

*SILcal X is developed by  
exida Development S.r.l Italy*

The main logo for SILcal x. "SIL" is in large red capital letters, "cal" is in large yellow capital letters, and "x" is in large red capital letters. A small "exida" logo is positioned above the "cal" part.

## Fully Integrated Safety Analysis Tool

**SILcal** is an integrated **tool suite** designed to perform all the **Safety Analyses** required by **ISO-26262** and **IEC-61508** for the development of **safety critical systems** and their **hardware** and **software** components.

# KEY FEATURES DESCRIPTION

**FMEA** – Full support to Failure Mode Effects Analysis, including process management support, compliant with VDA-AIAG 2019 standard.

**FTA (\*)** – Automatic generation of Fault Tree Analysis from FMEA failure model, cut-set analysis and PMHF calculation.

**DFA (\*)** – Identification of common cause initiators from FTA and exida DFA guideline.

**FMEDA** – Integration with FMEA, compliant with ISO-26262 and IEC-61508 recommendations.

**Failure rates and failure mode** distribution from industry standards (SN 29500, IEC TR 62380, etc.) and exida hardware component database.

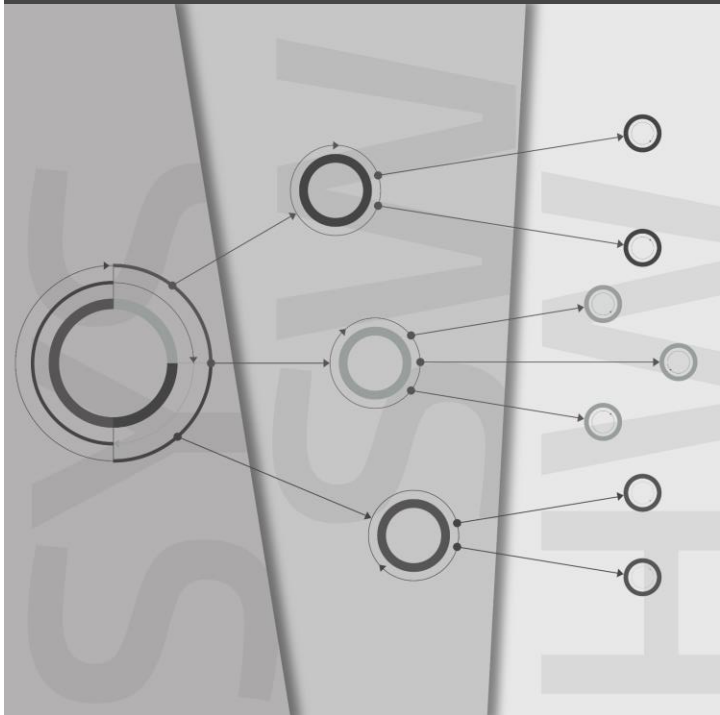
**Consistency** – Internal consistency between all safety analyses is guaranteed thanks to common data structure and aligned analyses methodologies.

*(\*) The current version doesn't support the SILcalX QS+ package, being the FTA and the DFA features still under development, but it will be available soon.*



## PACKAGES

- **SILcal X Q**  
qualitative FMEA, no DBs
- **SILcal X QS**  
qualitative FMEA + FMEDA + Siemens SN-29500 DB
- **SILcal X QS+**  
qualitative FMEA + FMEDA + FTA\* + DFA\* + Siemens SN-29500 DB



## INPUT

- Custom BOM import: possibility to import a customized HW component list to support FMEDA starting from an excel file
- Import from MSR-xml standard (FMEA only)

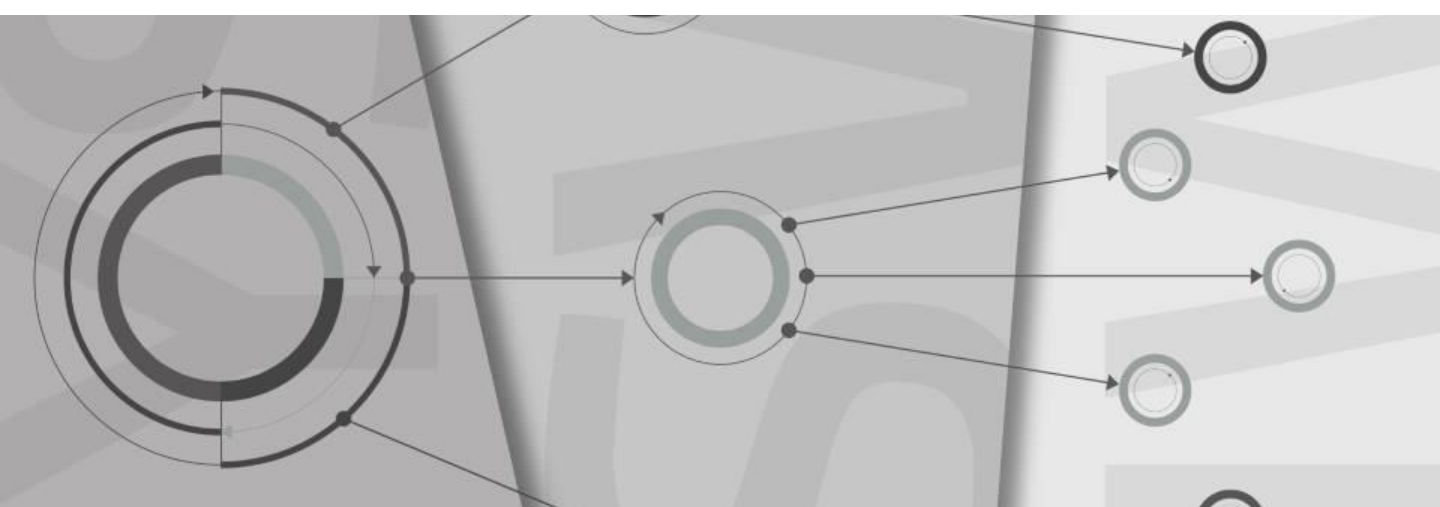
## OUTPUT

- Safety Analysis Reports (format .xlsx): FMEA, FMEDA, DFA
- Export to MSR-xml standard (FMEA only)

## MAIN IMPROVEMENTS VERSUS V9

As SILcal v9, **SILcal X** is a tool that supports you in the realization of all the Quality and Functional Safety analyses, and additionally:

- **SILcal X** is faster! The data elaboration was speeded up.
- **SILcal X** is simpler! New useful features are available while other operations were automated, making the work easier.
- **SILcal X** is VDA-AIAG compliant! It provides all the Optimization Steps and the FMEA- MSR as recommended by VDA-AIAG 2019. From now on, SILcal can be considered as a complete service platform that assists you in managing your projects. In an easy way, you may collect all the relevant information it needs to keep track of team members registrations, description of the planned actions and the defined timelines, project-related relevant documents and meeting minutes. The FMEA report includes both, the technical analysis and the project related plan and information, ensuring a full compliance with the VDA-AIAG standard.
- Due to the deep changes in the internal data structures, **SILcal X** can't directly upload the analyses generated by SILcal v9: to guarantee the operational continuity, a conversion tool is provided.



## FUTURE EVOLUTIONS

SILcal X is growing. Our tool is constantly being improved.

We believe the SW solutions should meet the needs of users in the best way possible. This is reason why all the requests and the suggestions of our Customers are always taken into consideration, and if consistent with the aims of the tool, inserted in the development plan, with a priority normalized to the concurrent planned ones.

The main new features that will be released in the first half of the year 2021 are:

- NET Graphics: Qualitative Fault Tree Analysis, Failures, Functions.
- Automated HW DB definition: to create and update custom defined databases.
- Customized View: to set the dimension of the characters and the number representation.
- Compare and Merge: comparison between projects and possibility to merge them.



# LICENSING

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**SILcal X** tool will be released in the download area, upon checking of customer's credentials.

Both the **standalone** and the **network licenses** are protected by a HW Locked mechanism, provided by Dongle USB Key but the network licenses could be also provided with a SW System Locked protection.

Currently it **supports Microsoft Windows 10 platforms**.

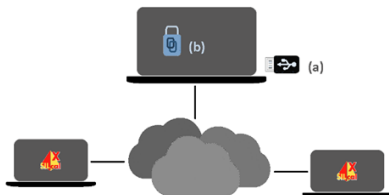
## Standalone

This Dongle Key is to be used on a specific system and supports only one license.



## Network

- This Dongle Key is to be used on a network server; it can contain one or more licenses and allows each license to be mutually and exclusively used by a remote user.
- The protection could be provided by a SW mechanism, that bounds the license(s) to the system; in case it needs this/these license(s) can be moved to a different system.



## SILcal X Demo-version

The DEMO-version could be downloaded from the following link: <https://www.exida-eu.com/software-tools/silcal-safety-analysis-tool>

In DEMO-version, **SILcal X** is limited to the following restrictions:

- Max 50 items in project tree to allow editing (max items undefined for read only access)
- No HW parts temperature profile customization possible
- No users management
- Limitation in failure net analysis (no editing of effects by Safety Goal)
- Max 50 rows reports