

“The most important innovations are those that change our way of thinking.”

Prof. Dr. Hans-Jürgen Quadbeck-Seeger



the aeras seat project

christine ludeke, principal designer ludekedesign

While a lot of innovation has taken place for FC and BC seats the last years, economy seating has been relegated to small modifications within a basically unchanged framework. As most people fly in this class, we wanted to create a seat that provides real ergonomic benefits. Due to the inherent tight parameters of space, true innovation in economy passenger well-being is a very high challenge. Extensive research in the physical and emotional ergonomics of sitting as well as materials and their inherent characteristics confirmed our premise that real improvement required a clean slate. The human body is not meant to stay static in one position - supposed comfortable postures when held over time end up creating discomfort and can lead to health problems. Key elements counteracting this include principles of active seating and good micro-climate. Using knit technology, we were able to iteratively develop a new type of suspended sitting material to

replace the traditional cushion/cover combination. Engineered zones of various knit elasticities work together and with the body to support it in various positions, thus making it possible to even doze on one's side at 30" pitch. It adjusts to different body shapes and weights, while providing an improved microclimate through its breathable properties. The constant adaptability promotes circulation and reduces pressure points. And, the knit saves up to 2.5kgs of weight per seat place. Clever implementation of new materials and technologies in the frame and backshell lead us to project 8kgs per seat place (ex IFE) in production. Extensive ergonomic testing has confirmed the basic benefits and the aeras knit and flexible knit have met all applicable FAR regulations, including heat release and smoke toxicity. The next step – and where we see the next challenges – is 16g dynamic testing, as the unconventionality of the knit material provides an unknown here as well.