CRYSTAL CABIN AWARD FINALISTS 2024 SHOW THE AIRCRAFT CABIN OF THE FUTURE

News / Manufacturer

Aerospace companies, designers, and engineering teams worldwide are constantly innovating to revolutionise the flying experience. The annual Crystal Cabin Award showcases these exciting visions of how passengers will experience the future of air travel, honouring the best and most creative solutions. The Crystal Cabin Awards expert jury has now selected the finalists for 2024, putting forward 25 entries in 8 categories that offer a fascinating glimpse into the future of flying, from environmentally sustainable cabin walls to accessible onboard entertainment and revolutionary seating concepts.

Cabin Concepts
Each concept selected in this category redefines the boundaries of aircraft cabins. Through a blend of tradition and modernity, the JAL A350-1000 Cabin Interior by **Tangerine Ltd**, realised in collaboration with **Japan Airlines**, **Safran Seats**, and **Recaro Aircraft Seating**, creates an unparalleled flight experience that seamlessly weaves Japanese aesthetics with modern flight comfort to create a harmonious space of tranquillity above the clouds.

The BermudAir Aisle Class Suite, an innovation by **Factorydesign** and **BermudAir**, represents an

avant-garde revolution in business class by offering a suite that combines privacy and luxurious space with a unique aisle concept.

Another finalist in the Cabin Concepts category selected by the jury is the Airspace Cabin Vision 2035+ by **Airbus Operations GmbH**. It focuses on lightweight construction and circular economy to reduce negative environmental impacts with the goal of up to 40 percent lighter cabins and digitally supported, waste-reducing catering concepts.

Cabin Systems
Under the “Cabin Systems” category, pioneers of energy efficiency and spatial flexibility are united. GeniusPOWER Core by **KID-Systeme GmbH** enables constant availability of smart devices above the clouds through intelligent charging options, thus enhancing passenger comfort.

The compact power converter efficiently powers up to nine devices. theCUBE by **Safran Cabin** is a suitable solution for cleanly disposing of food and liquid waste in the galley. The Cube integrates seamlessly into the overall appearance and maintains a hygienic workspace for the cabin crew by activating UV light upon closure to eliminate odours and prevent the growth of bacteria.

Burrana presents RISE Power, an advanced in-seat power supply system that redefines performance. It is notable for its low weight of only 200 grams per seat, enables cost-effective installation without re-certification of the seat, and ensures fast charging of passengers' personal devices.

Health & Safety
In the "Health & Safety" category, the jury has selected three advanced products that enhance safety and accessibility in aviation through innovative solutions.

Safran Passenger Innovations (SPI), in collaboration with **Air New Zealand** and **Virgin Atlantic**, has designed Accessible IFE, an accessible in-flight entertainment product that allows passengers with auditory, visual, cognitive, and motor impairments to enjoy onboard entertainment.

The AirPRO by **Schroth Safety Products** is a passenger lap belt airbag, developed in cooperation with the design studio **Teams** and **DesignBüro Stühmer|Scholz**. It combines an integrated airbag with crash sensor technology under the seat, which quickly activates the airbag in the event of an accident, and is designed for adaptability to different cabin designs.

The Accenture PED safety bag by **Accenture GmbH** is an innovative safety solution for personal electronic devices during flight. It meets the highest standard for such safety devices, ensuring 100% containment of fire, smoke, and toxic gases in case of lithium battery failures.

Passenger Comfort
The wellbeing and comfort of passengers on long and medium-haul flights are elevated by the selected entries in the "Passenger Comfort" category.

The Wellbeing Zone by **Diehl Aviation Hamburg**, in collaboration with **Qantas Airways Ltd**, is an area between the Economy and Premium Economy classes, designed for flights of up to 22 hours. It offers passengers opportunities to stretch and linger at standing spaces, complemented by a self-service station with contactless water dispensers as well as healthy snacks and drinks.

The Signature Seat by **Safran Seats** is a new development in the field of aircraft seats, which guarantees personal space for each passenger through a patented, fixed pre-set backrest architecture and is adjustable for different body types. The seat innovation, suitable for both long

and medium-haul flights, aims to improve comfort in the Economy class while also providing cost-effective solutions for airlines.

The ARISE intelligent comfort system by **Collins Aerospace** is a smart seat comfort mechanism that uses sensor technology and advanced materials to reduce the main disturbances of sleep during flight – body temperature, pressure distribution, and vibration. It automatically adjusts seat position, cushion pressure, and environmental conditions based on real-time data analysis.

IFEC & Digital Services
Advanced connectivity and entertainment solutions revolutionise the way passengers interact with digital services onboard in the "IFEC & Digital Services" category. Air travellers also want to access their emails, send text messages, surf the internet, stream the latest content, or interact with family and friends in real time while onboard. **Intelsat** offers with its Intelsat Multi-Orbit Connectivity improved internet services onboard aircrafts by combining geostationary satellites and low-Earth orbit satellites to enable faster speeds and lower latencies.

The ADAPT system by **Collins Aerospace** allows passengers to control their seat, the in-flight entertainment system, and onboard service using their personal mobile devices, with individual settings being automatically integrated. The platform supports advanced functions such as voice control, American Sign Language gesture recognition, and audio-visual feedback, enhancing accessibility for all users.

FlytEdge, developed by **Thales Avionics**, is the first cloud-based, digital in-flight entertainment solution that enables the integration of web applications and streaming services, as well as real-time updates of software and content. The platform simplifies airline operations and enhances the passenger experience through ongoing innovations and an open architecture.

Material & Components
In the "Material & Components" category, innovative solutions are central, based on advanced manufacturing technologies, sustainable materials, and efficient designs to reduce weight, increase efficiency, and minimise environmental impacts during flying.

STARLight by **Collins Aerospace** is a structural technology that uses advanced composite designs, robotic manufacturing, and sustainable materials to reduce the weight of aircraft components while also lowering manufacturing costs. This technology enables airlines to efficiently design their cabin spaces without adding extra weight, and offers enhanced thermal and acoustic insulation properties.

The doors of existing Business-Class suites are complex, heavy devices that are challenging to certify. Inspired by the 1,000-year-old art of origami, **Unum Aircraft Seating**, in collaboration with **MGR Foamtex**, has developed "Door 2.0 - The Zen Privacy Door," a patented foldable design for Business-Class privacy doors that is significantly less complex and therefore lighter and easier to certify.

The ECO Bracket is an innovative bracket developed by **Diehl Aviation** and **9T Labs**, made from recycled thermoplastic production waste and featuring an advanced manufacturing process that optimises load distribution and mechanical performance. The product enables a significant reduction in weight and production costs by 50%, supports the reduction of CO2 emissions, and promotes the reuse of resources at the end of the components' lifecycle.

Sustainable Cabin
The selected submissions in the "Sustainable Cabin" category set new standards in terms of

sustainability in aircraft cabins. The innovations use environmentally friendly materials and technologies to reduce the CO2 footprint, minimise waste, and improve resource efficiency, while also optimising the passenger experience.

The R Sphere by **RECARO Aircraft Seating** is an innovative seating concept that uses sustainable materials such as cork, wood, recycled fishing nets, and cactus. It is characterised by the ability to reduce CO2 emissions by 63 tonnes per aircraft annually and is 100% recyclable at the end of its lifecycle, making it a pioneer in eco-friendly aircraft seats.

The ECO Sidewall by **Diehl Aviation** is also an innovative cabin side wall concept for aircraft cabins, which, through the use of lightweight materials and advanced technologies, achieves a weight reduction of ten percent and a reduction in CO2 emissions by ten percent during operation. It integrates environmentally friendly technologies that significantly reduce production waste and thus contribute to more sustainable cabin designs.

The Onboard Water Dispenser by **Safran Cabin** uses the existing water supply of the aircraft and can be installed near the toilets and galleys, where it ensures clean drinking water through UV filter technology. This solution reduces the need for purchasing and disposing of water bottles, optimises stock management, and boosts the efficiency of the cabin crew by making the distribution of bottles and cups unnecessary.

University

In the "University" category, innovative collaborations between universities and industry partners present advanced solutions for common problems in aircraft cabins.

In Economy Class cabins, limited space often leads to restricted body posture and lack of privacy. Flexifold by **Tongji University**, in collaboration with **Dupont**, is an Economy seat that provides improved body support through an innovative fold-and-snap mechanism. The seat integrates lightweight and breathable materials in a sandwich structure and offers modular adjustment options for privacy, lying angle, and foot support to enhance comfort in cramped cabin spaces.

"Silentium in excelsis" by **the University of São Paulo** in cooperation with **Embraer** is an aircraft noise-cancelling device. It uses artificial intelligence and is equipped with a camera that directs sound waves specifically at the passengers' heads to reduce the white noise from aircraft engines. It allows users to work, sleep, or converse without the use of headphones, by locally reducing noise disturbances.

Silvacomfort also by **the University of São Paulo** in cooperation with **Embraer** is a cabin system that uses sensor technology and artificial intelligence to individually adjust environmental conditions for each passenger, by modifying temperature, lighting, and sound based on the respective profile of the passenger. The system discreetly integrates cameras, sound recording devices, and temperature sensors into the cabin architecture to anticipate needs and adjust the settings of air conditioning, light, and background music accordingly, while data processing occurs centrally to protect privacy.

The Wheelchair Space and Securement System (WSSS), developed by a student team from **Virginia Tech** in cooperation with **Boeing**, **All Wheels Up**, and **Collins Aerospace**, allows passengers with limited mobility to sit securely in their own wheelchairs during flight. The system is integrated into the seating configuration of the Economy Class and can be flexibly adapted when not in use to minimise revenue losses for airlines.

The Innovations of The Year: Live Awards Ceremony on 28 May 2024 in Hamburg

The Crystal Cabin Award, an initiative of the Hamburg Aviation cluster, is awarded this year in eight categories: "Cabin Concepts," "Cabin Systems," "Health & Safety," "Passenger Comfort," "IFEC & Digital Services," "Materials and Components," "Sustainable Cabin," and "University."

The finalists will have the opportunity to present their concepts in person to the jury at the world's leading trade fair for aircraft cabins, the Aircraft Interiors Expo (28 - 30 May 2024 in Hamburg). The winners of the 2024 Crystal Cabin Awards will be announced on the evening of 28 May at a gala dinner at the Hamburg Chambers of Commerce.

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