

Smart Connections

A central system architecture is the basis for the activities of everyone involved and helps keep records of those activities during product and process development. It simplifies teamwork, supports internal development processes and enables the validation and verification of all requirements.

The methodology in e1ns.architect makes it possible to construct a system architecture model systematically and extremely quickly. Requirements for the system and/

or customer wishes are analysed and components that can be used to meet them are identified. This mutual process between formulating requirements and selecting components for implementation automatically builds up a system structure.

The division into individual, independently realisable units/elements can be portrayed as a hierarchical tree. The depth of analysis also includes company production processes and components produced by suppliers.

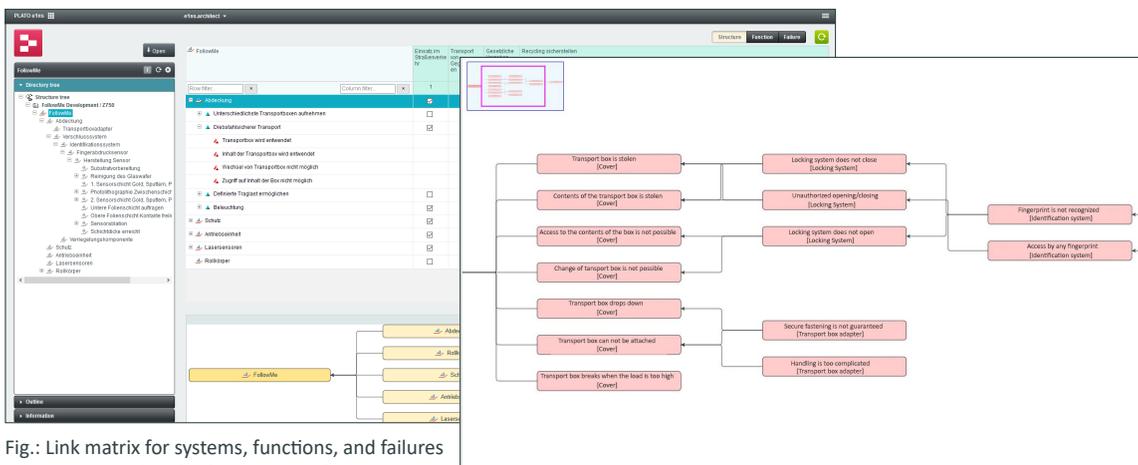


Fig.: Link matrix for systems, functions, and failures as well as visualization as a net diagram.

Functions and Benefits of e1ns.architect

- Customer-oriented product planning
- Requirement analysis and detailed specifications
- Building a system design
- Function and behaviour specification
- Analysis of system down-time, failures and effects
- Visualization of relationships with networks for systems, functions and errors
- Linking product requirements with production processes
- Formulation of safety functions (Functional Safety)
- System analysis using QFD methodology (Quality Function Deployment)
- VDA-compliant working procedure

Primary Focus and Functions of e1ns.architect

System Design, Requirements, and Specifications

- The combination of systematic analysis (link matrix) and the visualization of relationships (nets) is a method that quickly provides robust results.
- Requirements are specified in detail and linked to the elements that are responsible for their implementation. Each requirement is validated (link to the DVP&R).
- A discipline and solution independent representation of the overall system is used as the basis for all further activities.
- All areas in product and process development work on the same system design and contribute to its completion by integrating their specific requirements, analyses, and data.

Functional Relations and Failure Analysis

- Functional relationships result automatically from the system design and are visualized as nets.
- The function net shows how the requirements are related to the implementation. It shows, e.g. the influence of a process step on the product functionality.
- The failure net automatically fills in the corresponding FMEA forms with failures, causes, and effects at all system levels.
- For potential failures, safety functions are defined and traceably linked.
- Each function is checked for non-compliance, which leads to the creation of the failure net. During development and in case of complaints, the problem causes need to be identified, and it is possible to see which further problems could arise elsewhere as a consequence.

The Central System Architecture for Projects, Documents, and Tasks

- e1ns.architect supplies a central structure for all activities, creates all project and product documentation, and generates all verifications needed in product and process development. Consistency, transparency, currency, and traceability provide security during day-to-day work and during audits.

