

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**.

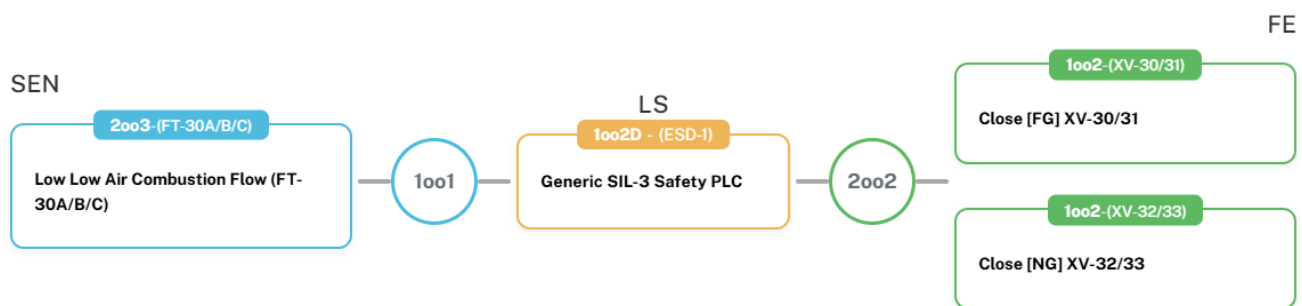
This provides major workflow advantages:

- 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.

In addition, a dedicated utility to facilitate the import of projects created with exSILentia is currently under development.

The objective of this utility is to simplify migration and interoperability workflows for users who need to **transfer SIL Verification projects from exSILentia into SILcet Cloud**.

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. Strategic Platform for Future Development

SILcet Cloud represents the strategic future platform of the SILcet ecosystem.

The cloud architecture allows:

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

In parallel with the development of SILcet Cloud, **a new stand-alone desktop application for local PC environments is currently under development.** The objective of this application is to provide advanced complementary engineering utilities **focused on review, analysis, optimization, and documentation workflows** related to SIL Verification projects.

The first planned release is expected to include at least the following functionalities:

SIL Verification Review and Checking Utility

A powerful utility designed to facilitate 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 utility will help end users verify that:

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

The visualization environment is expected to include:

- Advanced tables.
- Interactive charts.
- Search and filtering capabilities.
- User-customizable displays and review dashboards.

The objective is to allow a fast, practical, and efficient verification workflow for large or complex projects.

SIF Simulation and Optimization Utility

A dedicated simulation utility is also planned to help users analyze and optimize SIL Verification results by adjusting key parameters. This functionality will help users identify practical engineering solutions when:

- A SIF does not achieve the required SIL target.
- The calculated RRF is insufficient.
- Different architectural or maintenance strategies need to be evaluated.

The utility is expected to simplify sensitivity analyses and comparison of alternative design approaches.

Future Planned Developments

Future releases are expected to progressively include additional engineering utilities such as:

- Generation of SRS documentation and Test Protocols.
- Utilities to analyze and evaluate the extension of useful life of SIF components.
- Additional report generation capabilities in PDF and Excel formats.
- 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.

