Design Showing Security Considerations

Revision

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SME

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Abstract

This document details the process used to determine the applicability of cybersecurity requirements to product elements under consideration.

Group / Owner

Development / Software Developer

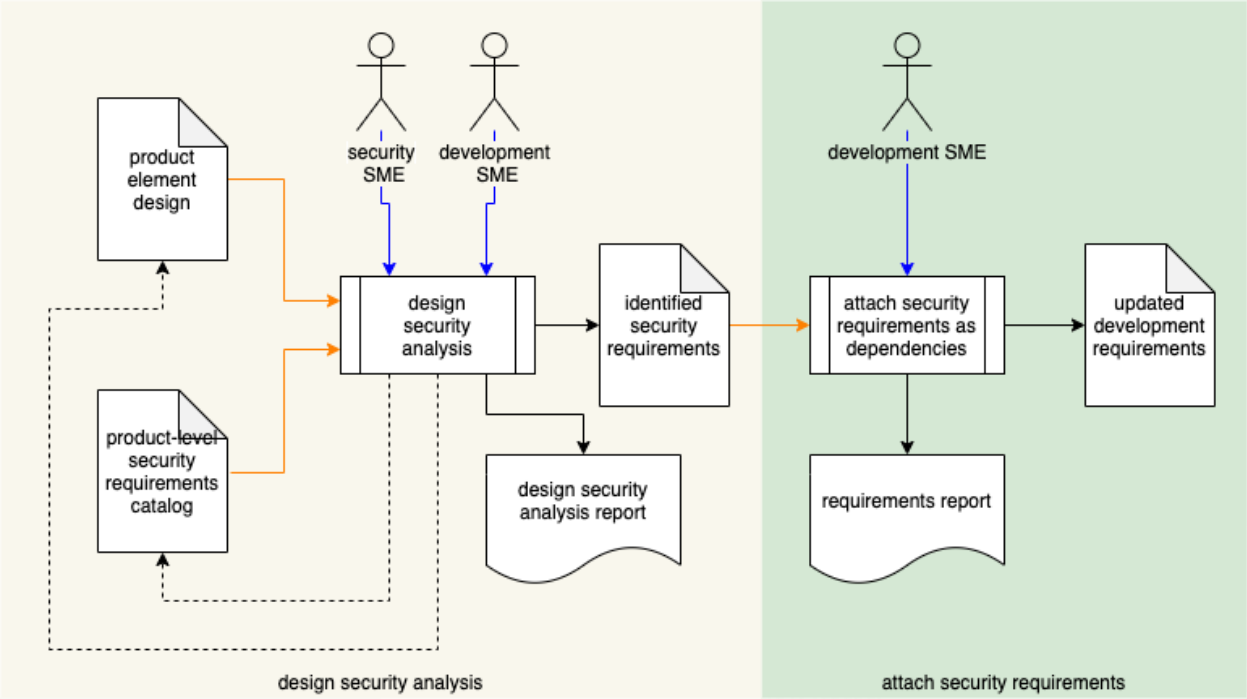
Motivation

ISO/SAE 21434 mandates that cybersecurity requirements be established for all cybersecurity-relevant items of a product.

License

Overview

The following diagram illustrates the process to be used for associating cybersecurity (non-functional) requirements with product element's functional requirements:



Since requirements are tracked in a requirement tracking system, traceability is established through its use.

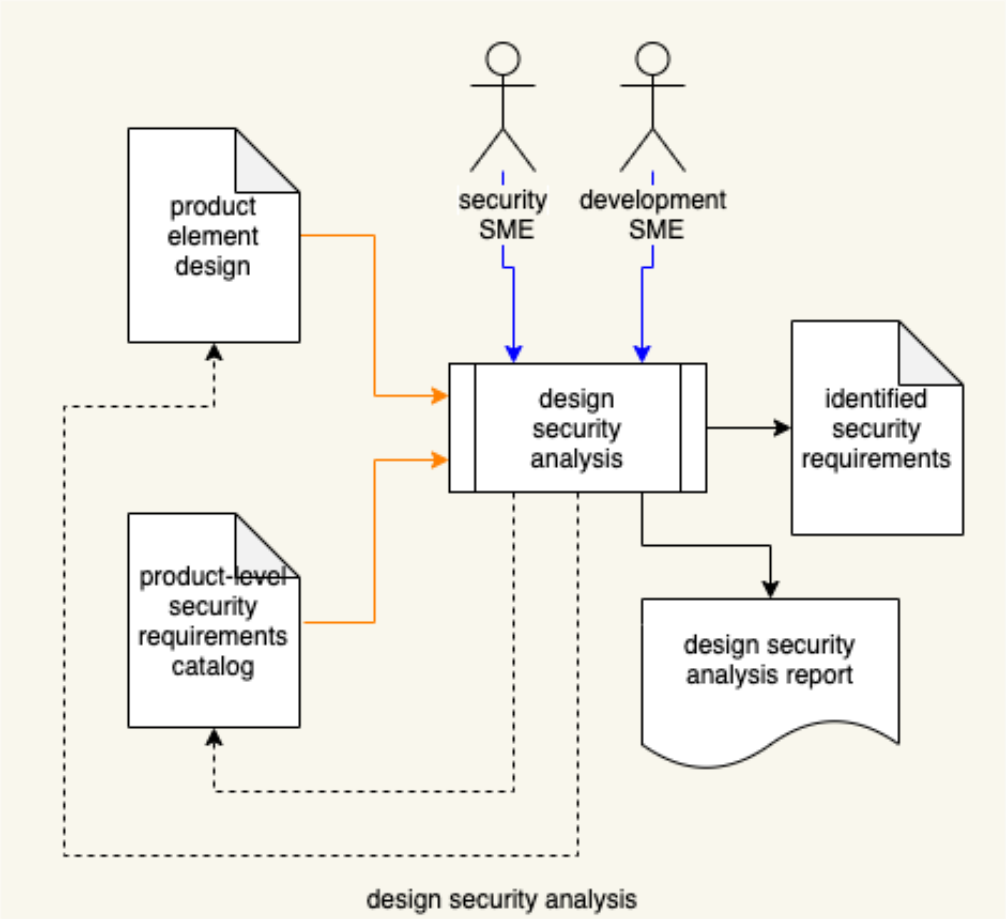
This will support for the following:

- Verification of security consideration prior to development
- Information for V&V activities
- Refinement of the cybersecurity threat model
- Verification of implementation of security considerations

Process

Design Security Analysis

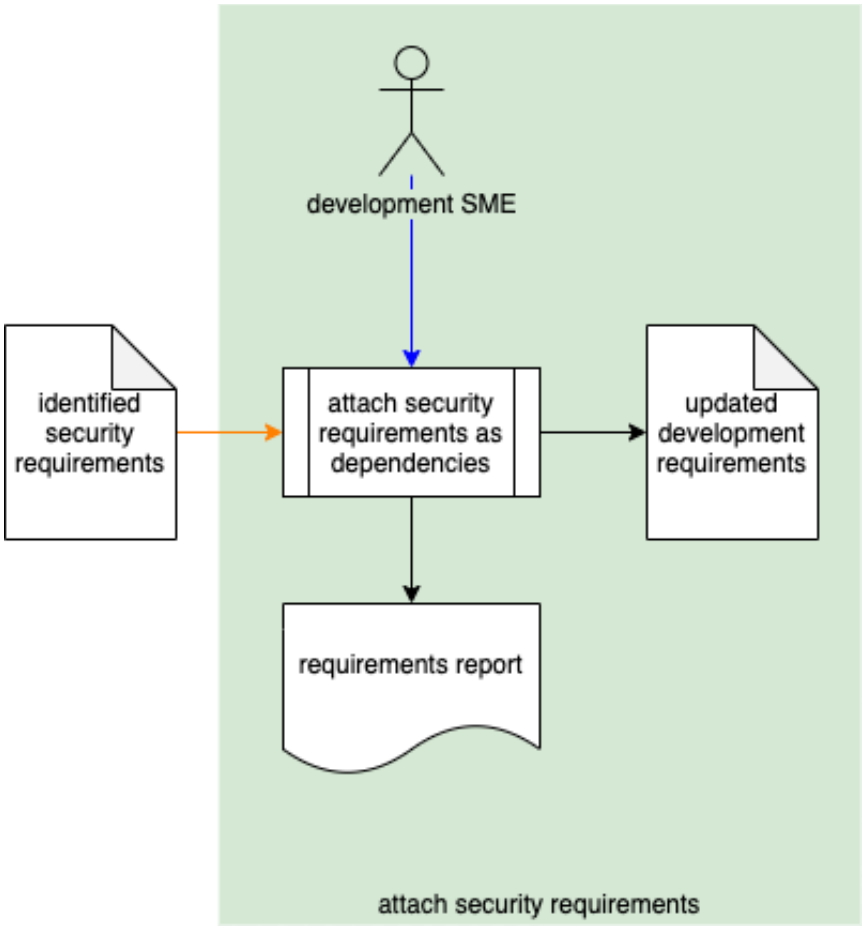
Inputs	Element development design Product-level security requirements catalog
Outputs	identified security requirements
Participants	Security SME Development SME



A **Development SME**, working in conjunction with a **Security SME**, will review the product element's design and identify applicable requirements from the product-level cybersecurity catalog [1]. The **Security SME** will generate a **Design Security Analysis Report**. Should deficiencies in either the **Element Development Design** or the **Product-level Security Requirements Catalog** be identified, updates will be made. The design security analysis should consider the best practices described in **Secure Design Principles** [2].

Applicability Analysis

Inputs	Identified security requirements
Outputs	Updated development requirements
Participants	Development SME



The Development SME will attach the identified (non-functional) security requirements to the applicable product element functional requirements as a strict dependency. This results in an updated set of development requirements. A **Requirements Report** is produced.

Note: Additional artifacts may be generated from the requirement tracking system as needed for audit purposes.

Notes

1. The global cybersecurity requirements catalog is a set of cybersecurity requirements based on a gap analysis of existing cybersecurity requirements viewed through the lens of the **Security Requirements Taxonomy**. This global catalog serves as the basis for the product-level catalog, which is tailored to the product during the requirements phase. It is this specialized catalog referenced here.

References

1. **Security Requirements Taxonomy** (AVCDL secondary document)
2. **Secure Design Principles** (AVCDL secondary document)