



Modularization

High Flexibility with Low Engineering Costs

The adoption of reusable modules enables you to react to customer requirements with higher flexibility and lower engineering costs. In hardware and software, machine modules or mechatronic function units can be used for different machine variants virtually unchanged. In many cases, they can even be employed for the next machine generation.

The Problem

Machine and plant construction is increasingly confronted with requirements from the market regarding individual machine configuration, custom-made concepts, and embedding of subsystems. This challenge cannot be met with a purely mechanical construction kit anymore because components are getting more and more intelligent. In the light of an increasing electronics portion and especially the increasing software portion, machine constructors need concepts for countering the rise of engineering costs and at the same time allowing for quick reaction to customers' needs.

The Method

Especially in plant construction and the manufacture of special purpose machinery, no two plants or machines are the same. But a construction kit oriented system needs reusable modules which can be customized with options

if necessary. The first step to modularization of a plant is the analysis of existing systems and the equipment used therein (actuators and sensors). The sensor-actuator list is not only needed for structuring and documenting the functional requirements of a machine, but is also the basis for standardizing and optimizing the component groups.

A modular design is based on a skeletal structure with variants. Thus, in every department, earlier work needs to be analyzed regarding similarities and differences in order to define and structure modules in interdisciplinary cooperation and to develop variants. Based on the variant-and-option concept to be developed, the individual disciplines must partly restructure or totally rewrite their engineering documents. In this way, modules are defined for every department which can be saved into a construction kit system as parts of a mechatronic library.

The Solution

We help you to successively develop a complete mechatronic structure of your product portfolio on the basis of already existing construction kit elements. Subsequently, we can support you in building a mechatronic library. With this foundation, you can develop order-specific solutions very quickly and flexibly.