities to analyze and evaluate the extension of useful life of SIF components.
- Further reporting and documentation capabilities, including PDF and Excel outputs.
- Utilities to compare costs of different SIF architectures and design alternatives.

10. Same Engineering Philosophy and SIL Calculation Basis

SILcet Cloud has been developed **based on practical Functional Safety engineering experience and real SIL Verification project workflows.**

The tool is based on:

- IEC 61511 / IEC 61508 / ISA-TR84.00.02:2022 methodologies.
- Practical SIL Verification workflows.
- Similar calculation approaches and engineering concepts.

The objective is to provide a flexible and practical engineering environment for SIL Verification activities while improving productivity and workflow efficiency.

Conclusion

SILcet Cloud combines practical Functional Safety workflows with modern cloud-based technologies while introducing major improvements in usability, collaboration, flexibility, and workflow efficiency.

