Secure Settings Document

Revision

Version 3
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SME

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Abstract

This document describes the process to identify, select and apply security settings to tools used to build the product software.

Group / Owner

Security / Security Architect

Motivation

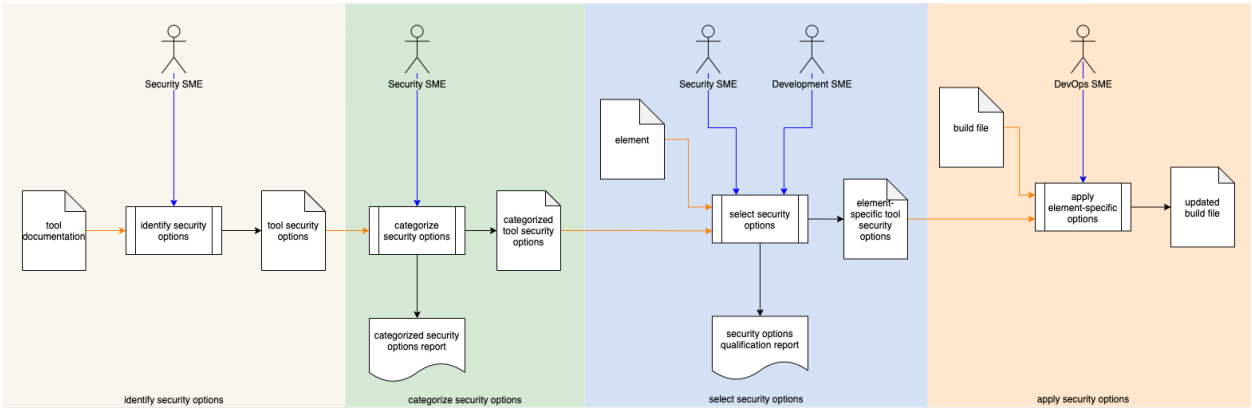
This document is motivated by the need to ensure that the software is built with tools whose security settings are based on security best practices. This is necessary given the nature of safety-critical, cyber-physical systems, subject to certifications such as **ISO 21434** and **ISO 26262**.

License

Overview

The most secure application can be compromised because of poorly chosen tool settings. Such configuration errors may be in access control, database management, cryptographic material handling, or communication tools. Security settings must be chosen to ensure the appropriate level of security for the intended task.

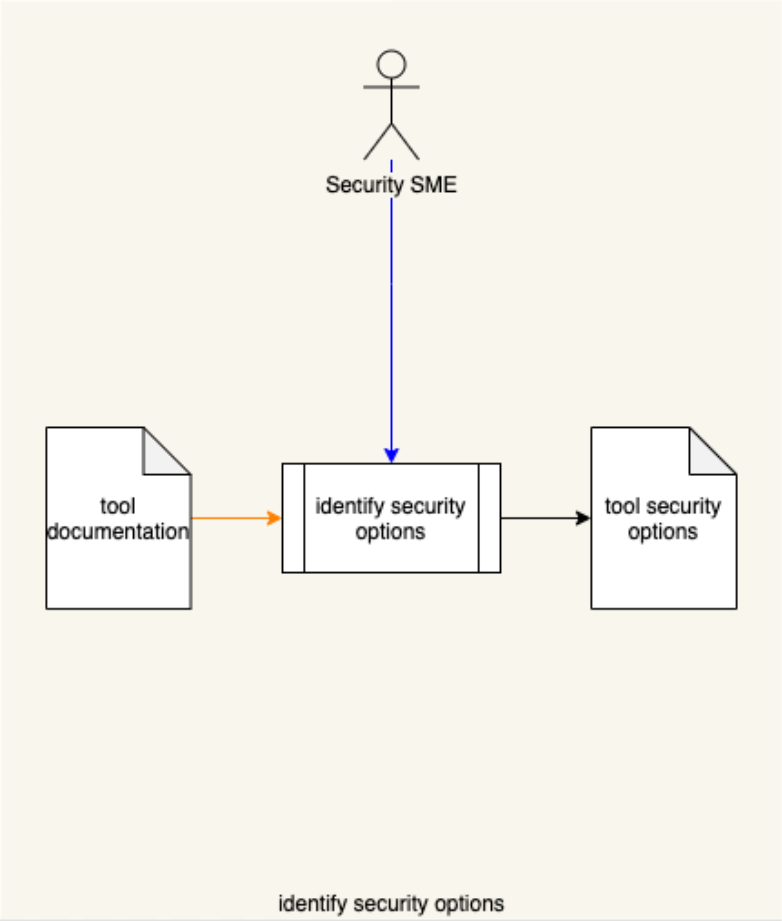
The following diagram illustrates the process to be used:



Process

Identify Security Options

Inputs	Tool documentation
Outputs	Tool security options
Participants	Security SME



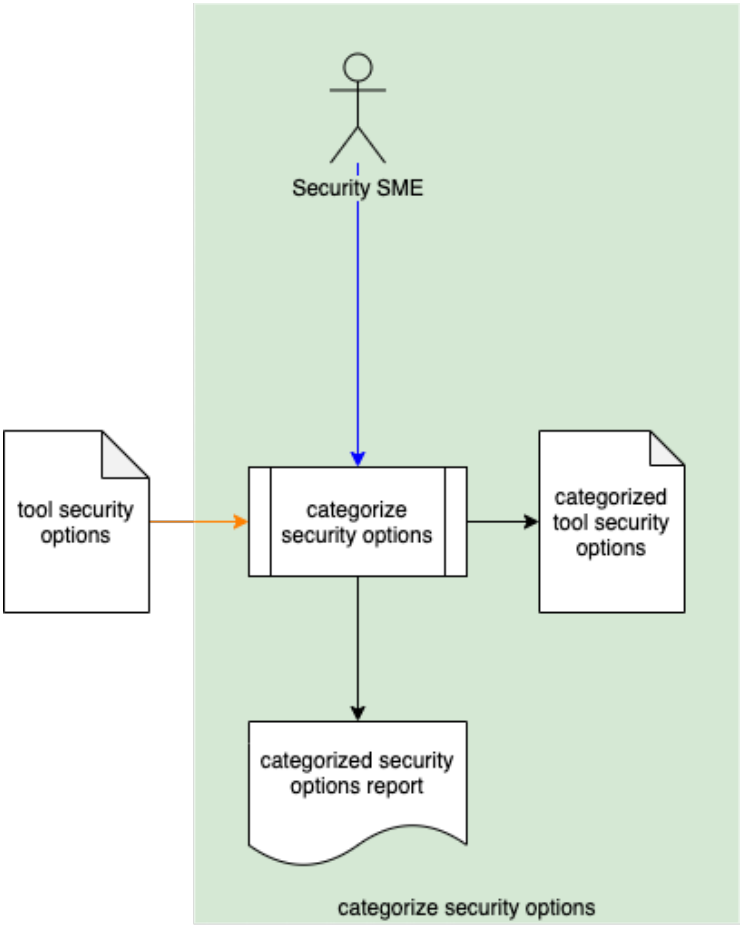
The Security SME reviews the **Tool Documentation** and identifies the security options. A **Tool Security Options** list is generated.

The **Tool Security Options** is a list of 3-tuples. The values of the tuples are as following:

- Option
- Description of the option
- Security relevance

Categorize Security Options

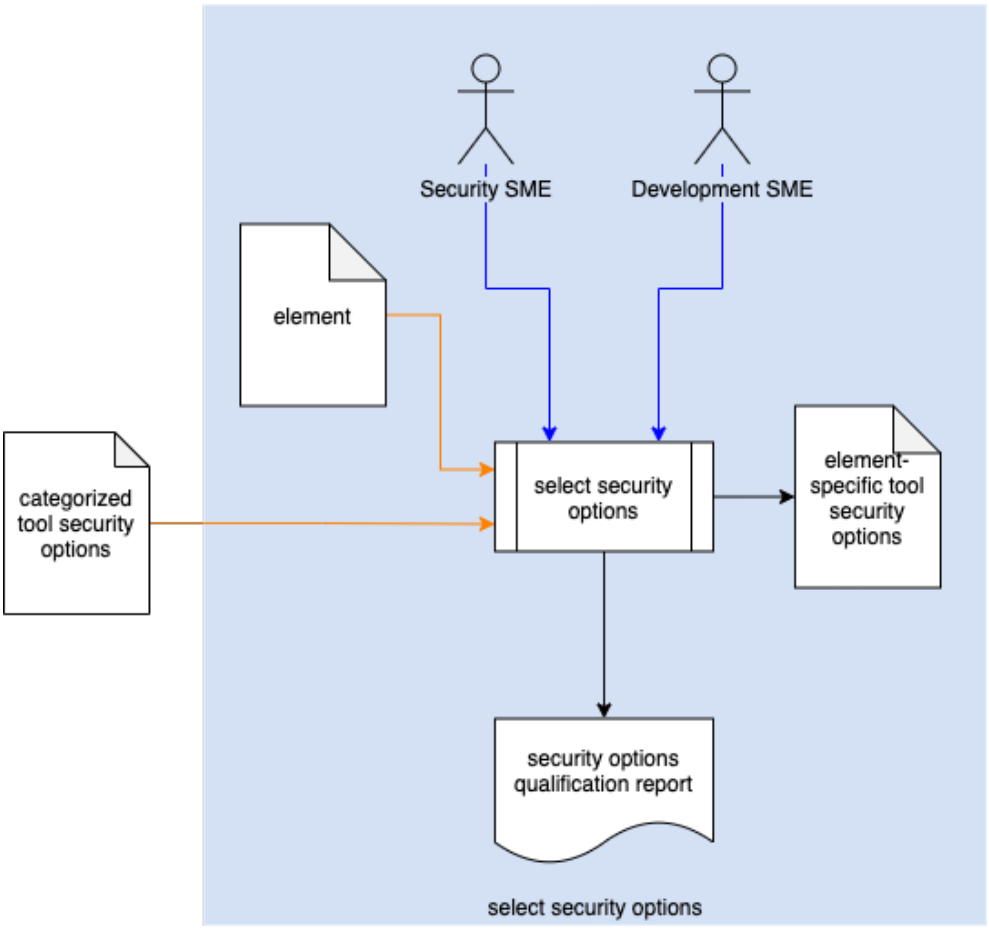
Inputs	Tool security options
Outputs	Categorized tool security options
Participants	Security SME



Using the **Tool Security Options**, the Security SME assigns each option a security priority category. A **Categorized Tool Security Options** list (organized by category) is generated. A **Categorized Security Options Report** is generated.

Select Security Options

Inputs	Element Categorized tool security options
Outputs	Element-specific tool security options
Participants	Development SME Security SME

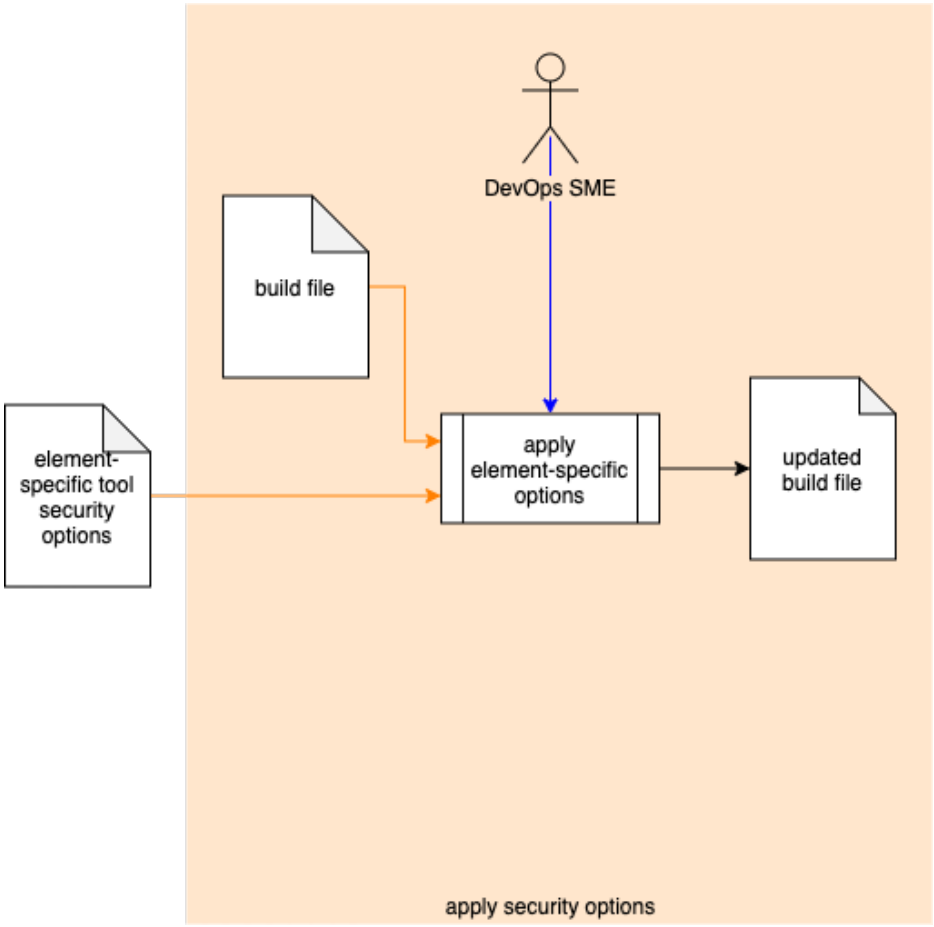


Using the **Categorized Tool Security Options** and **Element** under consideration, the Security SME and Development SME select applicable security options to be applied to the **Element**. An **Element-specific Tool Security Options** list is generated. A **Security Options Qualification Report** is generated.

Note: If a security option is not used, the justification for not selecting it must be documented.

Apply Security Options

Inputs	Element-specific tool security options Build file
Outputs	Updated build file
Participants	DevOps SME



Using the **Element-specific Tool Security Options** and **Build File**, the Dev Ops SME applies the selected settings to the appropriate section of the **Build File**. An **Updated Build File** is generated.

References

1. **NIST SP 800-128 Guide for Security-Focused Configuration Management of Information Systems**
   https://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-128.pdf
2. **Categorized Security Options Report** (AVCDL tertiary document)
3. **Security Options Qualification Report** (AVCDL tertiary document)