

SSA-811403: Multiple File Parsing Vulnerabilities in Solid Edge before V223 Update 7

Publication Date: 2023-08-08
Last Update: 2023-08-08
Current Version: V1.0
CVSS v3.1 Base Score: 7.8

SUMMARY

Solid Edge is affected by multiple memory corruption vulnerabilities that could be triggered when the application reads specially crafted files in various formats such as DFT, PAR or PSM format. If a user is tricked to open a malicious file with the affected application, an attacker could leverage the vulnerability to crash the application or execute arbitrary code.

Siemens has released an update for Solid Edge SE2023 and recommends to update to the latest version.

AFFECTED PRODUCTS AND SOLUTION

Affected Product and Versions	Remediation
Solid Edge SE2023: All versions < V223.0 Update 7	Update to V223.0 Update 7 or later version https://support.sw.siemens.com/ See recommendations from section Workarounds and Mitigations

WORKAROUNDS AND MITIGATIONS

Siemens has identified the following specific workarounds and mitigations that customers can apply to reduce the risk:

- Avoid to open untrusted files from unknown sources in Solid Edge

Product-specific remediations or mitigations can be found in the section [Affected Products and Solution](#). Please follow the [General Security Recommendations](#).

GENERAL SECURITY RECOMMENDATIONS

As a general security measure, Siemens strongly recommends to protect network access to devices with appropriate mechanisms. In order to operate the devices in a protected IT environment, Siemens recommends to configure the environment according to Siemens' operational guidelines for Industrial Security (Download: <https://www.siemens.com/cert/operational-guidelines-industrial-security>), and to follow the recommendations in the product manuals. Additional information on Industrial Security by Siemens can be found at: <https://www.siemens.com/industrialsecurity>

PRODUCT DESCRIPTION

Solid Edge is a portfolio of software tools that addresses various product development processes: 3D design, simulation, manufacturing and design management.

VULNERABILITY CLASSIFICATION

The vulnerability classification has been performed by using the CVSS scoring system in version 3.1 (CVSS v3.1) (<https://www.first.org/cvss/>). The CVSS environmental score is specific to the customer's environment and will impact the overall CVSS score. The environmental score should therefore be individually defined by the customer to accomplish final scoring.

An additional classification has been performed using the CWE classification, a community-developed list of common software security weaknesses. This serves as a common language and as a baseline for weakness identification, mitigation, and prevention efforts. A detailed list of CWE classes can be found at: <https://cwe.mitre.org/>.

Vulnerability CVE-2023-39181

The affected application contains an out of bounds write past the end of an allocated buffer while parsing a specially crafted PAR file. This could allow an attacker to execute code in the context of the current process.

CVSS v3.1 Base Score	7.8
CVSS Vector	CVSS:3.1/AV:L/AC:L/PR:N/UI:R/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C
CWE	CWE-787: Out-of-bounds Write

Vulnerability CVE-2023-39182

The affected applications contain an out of bounds read past the end of an allocated structure while parsing specially crafted DFT files. This could allow an attacker to execute code in the context of the current process.

CVSS v3.1 Base Score	7.8
CVSS Vector	CVSS:3.1/AV:L/AC:L/PR:N/UI:R/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C
CWE	CWE-125: Out-of-bounds Read

Vulnerability CVE-2023-39183

The affected applications contain an out of bounds read past the end of an allocated structure while parsing specially crafted PSM files. This could allow an attacker to execute code in the context of the current process.

CVSS v3.1 Base Score	7.8
CVSS Vector	CVSS:3.1/AV:L/AC:L/PR:N/UI:R/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C
CWE	CWE-125: Out-of-bounds Read

Vulnerability CVE-2023-39184

The affected applications contain an out of bounds read past the end of an allocated structure while parsing specially crafted PSM files. This could allow an attacker to execute code in the context of the current process.

CVSS v3.1 Base Score	7.8
CVSS Vector	CVSS:3.1/AV:L/AC:L/PR:N/UI:R/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C
CWE	CWE-125: Out-of-bounds Read

Vulnerability CVE-2023-39185

The affected applications contain an out of bounds read past the end of an allocated structure while parsing specially crafted PAR files. This could allow an attacker to execute code in the context of the current process.

CVSS v3.1 Base Score 7.8
CVSS Vector [CVSS:3.1/AV:L/AC:L/PR:N/UI:R/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C](#)
CWE CWE-125: Out-of-bounds Read

Vulnerability CVE-2023-39186

The affected applications contain an out of bounds read past the end of an allocated structure while parsing specially crafted DFT files. This could allow an attacker to execute code in the context of the current process.

CVSS v3.1 Base Score 7.8
CVSS Vector [CVSS:3.1/AV:L/AC:L/PR:N/UI:R/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C](#)
CWE CWE-125: Out-of-bounds Read

Vulnerability CVE-2023-39187

The affected applications contain an out of bounds read past the end of an allocated structure while parsing specially crafted DFT files. This could allow an attacker to execute code in the context of the current process.

CVSS v3.1 Base Score 7.8
CVSS Vector [CVSS:3.1/AV:L/AC:L/PR:N/UI:R/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C](#)
CWE CWE-125: Out-of-bounds Read

Vulnerability CVE-2023-39188

The affected applications contain an out of bounds read past the end of an allocated structure while parsing specially crafted DFT files. This could allow an attacker to execute code in the context of the current process.

CVSS v3.1 Base Score 7.8
CVSS Vector [CVSS:3.1/AV:L/AC:L/PR:N/UI:R/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C](#)
CWE CWE-125: Out-of-bounds Read

Vulnerability CVE-2023-39419

The affected applications contain an out of bounds write past the end of an allocated structure while parsing specially crafted DFT files. This could allow an attacker to execute code in the context of the current process.

CVSS v3.1 Base Score 7.8
CVSS Vector [CVSS:3.1/AV:L/AC:L/PR:N/UI:R/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C](#)
CWE CWE-787: Out-of-bounds Write

ACKNOWLEDGMENTS

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- Rocco Calvi from TecSecurity for reporting the vulnerabilities CVE-2023-39187, CVE-2023-39188 and CVE-2023-39419
- Bool from YunShangHuaAn for reporting the vulnerabilities from CVE-2023-39181 to CVE-2023-39186

ADDITIONAL INFORMATION

For further inquiries on security vulnerabilities in Siemens products and solutions, please contact the Siemens ProductCERT:

<https://www.siemens.com/cert/advisories>

HISTORY DATA

V1.0 (2023-08-08): Publication Date

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