

System design

Best practice spotlight



Modular architecture facilitates design reuse and allows firms to rapidly introduce product variations specific to a customer, market or region.

Do you steadily improve system design while optimizing system, subsystem and part reuse?

Imagine if every product design started from scratch and you had to:

- Reinvest all the time, costs and resources required for complex products consisting of many systems and subsystems
- Identify and track again all customer needs and regulatory requirements
- Determine, codify and test once more all technical specifications

There's a better way: *Modular architecture* allows design teams to build new products based on elements that can be replaced or added to existing product designs, without adversely affecting attributes of the overall design. Modular architecture facilitates design reuse and allows firms to rapidly introduce product variations specific to a customer, market or region.

A *generic product platform* is a new design's starting ground. With generic product platforms, manufacturers establish standard designs upon which to create product structures and insert optional elements (new or existing parts) to create product variations. Platforms also should:

- Include rules for incorporating options (i.e., select from a predefined list)
- Enforce mutual exclusivity between options
- Require the inclusion of other options not necessarily specified by the user (i.e., option A must always accompany option D; if option D is selected, then option A also is included within the design)

Platform CAD structure management allows design teams to relate product structure and CAD assembly structure to support efficient modular platform development, visualization and variant generation. This allows design teams, customers and suppliers to readily relate CAD data to systems and subsystems in a standardized manner. For example, designers can build a design from the “top down,” starting with final design and pushing product structure changes back toward CAD edits.

Do you reuse systems and subsystems? Or do you start from scratch?

To learn more about what your company can do to improve system design, visit:

PTC.com/appserver/mkt/bi/home.jsp?&k=3978

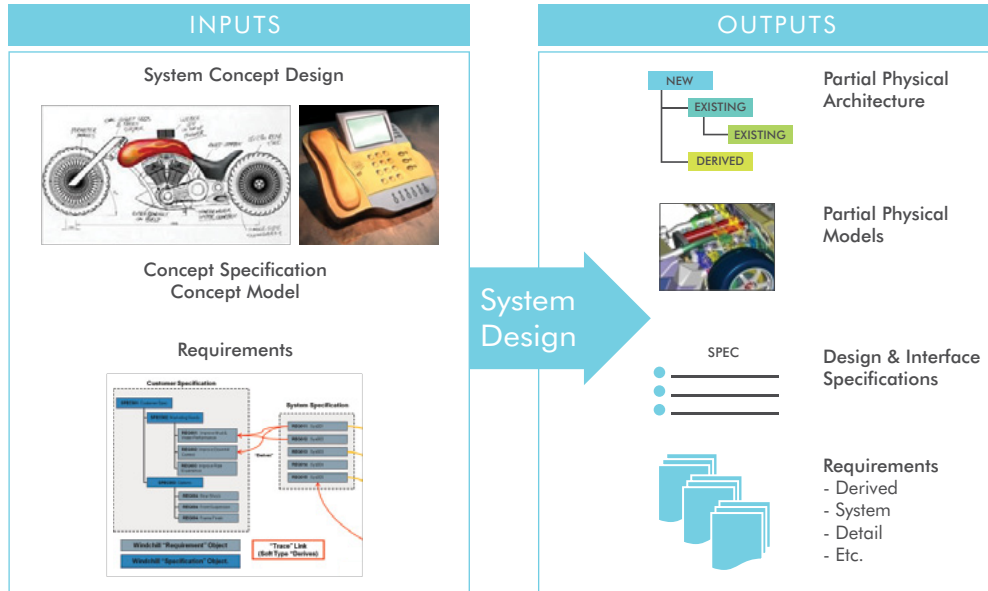


Figure 1: System design is the process of developing the functional and physical architecture, model of the product, associated specifications and derived requirements.

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