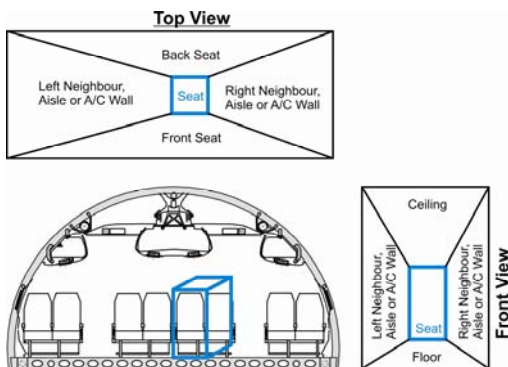


Press release

Holzkirchen,
 December 17, 2009



Picture: Personal environment of a single occupant (top and front view at seat level).

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Individual climate control in aircraft New EU-funded research project »iSPACE« promises higher thermal comfort for passengers

Heat and chill: Many passengers feel uncomfortable during the flight because they find the ambient temperature unpleasant. Another aspect is that there are great differences in human perception with regard to the temperature to feel comfortable. There is a wide range of climate perception due to the fact that the passengers belong to all age groups and come from various climatic regions around the globe. To develop an individual climate system which allows each passenger to control the ambient climate conditions, the project »iSPACE« (innovative Systems for Personalised Aircraft Cabin Environment) was launched by a consortium of ten European research institutions and companies.

A climate which is perceived as thermally comfortable is of significant importance, whether human beings feel well or unwell in the respective environment. At present, however, the temperature in aircraft is regulated by a global control system: The passenger cabin is divided into different zones for ten to 100 passengers each. All passengers of such a zone are thus exposed to the same temperature. Air-conditioning systems used at present have only a few individualized components which can be operated by the passengers themselves, e.g. air jets which can be operated individually and are installed above the passengers' heads.

So far there are no individually operable temperature control systems in passenger cabins of aircraft. It is expected, however, that the installation of personalized control units will reduce the percentage of dissatisfied passengers by up to 10 %. Moreover, air-conditioning systems used so far neither allow the thermal control of surfaces, e.g. seats, interior lining of the cabin and floor nor the compensation of undesired temperature asymmetries. Present solutions generally keep the supply air constant during the flight according to the passenger number. The passengers, however, cannot regulate the intensity or flow of the supply air.

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Therefore, the consortium of the following European research institutions and companies launched the EU-funded project »iSPACE« to realise a personalised thermally comfortable environment for aircraft passengers and thus counteract deficiencies:

- Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung: Fraunhofer Institute for Building Physics IBP (Coordinator)
- Airbus Operations GmbH
- Brno University of Technology
- Contour Premium Aircraft Seating
- EADS Deutschland GmbH - Innovation Works
- Icon Computer Graphics Ltd.
- Medizinische Universität Wien
- Pall Europe Ltd.
- SeaTex AG
- Streit-TGA GmbH & Co. KG

Within the framework of the three-year project engineers, environmental specialists and psychologists of the research partners will develop a system intended to improve the thermal comfort of aircraft passengers by individualized features and sophisticated design tools.

The most significant aim of »iSPACE« is to provide the necessary know-how and innovations for the personalization of the thermal environment in the passenger cabin for aircraft manufacturers and supplier companies. With regard to the thermal comfort in aircraft this development means breaking new ground and is expected to generate the following results: Gaining know-how on the personalization of the passenger environments and the influence on human perception, development of concepts for the personalization of thermal environments of individual passengers as well as their thermal comfort, testing in realistic aircraft environment, development of validated simulation tools and finally development and evaluation of innovative technologies. The purpose is dissemination and exploitation of results and solutions.

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A »Stakeholders' Club« was founded to keep in touch with the stakeholders during the project. Thus, individual stakeholders are able to contribute their own considerations and feedback to the on-going project. The project results will be finally presented to the »Stakeholders' Club«. The club addresses all relevant stakeholders, e.g. airlines, manufacturers, crews and Civil Aeronautics Boards. Regular meetings offer the opportunity to discuss the participants' concerns. The final meeting will take place in the last month of the project duration and will be open to the public.

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