

Optimally Supported

Supporting services

By Peter Weidenhammer

— The spectrum of expertise offered by Porsche Engineering covers the entire product development process. But the know-how of the engineers is increasingly in demand for supporting services as well. The reason is that dealing with the constantly growing complexity of such tasks sometimes requires additional capacities. In such cases, Porsche Engineering assumes the role of a partner that maintains an overview of activities in the respective field of supporting services, provides the requisite expertise and performs the task in its entirety.

Porsche Engineering not only performs pure engineering work but also takes on additional tasks and qualifies the respective component or product according to the applicable requirements. The customer can therefore focus on the core development work that is its actual area of expertise. Farming out supporting tasks makes the customer's job easier. Porsche Engineering also offers these types of services to industries outside of the automotive sector and is flexible in providing the services—development and qualification work is done according to the required standards.

The portfolio of supporting services is divided into various thematic areas ranging from project and supplier management to various planning activities and assessing compliance with legal regulations.

In the project management area, the engineers support the planning and execution of tasks. They concentrate not only on the development of new technologies, but also pay close attention to the frameworks in which the projects take place. Together with clients, they draw up detailed plans and reliably monitor and optimize factors such as cost, quality, and milestones. Implementation is closely tied to the customer's product development process.

With regard to procurement and supplier management, the engineering services provider can draw on its many years of experience in Porsche series production; Porsche Engineering knows what it takes to secure a robust supply chain. Porsche Engineering identifies, selects, and audits suppliers and provides expertise if problems arise. It also includes the planning and execution of projects to improve supplier performance and quality assurance for purchased parts. The customer can therefore count on finding the best partners and suppliers for the manufacture of their products.

With years of experience as a series manufacturer of sports cars under our belt, Porsche Engineering is well acquainted with the challenges in production planning as well as production processes and methods. Over the years, the company has always developed successful solutions by creating innovations and making continuous improvements. This knowledge is brought into the design of assembly lines. Beyond the reduction of production times and costs, the focus is also on increasing process security and identifying the potential for improvements.

Having the right materials at the right place at the right time is the key function of logistics. The basis for smooth series production is detailed logistics planning covering all steps of the product development process. Porsche Engineering supports customers in the concept, evaluation and implementation of all logistics processes and thus guarantees a smooth integration process for new developments.

There's a lot of ground to cover before a new development has reached production maturity and production is stable. With regard to launch management and series support, valuable experience from series production can be applied to the customer's processes and establish long-term improvements. Supplier management and cross-departmental quality control, but also tool tracking and work instructions, help ensure a smooth start for a new product in series production.

Adjustments are frequently necessary to achieve perfectly designed products. That's why it's important to establish internal processes for change management which clearly define when a modification can take place and how it must be documented. Customers are supported and advised in this process. To reduce costs and keep delays to a minimum, cross-model collaboration is a fundamental component and one of the goals of optimization.

Failure Mode and Effects Analysis (FMEA) is an established instrument in the product development process for identifying and correcting errors or potential sources of errors at an early stage in the design of products and the associated manufacturing and assembly processes. Due to the distinction between system, design, and process FMEA, Porsche Engineering takes all potential error sources into account. With regard to functional safety (FuSa), the risks associated with the function to be implemented are determined, thus further reducing potential dangers.

In vehicle development, dimensional management is used as a preventive quality assurance method to ensure fulfillment of visual and functional requirements. This also makes it possible to avoid potential problems before they occur. The overriding objective of dimensional management is to achieve high product quality without rework. Together with a reference point system (RPS), this is achieved through precise specifications on functional dimensions and the joint plan. This is then rounded out by tolerance calculations and a ›



three-dimensional tolerance simulation (see also *Porsche Engineering Magazine* 1/2013: “Dimensional Management in Vehicle Development”).

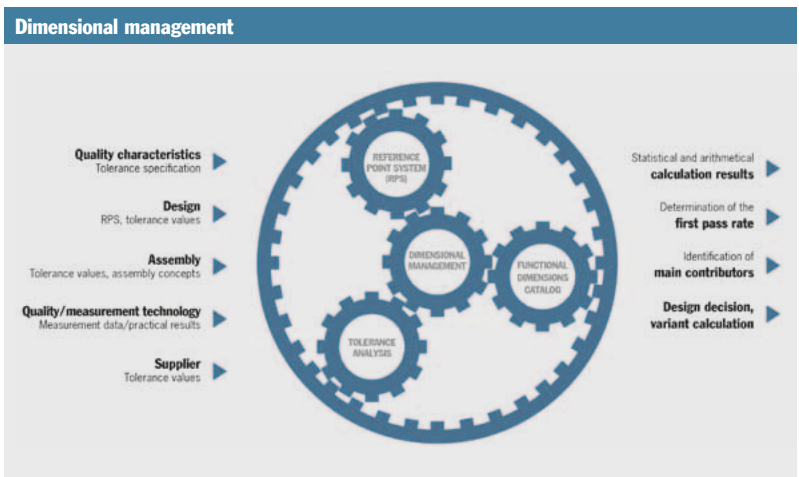
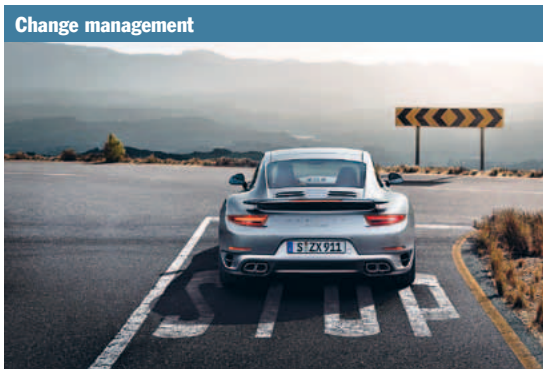
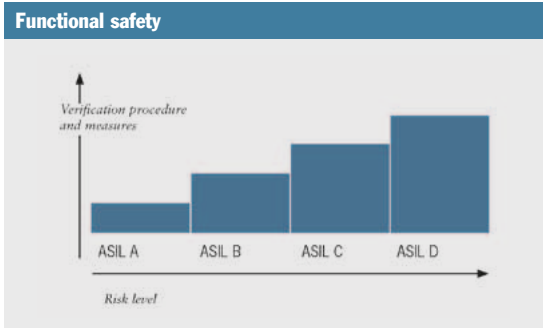
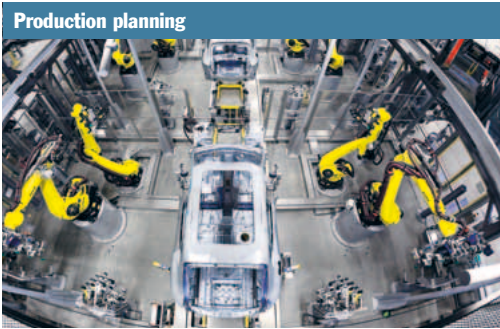
With legal regulations and market demands calling for vehicles with ever lower consumption and emissions, the importance of effective weight management has never been greater. With the intelligent lightweight construction of the current generation of sports cars, Porsche is once again the reference point. An optimal weight assessment depends on recording and evaluating vehicle mass and center of gravity data. The key is to balance opportunities and risks and continually check whether weight objectives are being achieved through the development process.

With the growing diversity of variants and derivative models in vehicle development, the demands on information systems are growing as well. The engineers are familiar with these requirements from a variety of assembly and module developments and approach them with innovative and lean solutions for tasks such as product data management, BOM systems and approval management.

Developments do not simply need to fulfill technical requirements and functional demands, but also comply with additional legal regulations. Porsche Engineering provides not only the expertise to ensure that the products are compliant both in their manufacture and characteristics, but also covers proprietary and patent rights for the developments.

Drawing on its series production experience, Porsche Engineering also handles approval management. Regardless of which stage of development the product is in, this encompasses approval management and tracking and thus comprehensive control of the approval process for components and milestones.

Porsche customers expect not only premium quality, but also exceptional service. The brand is thus an exacting standard for sales and after-sales planning. What that means is that in every development, service concepts are taken into account from the very outset. This ensures that the client’s customers will be satisfied with developments even when servicing is required. ■



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