

Model-based System Development

With e1ns.aspects, developers use a visual representation to design a system/product. The intuitive and systematic approach of e1ns.aspects automatically builds the system structure, which is then used as a basis for all further activities in the product development process.

Different areas can work on a common system representation and extend the system model by adding various aspects. This means the functional, mechanical, electrical, or electronic behavior of the system, for example, are described at a central location that is accessible to everyone.

Transparent development processes, a common understanding of the system, and good cooperation in a network form the basis for fast and economical product development.

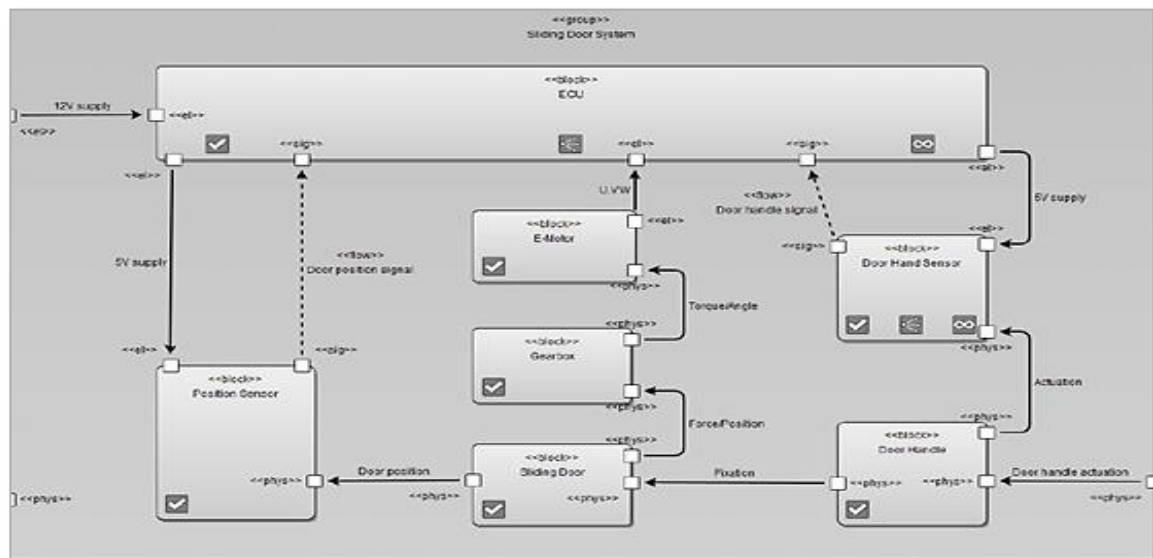


Fig.: The system and its behavior are described in a model

Application and Use

- Visual creation and analysis of system designs
- Modeling of system behavior
- For requirements management purposes
- Transparency in complex relationships
- Uncomplicated operation using a web browser
- Based on the SysML (System Modeling Language) standard
- For use as a main project document and to ensure new project members can get up to speed quickly
- Also suitable for the creation of block diagrams

Primary Focus and Functions

Aspect-oriented engineering

- Any view of a system/element can be created to describe its behavior according to various aspects.
- This means each engineering discipline can have the system representation it needs - mechanical, electronic, etc.
- The central availability of all aspects simplifies decision processes in development.

Integration in the product development process (PDP)

- Modeled structures are automatically converted to a tree view.
- The directory tree is used as the main product representation to conduct further analyses.
- The people involved in the project operate based on the structure and provide the specifications (technical/functional specification), risk or hazard analyses, DVP&R's, etc., for example, depending on their area of responsibility.

Collaboration

- The common system representation enables and promotes collaboration.
- A graphic model provides project members with a simple introduction to the architecture of a system.

Technology

- It can be started immediately, and no training in model development is necessary.
- A current standard in systems engineering is used as the work method. SysML (Systems Modeling Language) is a standardized extension of UML (Unified Modeling Language) for the modeling of complex systems.

Easy to use

- Simple, intuitive, and in the web browser.
- The graphic interface displays all elements of a system.
- Elements are created to build a system or existing elements are simply dragged into the interface and dropped at the desired location.
- A system can be divided into any number of levels (additional worksheets).
- Elements are connected if they depend on or have a mutual influence on each other.
- A connection between elements can have properties (force, signal, ...).
- Photos and images for the elements are displayed directly.

Networked with other Engineering Methods

As a central tool for the development, description, and monitoring of a system in the product development phases, e1ns.aspects is networked with other methods available in the PLATO methods toolbox:

- Requirements Management
- QFD (Quality Function Deployment)
- Functional Safety
- Risk / Hazard Analysis
- DRBFM
- Design Verification