AEROSPACE Search for life on mars
MACHINING New chips off the old block
INTERVIEW Prof. Werner Granzeier talks about „the cabin of the future“

Restructuring Process

How many suppliers will Airbus take on board in the future?

Power 8-Program: Airbus forces the suppliers to save a volume of 700 million EUR

Special: Cabin
LED and Fiber Optics for open rooms

While aircraft manufacturers try to reduce weight, energy and maintenance costs in their aircrafts, the Airlines try to convince their customers with individual designs combined with highest comfort. Interesting is the combination of LED and Fiber Optics.

Passengers define this expected conveniences in general as good services, ergonomically designed seats and pleasant lighting environments in addition to In-Flight Entertainment systems providing full connectivity to E-mail Services and Internet via WLAN or as plug and play version.

Fiber Optics with advantages
Due to the high qualification requirements and safety standards in the complex environment of an Aircraft the first aircraft manufacturer decided after enormous difficulties to give up all WLAN activities. The hard bit of a successful realization is the handling of the enormous data volume in real time.

The introduction of fibre optics could help substantially to overcome this hurdles.

Therefore, the SCHOTT AG developed a new cable, which is suitable for high security application in combination with sensors as well as for complex Video and Communication Systems in the aviation industry.

Researches have shown that passengers regard this service as standard, but since comfort is more related to emotions rather than technique, the impact of colour and illumination is much greater. Most of human beings perception regarding ambience and sense of space depend on the human eye. Therefore, colours and light effects within the cabin are of vital importance. Additionally, it's possible to establish a clear branding within the cabin for the Airlines.

An important key technology to implement such features are Light Emitting Diodes. Due to their high efficiency, reliability and flexible integration it seems that this technology is the most promising solution in particular for individual requirements with a high degree of customization. In addition to reliability requirements giving illumination solutions with long life, this technology reduces maintenance cycles and maintenance costs.

The high flexibility of these devices stimulates the demand for these products in various industries enormously. Currently, the innovation and development cycles of LED products are comparable with those in the chip industry.

But, like in any other new technology not all problems are solved already. In particular LED aging, colour stability and heat management for aviation applications together with limited space envelopes and weight restrictions are real challenges for the participating industry.

One possibility to avoid this problem is the combination of LED and Fiber Optics, since it is possible to divide the light outlet from the LED and the related heat generation. Due to this availability of a “cold” light source designers are able to create new visible light outlets without neglecting qualification requirements. This opens new areas of applications where products can be created in conjunction with other aircraft interior elements like emergency lighting or even cockpit lighting.

New solutions and added value are created for the airlines

As global player in the area of fiber optics and with the long experience for innovative lighting concepts the SCHOTT AG combines two key competences to create new solutions and added value for Airlines and aircraft manufacturers.