Abstract

Innovative Design of a Galley Product Platform by applying a new Modularisation Method

Authors: Dipl.-Ing. Henry Jonas, Dipl.-Ing. Thomas Gumpinger, Dipl.-Ing. Christoph Blees, Prof. Dr.-Ing. Dieter Krause

For the airline passenger the factors price, time schedule and service are most important. In terms of service, the cabin interior design becomes more and more important for realising airline-individual cabin interior- and catering concepts. The aircraft galley is an important factor for new concepts to ensure and improve the quality of service for the passenger. In this context, the requirements of the galley design shifted. Besides airworthiness and a load capable design the customer’s satisfaction is driven by further aspects. The airlines ask for customised galleys, which are configurable in terms of operating equipment, product design and functionality. Prior excitement factors such as reliability, lightweight design and design for maintenance became basic requirements nowadays.

Especially in the market segment of VIP-Cabins, an individual design of the galleys is focus of the engineering design process. Nearly every VIP-galley is a unique product, which mostly is an adaption design based on an existing products. Due to the individual design demands, often the customer brings own design ideas or features into the product.

The above described individual product designs, as well from the airline- as from the VIP-market, lead to a high internal complexity for the galley manufacturer. Independently from the vertical range of manufacturing, a large number of different design principles, detail design solutions and single parts lead to likely confusing development and production processes. Additionally the quality assurance process is made more difficult.

The project1 “FlexGalley” contains the conceptual design of a new, modularised aircraft galley platform. Using a new Modularisation Method developed by the Institute PKT, the galley design consists of different component modules, which both provide a standardised platform structure and configurable hat units. The customer can choose of several pre-configured module alternatives for assembling an individual galley product. The overall compatibility allows a combination of the galley modules, which allows implementing the demanded design features and functionalities more easily. Using the modular concept, still it is needed to provide a lightweight-optimised design. In this context, the principle of Integration of Functions applied inside of the modules offers benefits.

The modular product structure transforms the external variety, which is offered to the customer, to a much lower internal variety by using few standardised modules. In this context, Lead User Innovations can directly be used for expanding or adapting the product portfolio of the company.

---

1 funded by the Ministry of Economic and Labour Affairs of the free and hanseatic city of Hamburg and in cooperation with Mühlenberg Interiors GmbH & Co. KG