**Product Overview**

As products become increasingly complex with costly mechanical, electrical, and software capabilities, customers are demanding products that fulfill their unique needs at the lowest possible cost. To stay ahead of the latest innovations and market trends, companies must transition from traditional design processes to an approach that supports the definition of conceptual product architectures for highly variable configurations.

Unfortunately, many companies today have no simple mechanism for designing products that provide high market variation with technical modularity and to control costs. With ENOVIA® Variant Configuration Central™, companies can define conceptual product definitions that are capable of re-use across a multiple series of products, satisfy market specifications, and provide many possible optional capabilities. These conceptual product definitions are used as a framework for defining variant products that are configurable and drive the generation of design bills of materials. As a result, companies can expedite the design process and lower costs while still meeting customer demands.

ENOVIA Variant Configuration Central enables companies to manage the conceptual and commercial aspects of their products. System engineers and product planners are able to define a portfolio of products and features with configuration options based on specific customer and market requirements. Companies can improve their product introduction process and increase reuse by:

- Bridging the gap between marketing requirements and engineering
- Utilizing common modules across multiple product lines and
- Delivering the right products to market as quickly and efficiently as possible

ENOVIA Variant Configuration Central effectively implements system engineering standards throughout the product development process, allowing companies to:

- Connect product marketing, system engineering, design engineering and manufacturing
- Manage products that meet market, customer, and product launch criteria
- Define product features based on customer needs, market shifts, and technology innovation
- Improve part reuse and minimize feature proliferation with modular product definitions
- Improve profit by managing variant products as bundled offerings.

**Product Highlights**

**Product Portfolio Definition**

ENOVIA Variant Configuration Central organizes and manages a company's portfolio of products. Product lines and model hierarchies organize a company's family of products. Product lines manage a library of mandatory features and rules without compromising organization security. Models and products inherit mandatory features and rules defined and managed by product marketing at the product line level.

**Product Planning**

Before development starts, product managers plan product releases (“product revisions”) that meet market demands and introduce new technologies that provide competitive advantages. With ENOVIA Variant Configuration Central, product managers innovate during the product planning activities by indentifying the list of candidate features that need to be committed, planned, and developed in a product release. A logical product structure for each product release is defined containing all possible variations. A product release is used as a platform to introduce new variant products with specific capabilities that downstream product sales can configure using marketing options (e.g., color, country of sale, etc.).

**Key Customer Benefits**

- Rapidly introduce a family of variant products to market using a logical product structure that allows the reduction in product diversity while still fulfilling market demands.
- Maximize the number of valid configurations available to the market.
- Increase customer acceptance by eliminating invalid product configurations early in the sales process.
- Optimize the design process of highly variant products by allowing design engineers to quickly create an engineering bill-of-material from engineer-to-order business models.
- Maximize part reuse by controlling feature proliferation.
Product Highlights (continued)

Product Architecture/Product Decomposition
System Engineering can define a logical product structure based on a hierarchical (skeleton) structure used to combine solutions that derive a family of variant products. By applying marketing variation and rule-based conditions to the logical features, system engineers can increase the usage of common parts between products. At the same time, system engineers are given advanced productivity tools to help minimize feature proliferation. Conceptual design activities allow system engineers to relate physical parts that fulfill each feature’s technical and marketing requirements. Companies can now streamline the design process, maximize part reuse, and minimize feature proliferation.

Mandatory Feature Compatibility Rules (Global Rules)
Marketing and system engineering can define and manage feature compatibility rules at any level of the product structure. System engineers can define a single compatibility rule at the product line level and force it to be used by lower level products. This capability is known as a mandatory compatibility rule. Product line mandatory rules are visible by lower level products. This new information allows system engineers to make informed decisions when defining compatibility rules within their products.

Product Variants
The logical product structure is used as a framework to introduce a family of related variant products with specific technical and marketing options. Product sales can then further configure the variant product with customers. Product variants allow companies to reduce diversity by controlling the variations of products that are available for configuration. System engineering controls product variant content and options by selecting the specific technical and marketing features available for configuration that meet specific requirements (e.g., target sales price, target region, or targeted consumers). During the product variant definition, system engineers use the Product Compatibility Matrix to select features and define their usage criteria as “Mandatory (M),” “Standard (S),” or “Optional.”

Product Configurator
ENOVIA Variant Configuration Central helps companies with highly configurable products meet market diversity requirements. Sales engineers can meet the unique needs of their business customers using the configurator to define new products. For a build-to-market business model, system engineers can pre-define product configurations that are published in a company’s product catalog. In addition, system engineers can create partial configurations for the products they are responsible for that are available to cross functional groups to further define. In order to maximize the re-use of configured accessories and service parts, engineers can create product configurations at any level of the feature hierarchy. When product configurations are created at the sub-feature level, a bill of materials can be generated and submitted to engineering for verification and release. The newly generated top level part assigned to the feature’s configuration is back-annotated and reused with the feature’s part table.

BOM Generation
ENOVIA Variant Configuration Central enables system engineers to define a feature architecture that is used as a framework for generating an engineering bill of material (EBOM) for engineering to order (ETO) business models or a precise bill of material (PBOM) for build-to-order business models. A BOM Preview dialog provides users the ability to preview selected parts based on the selected marketing features and evaluated part inclusion rules.

Build Management
As product configurations are ordered, product planners and manufacturing planners need the ability to plan, manage and structure the builds, also known as units, which are to be delivered to specific customers. The product planner can assign serial numbers, unit numbers and manufacturing sequence numbers to each build that needs to be manufactured for each product configuration. The manufacturing planner can then define the composition of the manufactured serialized units that are installed on the unit.

Issue Resolution and Change Management
As products enter into the development phase of their project, changes are inevitable but too many changes are cost prohibitive. A cross-functional change process helps system engineers systematically manage and respond to feature changes. ENOVIA Variant Configuration Central provides a choice of change management processes that provide immediate visibility to change requests while maintaining integrity of the original reported problem to the internal resolution.

The Role of ENOVIA V6 and PLM 2.0
ENOVIA Variant Configuration Central supports PLM 2.0, product lifecycle management online for everyone, and the ENOVIA V6 values: global collaboration innovation, single PLM platform for intellectual property (IP) management, online creation and collaboration, ready to use PLM business processes, and lower cost of ownership.