

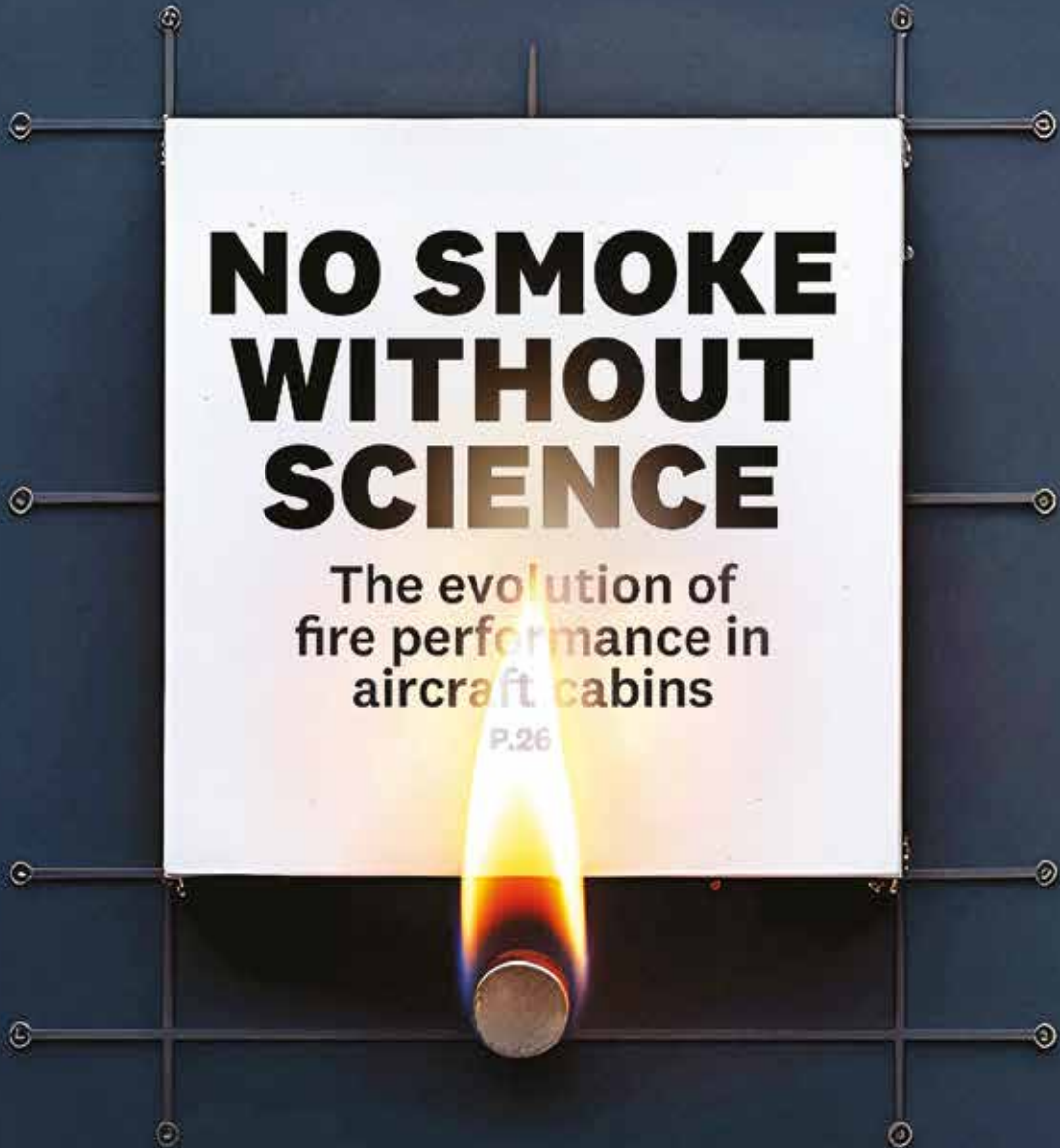
Aircraft

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VOLUME 15 • ISSUE 03 • JUNE/JULY 2026

CABIN

Perfecting the passenger experience **Management**



NO SMOKE WITHOUT SCIENCE

The evolution of
fire performance in
aircraft cabins

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Organisation set up to regulate
onboard payments

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Ambient settings can alter
passengers' circadian patterns

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CRYSTAL WINNERS

The results are in for the
industry's most coveted prizes

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ALL YOU NEED FOR CONNECTED CABIN INNOVATION.



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THINK LIKE A CUSTOMER

The complete, 'holistic' end-to-end travel experience is something that airlines talk a lot about these days and Olivier Krueger, CMO of Lufthansa Group spoke at length about it at the RedCabin conference, held in the Lufthansa Seeheim hotel, at which I had recently arrived.

End-to-end travel, as Krueger explained, starts as the passenger prepares to leave home, and continues until they are at their destination.

I listened to this presentation through gritted teeth. Having booked a place on the Lufthansa shuttle bus, I followed the cryptic directions to it, only to find it wasn't there. Several signs in the airport seemed to give contradictory advice, so I asked three different airport workers, who gave me four different answers.

Having missed it and not wanting to pay a three-figure taxi bill, I went to the hotel on public transport. Three hours, two trains, one bus and a hike up a dark, drizzly hillside later, I came to question that decision. As it turned out, I wasn't the only one. Everyone else at the conference that I spoke to who had booked the bus couldn't find it either, although they had much more wisely chosen to share taxis instead.



▲ An already arduous journey ended with an uphill hike

“Airline executives are all on the inside looking out of their operations”

The point here is that airline executives are all on the inside looking out of their operations, whereas passengers are on the outside looking in. In this case, all the elements of an end-to-end experience were there, it just needed someone to act as a traveller to find where the weak spots lay.

With all the delays and hassles in airports worldwide this summer, airlines would do well to heed this.

Greg Whitaker

Greg Whitaker

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NEWS FROM ACROSS THE INDUSTRY



Cabins

ATR HIGHLINE ALL BUSINESS-CLASS INTERIOR ENTERS SERVICE

The first ATR 72-600 featuring the ATR HighLine 'All-Business Class' configuration has touched down in Kuala Lumpur. ATR's new cabin concept received certification from EASA and Malaysian authorities in May.

This aircraft features an all-business class cabin, accommodating 26 seats in a 1-by-1 layout. The Eterea seats by Geven are the widest to be installed on the ATR platform and offer good living space and a personal side console with integrated stowage.

One of the cabin's most distinctive elements is the ceiling, where overhead bins have been replaced by valance panels. This design opens up the cabin and gives the regional turboprop an ambiance similar to a private aircraft.

Berjaya Air will begin operating the aircraft in the coming days, launching

its first flight on a new route between Subang and Koh Samui. It will then roll out its "affordable luxury" experience on its newly expanded regional network, with direct connections throughout Malaysia, Thailand, Vietnam and Indonesia, and a focus on serving Berjaya Group's portfolio of hotels and resorts. The aircraft will also be available for charter operations.

ATR chief executive officer Nathalie Tarnaud Laude added: "This milestone demonstrates how the ATR family continues to evolve to meet new market expectations."

“
The ATR family continues to evolve to meet new market expectations



Deals

Saudia introduces A321XLR

> Saudi Arabia's national carrier has brought the first of an order of 15 A321XLR aircraft into service.

Saudia placed the order in 2019, and has become the first Middle-Eastern carrier to fly the type.

The aircraft features a premium, low-density configuration with 24 full flat business class seats providing direct aisle access, alongside 120 comfortable economy class seats. The aircraft features the Airbus Airspace Cabin, bringing a widebody experience to a single-aisle jet. Key features include extra-large overhead bins, advanced lighting systems and one of the quietest cabins in its class.

Other carriers in the region with A321XLR orders are flynas (also owned by Saudia) and MEA, which have signed firm orders for 10 and four aircraft respectively.

“
Saudia is the first Middle-Eastern carrier to fly the type



Legislation

EU E-SAF TARGETS “UTTERLY DETACHED FROM REALITY”

> A speaker at the IATA General Meeting has been deeply critical of e-SAF policy in the EU and UK.

“The 2030 e-SAF targets by the UK and the EU are beyond unrealistic – they are utterly detached from reality,” said Marie Owens Thomsen, IATA’s senior VP sustainability and chief economist.

The EU and the UK have mandated e-SAF production of around 0.6 million tonnes by 2030. However, global production capacity currently operating and under construction stands at around 0.02 million tonnes with only one single

production site in operation. It would take approximately 20 commercial-scale refineries to achieve the volume. “It is a reckless energy market creation strategy to impose mandates before production is enabled. Such a strategy will only drive up the price,” Thomsen told delegates.

“Coupled with penalties, it diverts scarce resources from being allocated to actual CO₂ emissions reductions.

“The strategy is also bewildering given that Europe has the highest renewable energy prices in the world,” Thomsen concluded.

Seating

DISCOVER SEATING DEBUT

> Thompson Aero Seating has publicly demonstrated its customised VantageXL seat for Discover Airlines’ A330 fleet.

Displayed at the RedCabin Innovation Summit in Seeheim, the VantageXL business class seats feature a fully flat bed of two meters in length trimmed in the Lufthansa subsidiary’s colours.

There is also a business class suite in the front central column, featuring doors, an even larger fully flat bed and a 32” monitor.

Delegates at the event have been able to see and feel the various custom options, such as the leather buckle cover on the seat belt, wireless charger, recessed cocktail tray and logged features.

Gareth Jones, senior programme manager for Thompson Aero Seating, said: “Discover Airlines announced its Ocean Blue cabin earlier this year but this is the first time that anyone will have seen and been able to fully experience the seats in person.”



BRIEFS

- Australia-based Jetstar has purchased 48 of the new Airchair II units from UK-based manufacturer Airchair following a comparison and procurement process.

- Airbus has developed a robot (pictured) to install seat tracks. Cabin Marker’s initial mission is to automate the marking and positioning of seat tracks, but more uses for it are being planned.

- Fuel prices haven’t grounded aircraft orders. April 2026 saw 164 commercial aircraft placed, which is nearly eight times the number placed in the same period last year, according to ADS data.

- Wizz Air is to roll out Starlink connectivity across its fleet of around 260 aircraft. This allows it to compete with Air Baltic and Vueling, which already have the technology. It also makes a point of difference between Wizz and its rival Ryanair, which has vowed never to adopt the technology.

- Autonomous wheelchair provider WHILL is to run a trial of its service at Heathrow Terminal 3.

- Azerbaijan Airlines has installed Panasonic Astrova IFE on its 11 A320-family aircraft.



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ROSEN
AVIATION

[IN NUMBERS]

18%

IBA data shows European airline revenue has grown 18% YoY, although this masks profit pressure

\$13.6M

Emirates has invested \$13.6m in a facility to recycle cabin waste in a partnership with deSter FZE UAE

164

The number of aircraft ordered worldwide in April 2026, eight times that of the same period in 2025

**Awards****RECARO RECEIVES 'BEST MANAGED COMPANIES' AWARD**

Recaro has scooped the Best Managed Companies Award 2026. The award is designed for mid-sized and family-owned businesses headquartered in Germany with a minimum annual revenue of €150 million, demonstrating good leadership and sustained business success over recent years.

The recognition was presented by Deloitte at a festive dinner held in Frankfurt.

"This award recognises the strength of our organisation in all its diversity, from strategic alignment to operational excellence," said Peter Müller, chief financial officer at Recaro Aircraft Seating and Recaro Holding. "With

particularly great pride, I recognise the high level of commitment and sense of responsibility with which our teams contribute to our shared success every day. I therefore also view this award as recognition of precisely this highly motivated dedication."

"Best Managed Companies recognises outstanding corporate leadership that creates stability and does not rest on past achievements," added Markus Seiz from Deloitte.

“

This award recognises the strength of our organisation in all its diversity

**Connectivity****Scottish Leather Group cuts emissions**

➤ Materials manufacturer Scottish Leather Group has achieved net zero greenhouse gas emissions for Scope 1 and Scope 2 across its factory operations, as the traditionally energy-intensive sector prepares to decarbonise through a UK initiative known as 'Journey to Zero'.

Early efforts at the company, which owns the Muirhead, Bridge of Wier and Lang brands, focused on energy efficiency and system optimisation, including centralising energy systems and reducing energy consumption. These improvements reduced energy consumption by approximately 40 per cent over the first five years.

Dr Warren Bowden, head of sustainability at SLG, said: "Achieving net-zero greenhouse gas emissions for Scope 1 and Scope 2 demonstrates that it is possible to decouple carbon from production".



RETAILING: STRONGER TOGETHER

GIRA body launched to bring oversight to aviation retail

We talk a lot about ancillary revenue in this magazine, and in particular the opportunities offered to airlines when they have a captive audience onboard every flight. Airlines have been slow to react, but with each passing month, more of them wake up to the fact that onboard retail isn't just about the duty-free trolley. Instead, modern onboard retail is driven by goods and services that passengers can order through the seatback screens, or increasingly, via an app on their own devices.

However, there is very little in common with the retail proposition between different carriers, with a myriad of different systems and standards. The absence of an independent, trusted body dedicated solely to in-flight retail and its increasingly complex payment, regulatory and operational challenges has been felt throughout the industry.

To learn more about the new organisation we caught up with two of the founding members, Laura Rösches,

CEO of BYOD platform AirFi and Aleksejs Romanovs, a key account manager at LSG Sky Chefs who is also involved in LSG Group's C8Rtech retailing, planning and logistics platform.

According to Romanovs, airlines and suppliers currently operate in a vacuum. There is no neutral organisation able to guide stakeholders on how to approach inflight retail strategically – whether an airline is low-cost, hybrid or legacy; which technology and suppliers are appropriate; how cabin crew should be incentivised; or how operational manuals, payments and compliance should align. As a result, airlines often learn through costly trial and error; “cutting a leg off to learn how to walk,” as he puts it.

GIRA was deliberately not conceived as a commercial venture. Both Rösches and Romanovs stress that it is an industry-wide, common-sense initiative: a non-commercial association designed to help airlines and suppliers “do things right the first time,” rather than repeatedly solving the same problems in isolation.

Collective advocacy

One of the strongest drivers behind GIRA's creation is regulatory dysfunction – particularly in Europe. Romanovs highlights the lack of a coherent business code for inflight retail, resulting in airlines facing wildly inconsistent tax regimes across borders. Operators can spend years unknowingly operating under unclear or unsuitable rules, only to be confronted later by authorities demanding back taxes – forcing airlines to educate regulators on a business model those regulators were never prepared to oversee.

Crucially, this burden is repeated airline by airline, country by country. GIRA's purpose is to invest in coordinated lobbying and advocacy so that the industry no longer has to “operate in the shadows.” Instead of individual airlines or suppliers negotiating alone, GIRA provides a unified voice capable of engaging policymakers with credibility and consistency.



◀ Laura Rösches at the World Travel Catering & Onboard Services Expo
▶ Currently, nobody can state with confidence how large the onboard retail industry is

foundational questions rather than solving real problems.

One striking example raised in the interview is data: nobody can say with confidence how large the global inflight retail industry actually is. Estimates range from \$20bn to \$40bn, both potentially correct, because no organisation has ever invested in properly defining, measuring and mapping the sector. GIRA aims to become that credible source of data, benchmarking and insight – similar to the role TFWA plays in duty free or industry bodies in traditional catering.

Governance and a neutral structure

A key reason GIRA has gained traction is its governance model. Romanovs notes that suppliers advising airlines are often dismissed due to conflicts of interest. GIRA addresses this by bringing airlines and suppliers together under a neutral structure, with equal representation: a board comprising four airlines and four suppliers, supported by task forces focused on lobbying, data collection, mediation and standards.

This independence is central to trust. For the first time, airlines can turn to an organisation that is not selling them technology or services but instead represents the collective interests of the inflight retail ecosystem.

Phased mandate

GIRA's scope is intentionally wide: payments, VAT and settlement, allergen rules, cabin crew incentives, data standards, definitions and regulatory

clarity all fall within its remit. Rösches points out that many current rules – such as why some allergens are treated differently onboard, or why payments can be settled domestically in one country but not internationally – exist without coherent rationale or consistency.

Despite this ambition, there is realism about pace. The founders acknowledge aviation is heavily regulated and slow to change. GIRA does not claim it can fix everything quickly – but insists that someone has to start.

The early response has been overwhelmingly positive. Rösches notes significant inbound interest from airlines, merchants, payment acquirers, schemes and peripheral suppliers across regions. Stakeholders are asking how they can participate, what data they will receive, and how global representation will be ensured.

GIRA positions itself as inclusive by design: anyone actively involved in selling onboard – from airlines choosing their merchant model, to payment providers, hardware suppliers and even seal manufacturers – is considered part of the inflight retail value chain and a potential member. ●

Defining an industry that lacks definition

Rösches emphasises another core motivation: lowering the barrier to entry into inflight retail. Unlike catering or aircraft interiors – both of which benefit from long-established gold standards – there is no equivalent framework for inflight retail. The sector is treated as an extension of ground-based retail or payments, despite being a distinct vertical with unique constraints.

The lack of shared definitions is a major issue. The industry cannot even agree on where “in-flight retail” starts and ends, what counts as onboard commerce, or which metrics matter. Without a common language, airlines and suppliers waste time answering



UNTIL NOW, THERE WAS NO INDEPENDENT BODY THAT PROVIDED ANY CREDIBLE SOURCE OF INFORMATION REGARDING IN-FLIGHT RETAIL

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SEEING RED

The RedCabin Innovation Summit 2026 gave delegates plenty to think and talk about

Held in the Lufthansa Seeheim hotel in the hills of the Hesse region of Germany, organisers had certainly picked a lovely spot to hold the RedCabin Innovation Summit.

Scenery aside, the meeting brought together dozens of aircraft interior professionals, ranging from designers to manufacturers and suppliers as well as airlines.

The event kicked off with an introduction from Oliver Krueger, the chief marketing officer of Lufthansa Group. As the group were sponsoring, and in a sense (given that the event was held in one of its hotels) hosting, it seemed appropriate that the first panel discussion of the day was to discuss the interior choices of Group airlines Discover and Edelweiss.

This session was moderated by Felix Haeffner from Priestmangoode. Haeffner was on the team that designed the cabins and was joined on stage by Martin Rast, head of product and services at Edelweiss and Maximilian Meintgens, director customer experience & marketing at Discover.



▲ Kevin Roundhill from Boeing on improving sustainability with cross-industry collaboration
▼ Eurowings' Patrick Door discussed business-class comfort on narrowbody aircraft

“GOOD DESIGN COMBINED WITH MODERN MATERIALS AND TECHNOLOGY MAKE FOR A BETTER PASSENGER EXPERIENCE”

A speed networking session was next, following an increasingly popular trend in business events. During this time the room is split into two ‘teams’, red and black. The reds move along the line of the other colour, spending three minutes with each contact. From our perspective, this was a great way to introduce ourselves to delegates that we didn’t necessarily know. Our only gripe was that by the time half of the room had shuffled into a line, a good chunk of the allotted 30 minutes had passed. It could really have done with a full hour.

Vertical aerospace

The following session was a talk by Borna Vrdoljak from eVTOL startup Vertical Aerospace. Vrdoljak introduced the Valo, an unconventional concept in that it has wings. After having taken off vertically as you might expect, it tilts its front rotors through 90 degrees to enable it to fly like a regular propeller plane.

Getting an aircraft this radical certified for commercial flight won’t be easy or quick, and we think that the firm’s projected entry in to service date of 2028 is somewhat optimistic. However, UK test flights conducted in April this

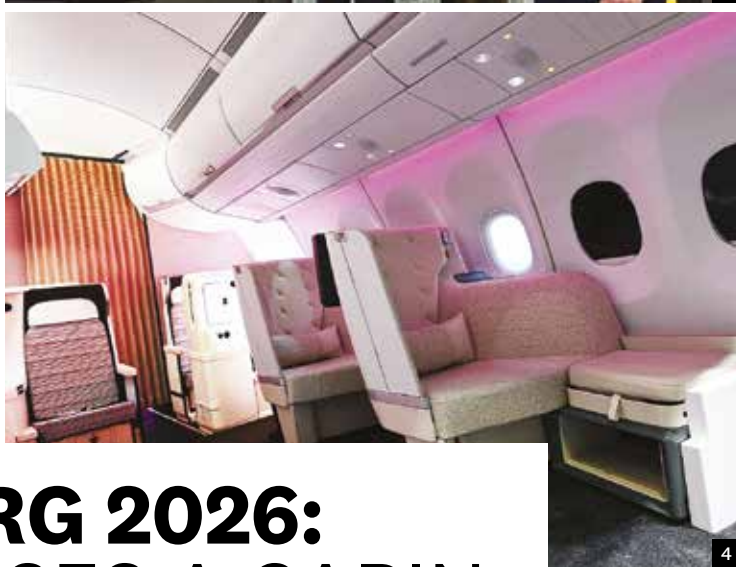
year have been successful, and we wish them all the best of luck with the project.

‘Wellbeing’ is an overused buzzword in our trade, but it is certainly true that good design combined with modern materials and technology make for a better experience for the passenger, and an improved NPS for the airline.

This was discussed over two sessions, the first being hosted by Daniel MacInnes, director at Priestmangoode with Caynova’s Brent Jump, Jonathan Seguin from Stelia Aerospace and Eric Groenloh, who oversees customer journey development at Lufthansa Group.

The second session discussed seat lighting as a ‘silent service for comfort’, design and wellbeing on board. Aviation consultant Cristian Sutter hosted, joined by Klaus Portmanns from Schott, Ingo Wuggetzer from Airbus, Dr Achim Leder from Jetlite and Luke Pearson from design agency Pearson Lloyd. The panel sought to answer if it was possible to leave a long-haul flight feeling more refreshed than before boarding.

The consensus from everyone we spoke to was that this was an interesting and useful event. ●



HAMBURG 2026: AIX SHOWCASES A CABIN SECTOR IN TRANSITION

The aviation industry has changed dramatically in recent years, and the bellwether cabin show in its 25th edition reflects this

A background of rising oil prices, airline uncertainty and global political unrest threatened to overshadow the 25th edition of the Aircraft Interiors Expo, better known as AIX.

However, if organisers were worried that visitors might have stayed at home, they needn't have. Attendance rose year-on-year, with more than 12,500 visitors and close to 500 exhibitors over three days. Representatives from 185 airlines attended, alongside a broad international supplier base, reflecting the global nature of the cabin sector.

The 2026 event marked a 25-year milestone for AIX and, speaking to long-

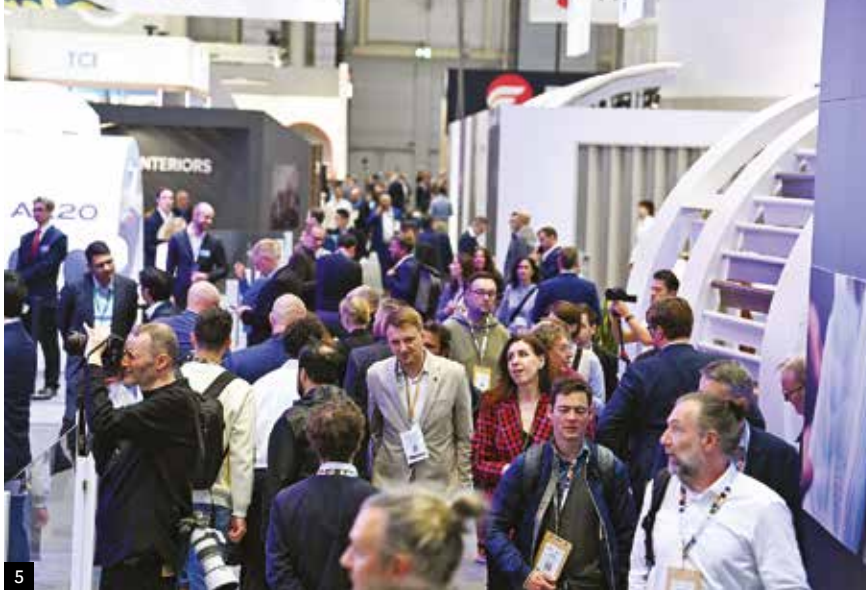
term attendees, it was clear just how much the show, along with the industry it represents, has changed in that time. Just eight companies – Collins Aerospace (formerly B/E Aerospace), Belgraver, Botany Weaving Mill, CELSO, Lantal Textiles, Rohi Stoffe, Tex Tech Industries and Percival Aviation – have exhibited at every edition.

Alongside these, 93 companies made their debut, according to the organisers. We didn't have a list of first-time exhibitors, but we noticed companies such as ImaginAir, Innova and large-format 3D printer firm BigRep at the show.

AIX 2026 featured a broad range of announcements across seating, materials, retrofit programmes and airline cabin

strategies, highlighting several consistent industry priorities: premiumisation, weight reduction, modularity and certification efficiency. We were also heartened to note that accessibility is starting to get the recognition it deserves, with many exhibitors talking about the end-to-end journey made easier with new technology.

It was also encouraging to see several exhibitors talk about economy seating. Despite being the largest part of the cabin, and essential for every airline's success, it is often overlooked. Collins Aerospace deserve a special mention, as they showed some simple, but well-thought out improvements for the main cabin of various widebody aircraft types.



“THE SHOW HAD CLOSE TO 500 EXHIBITORS, ALTHOUGH JUST EIGHT COMPANIES HAVE EXHIBITED AT EVERY EDITION”

Of course, it wouldn't be much of an aircraft show if representatives from airlines were not present. Among carrier developments, Saudia-owned flyadeal outlined its two-class Airbus A330-900neo cabin configuration ahead of its planned long-haul operations from 2027, reflecting wider trends toward enhanced passenger segmentation on widebody aircraft.

Seat manufacturers presented a mix of premium and economy solutions. Thompson Aero Seating and PriestmanGoode/Geven introduced new premium concepts focused on privacy and flexible layouts. Meanwhile, Mirus Aircraft Seating and ZIM Aircraft Seating emphasised lightweight, recyclable designs aimed at improving operational efficiency. Mirus also confirmed a significant order from easyJet for its Kestrel seat across more than 200 Airbus A320neo family aircraft.

Collaboration across the supply chain remained a recurring theme. Simona Boltaron and Geven extended their joint work on materials applications, while Aloft AeroArchitects announced a Boeing 737 supplemental type certificate (STC) retrofit programme aligned with its modular Mosaic concept.

Bizjet

A notable addition this year was the introduction of the BizJet Interiors Zone, which brought together 24 exhibitors focused on corporate and VVIP aviation. The dedicated space highlighted the segment's growing visibility within AIX and its influence on broader cabin design trends.

Announcements within the zone included Aloft AeroArchitects' focus on VVIP completions and continued investment in engineering capabilities, alongside F/LIST's expansion into corporate helicopter interiors. The presence of business aviation suppliers also illustrated how high-end design concepts and materials are increasingly informing commercial cabin development, particularly as airlines invest in premium products.

IFEC

The in-flight entertainment and connectivity (IFEC) sector remained a central feature, with 77 exhibitors presenting solutions spanning connectivity, content and digital services. A key takeaway was the shift in focus from enabling connectivity to leveraging it.

Recent developments highlighted this transition. Zipair presented a fleetwide approach using onboard server platforms integrated with satellite connectivity, while Thales introduced its FlytEDGE Aura seatback system with enhanced display and connectivity capabilities. Other concepts included e-paper seatback applications for dynamic content and advertising, as well as offline-enabled platforms designed to support personalised onboard experiences.

Geography question

The show also reflected the growing geographical diversity of the aircraft interiors market. Asia-Pacific and the Middle East accounted for 17% and 14% of attendees respectively, with increased

1. Representatives from 185 airlines attended
2. The cabin show marked its 25th edition
3. The BizJet interiors section was new for 2026
4. Innovations in seat design were on display
5. AIX attracted more than 12,500 visitors
6. Acro Aircraft Seating was one of the many companies showcasing new ideas

participation from airlines, suppliers and manufacturers in these regions.

Companies such as Jamco, Zipair and India-based Timetooth – identified as the country's first seat manufacturer – illustrated the broader shift toward a more globally distributed supply chain. Complementing this, AIX released new Global Cabin Concept Lab reports focused on Asia-Pacific and India, examining regional drivers of cabin development, with further analysis on the Middle East planned.

Passenger experience

The Passenger Experience Conference (PEC) and CabinSpace Live sessions provided additional context, addressing themes such as premiumisation, sustainability, accessibility, certification challenges and digital passenger engagement. Across both programmes, speakers emphasised the need to balance passenger expectations with operational efficiency and supply chain constraints.

AIX 2026 highlighted both continuity and change within the aircraft interiors sector. While the event's scale and scope continue to grow, the underlying focus remains consistent: enabling airlines to differentiate through the cabin while addressing cost, sustainability and regulatory considerations.

As the industry looks ahead, AIX is expected to remain a central platform for collaboration and innovation, with its next edition scheduled to return to Hamburg in 2027. ●



DESIGNING DIGNITY

How two award-winning lavatory concepts are redefining accessibility in the aircraft cabin

Accessibility has quietly become one of the most decisive topics in aircraft interior design. Driven by demographic change and increasingly stringent regulations, the industry is being compelled to rethink long established cabin architectures. This is particularly true for one of its most space critical areas: the lavatory. Diehl Aviation's two Crystal Cabin Award-winning concepts, Space3 and AURS, demonstrate how accessibility can be elevated from mere compliance requirement to catalyst for innovation.

Globally, approximately 1.3 billion people live with a disability. Meanwhile, air travel has become an integral part of modern lifestyles, spanning all ages. This has clear implications for airlines: accessibility is no longer a niche requirement; it has become an integral part of the passenger experience.

Regulators are responding accordingly. In the United States, a new Department of Transportation (DOT) regulation is set to come into force in 2026 that will explicitly require lavatories to be accessible. For airlines and suppliers alike, the question is no



longer if cabin accessibility must improve, but how this can be achieved without compromising operational efficiency.

Space3: Rethinking space

At first glance, Space3 seems to defy the laws of cabin geometry. Diehl Aviation's concept replaces a conventional two lavatory centre block with three compact units, while maintaining the overall footprint. The key lies in its modular architecture: two of the three lavatories can be combined in just a few intuitive steps to create a spacious, wheelchair accessible environment with sufficient manoeuvring room and well positioned support handles and surfaces.

The result is a lavatory that meets upcoming US DOT accessibility criteria while addressing airline requirements. Thanks to extensive 3D analysis and the systematic reduction of classic "volume drivers", Space3 enables up to two additional revenue seat rows, depending on the cabin layout.

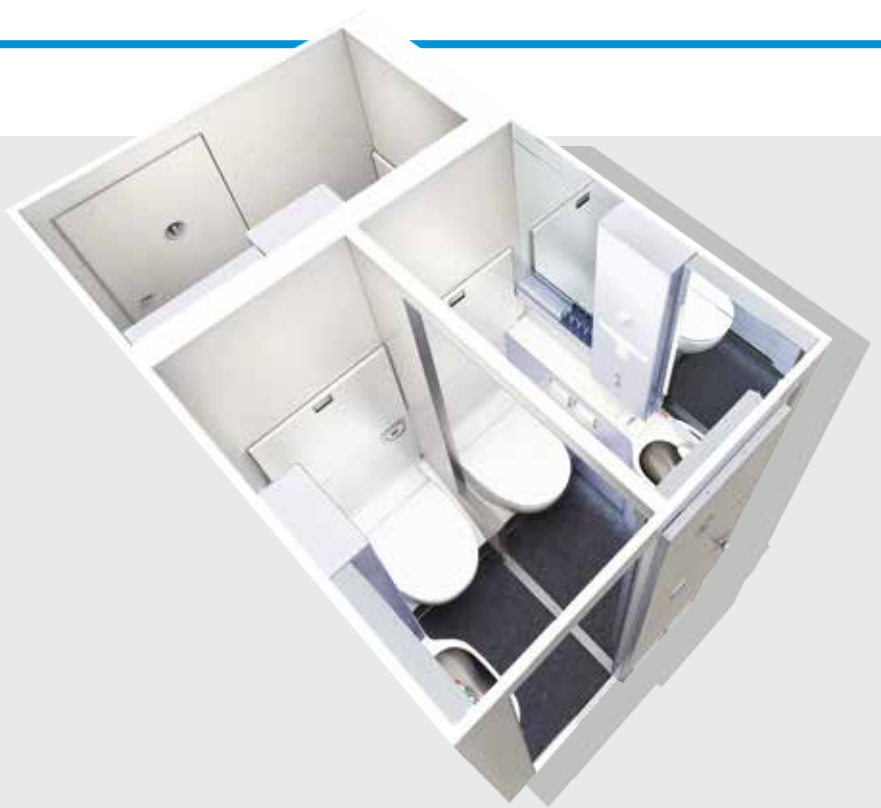
Designed for both line-fit and retrofit applications, Space3 will be adaptable for long-haul Airbus and Boeing aircraft from late 2026 onwards. Its technical maturity was validated not only by engineering teams but also by users: in September 2025, passengers with reduced mobility tested the concept live at Hamburg Airport. The feedback was overwhelmingly positive, especially regarding the number and placement of support handles and surfaces.

The industry took notice: In 2025, Space3 received the Crystal Cabin Award in the "Accessibility" category, recognising it as a unique, global solution at the intersection of inclusion and efficiency.

AURS: enabling orientation

While Space3 focuses on physical accessibility, AURS (Adaptive User Routing System) addresses a different yet equally critical dimension: orientation and independent use for passengers with visual or hearing impairments.





3

“Space3 seems to defy the laws of cabin geometry”

AURS transforms the lavatory into an intuitively navigable space by combining an accessibility focused layout with a smart digital layer. High contrast surfaces, tactile guidance elements, Braille labels and distinctly shaped controls support spatial orientation. Safety information is displayed visually on an integrated mirror screen, while adaptive lighting and optional audio cues assist passengers with low vision.

What sets AURS apart is its development approach. From the outset, blind and deaf travellers were directly involved in shaping the concept. Their real-world input influenced everything from symbol placement to interaction logic, ensuring that the system supports independent and dignified use rather than theoretical compliance.

Built on an established connected cabin technology platform, AURS is already being deployed as a technology demonstrator in trials with accessibility groups. Diehl Aviation's concept won the 2026 Crystal Cabin Award in the “Accessibility” category, marking a second consecutive win in this field and signalling strong industry endorsement for inclusive, digitally supported cabin solutions.

Two concepts, one strategic direction

Together, Space3 and AURS indicate a broader shift in cabin design philosophy. Accessibility is no longer considered

1. AURS incorporates Braille labels
2. An integrated mirror screen in AURS displays safety information
3. Space3 makes clever use of cabin space
4. The modular architecture means Space3 can become wheelchair accessible

as an isolated feature or a regulatory afterthought. Instead, accessibility is systematically integrated across physical layout, digital interaction and operational logic.

For airlines, this approach goes beyond regulatory compliance, offering potential business value through weight reduction, space optimisation and retrofit flexibility. For passengers, it represents something far more fundamental: the ability to move around, find their orientation and care for themselves on board with confidence and dignity.

As accessibility requirements continue to evolve, innovations like Space3 and AURS suggest that the most future ready cabins will be those that are designed with diversity in mind, quietly, intelligently, and with the passenger firmly at the centre. ●

DESIGN DIFFERENTIATION

“Accessibility can’t be solved with a single feature, it requires a holistic design approach,” says Carsten Laufs, senior vice president product innovation and digitalisation at Diehl Aviation. “Space3 addresses the needs of passengers with reduced mobility through a smarter, more flexible lavatory architecture, while AURS provides intuitive guidance for travellers with sensory impairments. The fact that both concepts were honoured with Crystal Cabin Awards in the Accessibility category clearly confirms we’re on the right innovation path.”



For more information visit: [diehl.com](https://www.diehl.com)



4

SPINAL TAPPED

Teledyne Controls targets an aircraft's 'digital backbone' with a new 'Edge' computing platform

Teledyne Controls believes the aviation industry is entering a new phase in how aircraft data is used, moving beyond traditional data capture and dashboards towards real-time intelligence delivered directly on board the aircraft.

Speaking to *Aircraft Cabin Management*, Jim Jackson, vice president of business development at Teledyne Controls and Bobby Burkett, data specialist, discuss how airlines have long been effective at collecting avionics and maintenance data, but far less attention has historically been paid to the cabin as a connected ecosystem.

"Avionics data has been well covered for years, but the cabin has largely been overlooked," Burkett explains. "We now see smart galley equipment, seats and other cabin systems generating data, but without a platform capable of turning that data into immediate intelligence."

Teledyne's response is a new edge computing platform, effectively acting as a 'digital backbone' for the aircraft. Jackson describes it as "cloud computing on the aircraft", with each aircraft hosting its own onboard server capable of ingesting, processing and acting on data in real time.



“Avionics data has been well covered, but the cabin has largely been overlooked”

BOBBY BURKETT

data specialist
Teledyne Controls

Rather than simply transmitting raw data off the aircraft for later analysis, the platform allows airlines to run analytics and software agents onboard, enabling faster decision-making and in some cases automated corrective action. "It's about moving from historical analysis to immediate intelligence," Jackson says.

Retrofit capability

A key focus is retrofit capability, particularly for legacy fleets and premium cabin products that already generate data but are not currently connected. The platform is designed to aggregate data from seats, galleys and other cabin systems and apply real-time analytics to identify and even resolve issues proactively – for example resetting a malfunctioning premium seat before it impacts a high-yield passenger.

Wireless connectivity underpins the approach. Teledyne supports data



2

ingestion via Wi-Fi, Bluetooth Low Energy, Zigbee and RFID, avoiding the cost, downtime and certification burden associated with hard-wired retrofits. "Wireless is critical for aircraft availability," Burkett notes. "Airlines don't want to tear an aircraft apart just to run new wiring."

Seats and other cabin equipment that already output data via interfaces such as RS-232 can be enabled using wireless transmitters, allowing existing hardware to be brought into the digital ecosystem with minimal modification.

Beyond data collection, Teledyne emphasises that the core innovation lies in the platform architecture. Built around containerised software, including Docker, the system allows airlines to develop and deploy their own applications outside the traditional avionics certification layer. This enables rapid iteration and customisation without returning equipment to the supplier for recertification.

"Historically, avionics have been monolithic," Jackson explains. "If you wanted a change, it was slow, costly and vendor-driven. Now airlines can write their own applications, update them quickly and tailor them to their specific operation."



1



- 1, 2 & 4.** The system ingests, processes and acts on cabin data in real time
3. Data can be turned into intelligence



3

4



“It’s about moving from historical analysis to immediate intelligence”

JIM JACKSON

VP, business development
Teledyne Controls

Jackson likens the approach to a smartphone ecosystem, with the aircraft platform providing the base functionality while airlines add their own ‘apps’ to extend capabilities over time. He adds that airlines can even ‘bop-code’ applications, allowing them to quickly

adapt software logic to changes such as introducing new galley equipment across a fleet overnight.

Cross-system intelligence

The platform also supports cross-system intelligence. Data from avionics, engines, environmental control systems and cabin equipment can be correlated, providing greater context awareness. For example, cabin temperature issues can be analysed alongside engine or pneumatic system performance and phase-of-flight data to identify root causes more accurately.

Burkett emphasises that while aircraft are producing more data than ever, data alone does not equal intelligence. “Aircraft have been generating data for decades,” he says. “The challenge is turning that data into actionable intelligence. That’s what this platform is designed to do.”

Teledyne believes the shift from static data and dashboards to autonomous onboard agents capable of monitoring, predicting and responding to issues represents a fundamental change in how airlines manage aircraft operations – particularly as connected cabins and smart components become more common across the fleet. ●

“THEY’D ASK FOR A FASTER HORSE”

While cabin management systems are well known, the system that Teledyne is promoting is a little more complex and needs explaining to potential customers.

This is apparent when airlines are approached about their future requirements. Take the analogy of Henry Ford. If, before creating his assembly line, he had asked customers, “What do you want next?”, their answer would probably have been “A faster horse”.

When we talk about the ecosystem of the aircraft, to treat it literally in that sense and have a digital backbone, that applies here. So, typically airlines don’t come and ask us about this, we have to go and explain it to them.



For more information
visit: teledynecontrols.com



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- The seat features a shell design
- ▼ The controls for the motorless mechanism

ON THE BEECH

ZIM has developed an aircraft seat using novel materials, including real wood

ZIM Aircraft Seating has introduced The Frame, a new premium economy seat concept that blends a business-class aesthetic with the practical advantages of economy-class design, including modularity and reduced weight. The company also promises enhanced comfort and a notably smoother recline mechanism.

The seat made its debut at AIX, where we tested it and spoke with Metin Albert Bopp, head of research & development at ZIM Aircraft Seating. “We are the world leader in the premium economy market, and we’ve gained a lot of experience over the last years,” he says. “Based on customer feedback, we’ve taken every detail and brought it into a new generation. When you sit in the seat, you can really feel how smooth it is.” That smoothness stems from a

“IT’S ACTUAL WOOD... THAT’S WHY WE CALL IT THE FRAME”

redesigned recline mechanism, available in both mechanical and electric versions. ZIM expects the mechanical option to be popular due to its weight advantage. “The difference is approximately 2.5kg per passenger compared with an electric system,” Bopp explains.

Real wood

Sustainability is a central theme of The Frame, which has already been nominated for a Crystal Cabin Award. A standout feature is its exposed structural frame made from real beech wood – an intentional shift away from traditional plastics. “It’s actual wood, and that’s why we call it The Frame,” says Bopp.

The structure is produced using a single tooling process with layered beech sourced from managed forests. At end of life, it can be mechanically chipped and reused in products such as furniture or plywood, without the need for chemical recycling. The material is also durable, offering strong scratch resistance, while minor damage can be repaired locally rather than requiring full replacement.

Further environmental and weight savings come from replacing plastic foils with technical textiles. These materials reduce component count while adding a warmer, more tactile cabin feel. The removable dress

covers are another practical feature, designed to be machine-washable without compromising fire resistance. Early certification testing, including flammability, has delivered good results.

Although often mistaken for business class, The Frame remains firmly positioned in the premium economy segment. Its elevated look is driven by sculpted shell geometry, integrated storage for personal items, and a forward-motion recline that avoids encroaching on the passenger behind. “We are not protruding into the living space of the passenger behind us,” Bopp notes.

ZIM is targeting a 20% weight reduction compared with conventional premium economy seats, achieved through material choices and a simplified, modular architecture. This approach also allows airlines greater flexibility in customisation.

Market response has been strong, even ahead of the official AIX launch. “Before the show, we already had significant interest,” says Bopp. “The first half-day of the exhibition was very positive.” ●



For more information, visit zim.aero



LESS NOISE, MORE CHOICE

At AIX, *Aircraft Cabin Management* selected Thai Airways for our Most Improved IFE award. Lee Hayhurst looks inside the carrier's entertainment evolution

This year's Aircraft Interiors Expo in Hamburg marked the 25th edition of a trade show that is established as the world's leading event dedicated to everything inside the cabin.

Throughout the show's existence *Aircraft Cabin Management* has taken the opportunity to track the many advances in flight experience offered to airline customers.

One important area of the in-flight experience that has seen considerable advances in recent years due to next-gen hardware and software is inflight entertainment (IFE). An airline that has appeared on our radar making rapid improvements is Thai Airways, the flag carrier of one of southeast Asia's most popular destinations.

Having undergone a significant company restructure following financial difficulties caused by the Covid pandemic, Thai has returned to sustained profitability. Investment in a new fleet

of modern, efficient aircraft has been accompanied by a focus on the experience it delivers to its international customers within the passenger cabin.

IFE, and the content it provides, has played a crucial role and for the last few years Thai has been working with its content service provider Images In Motion. The strategy has been to provide choice, but to also curate and to use the content available to showcase Thai culture, while providing a more personalised experience.

Choice paradox

Today, ubiquitous high bandwidth connectivity that allows unlimited choice means it is tempting to simply believe that, when it comes to inflight content, more is always more. But the modern internet age has also seen the emergence of the 'paradox of choice' when an excess of options leads to anxiety, decision paralysis and lower satisfaction.

So how is Thai walking this tightrope? The airline has focused on increasing the quality of its offering by expanding to a diverse range of content to engage its international passengers.

One example is the introduction of a dedicated HBO Max channel showcasing the biggest shows and series available on the provider's streaming platform. Then there has been curation of local Thai music playlists to reflect the country's warm hospitality to passengers, some of whom will be experiencing Thai culture for the first time.

Through the partnership with IIM, the airline created cinematic visual



2

segments that illustrate Thailand's history, traditional and welcoming nature. This approach is reflected in IIM's own corporate strapline 'Where East Meets West' and the partnership underlines the value of working with a CSP with a shared Asian heritage.

At the same time the airline has focused on pan-Asian and international TV shows and regional films to complement the ever-popular Hollywood blockbusters. The onboard selection of Indian movies, for instance, does not just include Bollywood blockbusters in Hindi but also regional language films.

The airline has made it a key priority to refresh classic and library content frequently instead of placing large volumes of content and then forgetting about it.

Expectations

Frequent flyers tend to pay particularly close attention to library content and



1



1. Widebody aircraft have seatback screens, while narrowbodies employ BYOD tech
2. An improved User Experience helps users find what they are looking for
3. Connectivity as well as IFE is offered on certain aircraft types

“The strategy has been to provide choice, but to also curate and to use the content available to showcase Thai culture, while providing a more personalised experience”

Thai aims to cater for their demands for fresh options. Another expectation on long-haul flights are box sets of popular TV shows that passengers can binge watch, just as they do at home.

As a result, Thai is allocating its available onboard hardware storage space carefully to cater for those passengers. Some of the most exciting advances in IFE are being driven by hardware and connectivity enabling passengers to engage much more with their seat-back screens.

Thai is working on improved User Experience including helping users to quickly find what they are looking for through Netflix-style recommendations. There will also be specific interfaces for young travellers, and a streamlined user interface on newer aircraft will deepen this move to personalisation by enabling faster navigation, voice assistance and smarter recommendations.

New customer behaviours are emerging such as double-screening, shopping, and direct interaction with fellow passengers or even crew.

This autumn, Thai plans to introduce full onboard connectivity, allowing passengers to access the internet throughout their journey. This will enable passengers to log into their favourite streaming channels, although watching the latest cinema releases on the seat back screen is expected to remain popular.

As we build up to the 26th AIX, Aircraft Cabin Management will take a keen interest in Thai's developing IFE strategy as the winning carrier for the Most Improved IFE. 

THAI AIRWAYS IFE & CONNECTIVITY

KEY STATS

Fleet coverage

- **Seatback IFE:** Installed across longhaul widebody fleet (A350, B787, B777)
- **Wireless IFE (“THAI Vision Connection”):** Rolling out on newer narrowbody/regional aircraft

Content delivery

- Hybrid model with embedded AVOD (seatback screens on widebodies) and BYOD streaming (wireless IFE on select aircraft)
- Personal device streaming includes movies, TV and music libraries
- Complimentary access: First/ Business & loyalty members

Connectivity (THAI Sky Connect)

- **Available on:** A330, A350, B777300ER, B787 fleet (select aircraft)
- **Planned expansion:** A321neo, B777 retrofits, B787 deliveries
- **Peak speeds:** up to ~200 Mbps via multiorbit satellite systems

Strategic direction (2025–2026)

- Transition toward high-speed, always-on connectivity + wireless IFE
- Focus on BYOD alongside traditional embedded systems



COMPLEXITY BECOMES THE ENEMY

Shashank Nigam, CEO of aviation consultancy SimpliFlying argues that AI will drive a new era of airline retailing

SimpliFlying Founder and CEO Shashank Nigam used his keynote at APEX FTE EMEA and Ancillary & Retailing to deliver a clear warning: artificial intelligence (AI) will not simply enhance airline retailing – it will reshape how travellers discover, evaluate and purchase air travel.

In an AI-mediated world, he argued, success will hinge on which airlines are surfaced first, which offers are understood, and which brands are effectively invisible before a customer even reaches a website.

Nigam positioned agentic AI as the next major shift in distribution. While the web drove airlines to build digital storefronts and mobile brought them closer to customers, AI agents will increasingly act on behalf of travellers – searching, comparing, recommending and ultimately transacting.

▼ Shashank Nigam maps out the future of retail



“
**AI will reshape
how travellers discover,
evaluate and purchase
air travel**
”

SHASHANK NIGAM

CEO of aviation consultancy SimpliFlying

Offer, order, AI

Reflecting on the industry’s retailing journey, Nigam noted that the move towards offers and orders was never the end goal, but rather a foundation for the AI era. “When we started talking 10 years ago about the need for airlines to become retailers and to have offers and orders,” he explained, “we thought that would be the destination. What we realised is that this was just preparation for the age of AI.”

In this context, AI agents will favour products that are easy to interpret, compare and explain. Complex fare rules, loosely defined bundles and disconnected ancillary services will

create commercial risk, while structured, transparent and customer-centric offers will create opportunity. For cabin and passenger experience leaders, this shift is particularly significant. AI agents will assess elements including seat quality, baggage, lounge access, onboard services, flexibility and disruption support as defined value propositions.

Interpreting retail

Nigam emphasised that AI will act as an interpreter between traveller intent and airline inventory. Requests such as “least stressful family trip” or “most reliable connection” will be translated into specific product recommendations. As a result, airlines must ensure that every product communicates the problem it solves, supported by consistent delivery.

The keynote also highlighted the economic imperative. With airline margins typically thin, even incremental gains in productivity, servicing and conversion can have significant financial impact. AI, Nigam suggested, will influence not only retailing, but operational efficiency and decision-making across the business.

Looking ahead, travellers will increasingly rely on AI assistants capable of orchestrating entire journeys across flights, hotels, ground transport and ancillary services. In this emerging ‘agent-to-agent’ ecosystem, airlines will compete within a broader network of travel providers, where visibility depends on the quality and clarity of their content.

Adoption may be uneven today, but Nigam cautioned that momentum will build quickly. Early engagement will shape how AI systems learn, what they prioritise and which sources they trust. Airlines that delay risk ceding influence to intermediaries and aggregators already supplying content to these systems.

His conclusion was direct: complexity is now the enemy. Airlines must simplify, structure and clearly communicate their offers for an AI-driven future – or risk being overlooked before the journey even begins. ●



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The background of the entire image shows a fire resistance test in progress. A metal frame, composed of vertical and horizontal rods with circular end caps, is visible. In the center of the frame, a white rectangular sample is being heated by a fire. Bright orange and yellow flames are visible around the sample, particularly concentrated at the bottom where a circular burner is located. The scene is set against a dark, solid background.

NO SMOKE WITHOUT SCIENCE

Fire resistance is a necessity. **Bernie Baldwin** reports on how the required standards, and materials science are delivering the safety levels required



“ Safety is no accident” declares a well-known and oft-used aviation proverb. While often used in relation to aircraft maintenance, it is just as pertinent to the task of making an aircraft as fire resistant as possible.

Within the cabin, there is a range of materials – foams, fabrics, composites, metals – which need to be as fire resistant as possible. In addition to protecting passengers, they must also provide comfort, which is a considerable challenge.

Luzius Rickenbacher is the CEO of Lantal, where fire resistance is engineered into products from the very beginning of their development. “We provide seat and curtain fabrics, carpets and leather solutions for aircraft cabins, where flammability performance is one of the key requirements,” he notes. “For us, the challenge is not only passing certification at first installation but also ensuring that the material continues to meet these requirements throughout its entire operational lifecycle.

“Aircraft interiors are exposed to cleaning chemicals, abrasion, UV exposure, humidity and intensive passenger use over many years. That means flammability must be combined with long-term durability and ageing resistance,” Rickenbacher continues. “It is not only about preventing ignition, but also about controlling flame spread, smoke generation and heat release in accordance with regulatory standards and OEM requirements.”

The CEO explains that this is the reason why Lantal operates its own Airbus- and ISO17025/ NADCAP-accredited laboratory. “It allows us to develop and validate products internally with very short feedback loops between testing and R&D, helping us better understand how materials

“CABIN MATERIALS ARE PART OF THE AIRCRAFT’S PASSIVE SAFETY SYSTEM. THEY ARE ALWAYS PRESENT AND WORKING IN THE BACKGROUND WITHOUT REQUIRING ANY ACTIVATION”

Lantal CEO Luzius Rickenbacher

behave not only in certification testing, but also under real cabin conditions over time,” he remarks. “We also see flammability expertise as something that should benefit the wider industry. That is why Lantal offers flammability testing services and training programmes for other customers and industry partners.”

At Replin by Hainsworth, there is a similar story. “Fire performance is never an afterthought, it is engineered into the very fibre of our products,” states technical innovation manager Angela Augusto. “Most of our cabin fabrics are built around wool, which is flame retardant by nature. Wool’s high nitrogen and moisture content means it is difficult to ignite, self-extinguishes when a flame source is removed and, critically, does not melt or drip, eliminating the risk of secondary burns.

▲ Zotek F offers all of the properties of MGR SoftWall, but with a reduced weight



“This is a fundamental advantage over many synthetic alternatives. Our passenger seating, pilot seating, curtains and vertical surface ranges all leverage this inherent protection as their foundation, with construction carefully engineered – yarn twist, weave density and fibre blend – to further slow flame spread and optimise char formation,” she adds.

No smoking

“Where enhanced fire performance is required, our vertical surface fabrics incorporate meta-aramid fibres from the same family as well-known brands such as Nomex, blended with wool to achieve the heat release performance demanded by OSU (Ohio State University) heat release calorimeter testing,” Augusto continues. “Meta-aramids are particularly well-suited to this

application: they offer excellent thermal stability, do not melt or drip, and contribute to the low heat release and low smoke characteristics that are critical for vertical surface compliance.”

Angel Hernanz Arbeloa, CCO at Neotex, explains that fire resistance is not just engineered from the initial material selection but also validated on the final product. “There is no single solution that applies to every case. The approach depends on the nature of the material, its function within the cabin and the final configuration in which it will be installed,” he comments.

“In the case of foams used in seating systems, flame-retardant components are usually incorporated into the material formulation itself or combined with specific fire-blocking layers,” Hernanz adds. “In such applications, fire performance does not depend on one single element, but on the complete system made up of the foam, potential barrier layer, outer textile, seams and other seat components.”

According to Hernanz, innovation at Neotex is mainly taking place in solutions that combine safety, lower weight and improved environmental performance. “This includes inherently flame-retardant fibres, halogen-free formulations, lower-impact coatings or finishes, recycled materials compatible with aerospace requirements, and textile constructions that can reduce weight without compromising performance,” he reports.

Insperial carpets

Insperial Group, the parent company to ADHETEC, MGR Foamtex and Perrone, is another to report fire resistance being engineered into its materials from the outset, be they genuine leather, synthetic leather, decorative laminates,

▲ Zotek window seal gaskets
▼ Exact Group Cerakote



21%

Normal air contains around 21% oxygen; wool's natural LOI of 25%-26% means it needs more oxygen than is present in the atmosphere to sustain combustion, making it inherently self-extinguishing

Alcantara or soft wall stack-ups. “Rather than relying on surface treatments, we use inherently flame-retardant constructions, such as meta-aramid fibres which remain stable under heat and help form a protective barrier,” confirms Alexis Gabillon, the group’s CEO.

“This delivers consistent, long-term flammability performance without the risk of additives degrading or washing out over time. This also extends to our final assembly products including MGRSoftWall by MGR Foamtex,” he continues. “Our engineering team takes a very careful and pragmatic approach to defining and determining the properties of all materials used, as well as how those materials interact with one another in order to reduce risk and improve consistency.”

Also stating the maxim that fire performance must be designed in from the start is Igna van Der Weide, head of product management at Zotefoams. “Our Zotek F material, used in a wide range of aerospace applications, combines high-performance polymers with a controlled closed-cell foam structure. This means that the material delivers consistent, repeatable behaviour after forming, bonding and installation,” she notes.

“The main innovation we’re seeing now is at the system level. Advanced foams can help designers and engineers combine several functions, including insulation, acoustic performance, rigidity and comfort, while avoiding heavier multi-layer assemblies. That matters in cabins, where weight reduction is important, but fire performance remains non-negotiable,” she emphasises.

Regulatory requirements are ubiquitous across aviation and for cabin materials there are plenty to which they must adhere, all of which affect the final products, as van Der Weide explains.

“THERE IS NO SINGLE SOLUTION THAT APPLIES TO EVERY CASE. THE APPROACH DEPENDS ON THE NATURE OF THE MATERIAL, ITS FUNCTION WITHIN THE CABIN AND THE FINAL CONFIGURATION IN WHICH IT WILL BE INSTALLED”

Neotex CCO Angel Hernanz

“Certification standards shape material choices from a very early stage. Materials must meet strict, critical requirements around flammability, heat release, smoke and toxicity, depending on the application,” she says. “Materials science determines how that performance holds up. Density, thickness, cell structure, adhesives and coverings can all affect behaviour, so both the sheet material and finished assembly must be validated.

Materials in the cabin obviously extend beyond textiles and foams. And the structural composites and coatings found there also need to be fire resistant. The Exact Group provides with just such materials to OEMs and Tier 1 partners.

Ronan Callan, the company’s director of operations, explains that fire resistance in all aircraft cabin materials Exact Group supplies is engineered through certification-led design, where regulatory requirements drive selection of foams, adhesives, laminates, coatings, and structural composites to meet strict flammability, smoke toxicity and heat-release standards.

“Recent innovations in cabin materials are transforming the industry,” he says. “For instance, through our use of Cerakote, an advanced single-coat surface technology, we are providing our customers with advanced fire-resistance, enhanced compliance and performance, while delivering durable, low-toxicity surface protection, maintaining aesthetics, reducing weight and improving the passenger experience.

“Emerging innovations also include recycled thermoplastics and lower-toxicity geopolymer and mineral-based composites, replacing traditional carbon-fibre panels,” Callan adds. “These developments enable manufacturers to lower cabin weight, reduce carbon footprint, and improve sustainability, all while meeting – and in



▲ Product testing at Lantal
◀ Exact Group facility 1|

some cases exceeding – stringent EASA and FAA requirements.”

These cabin materials are engineered and rigorously tested to meet those tough certification standards. “Fire-resistant additives are incorporated into formulations to improve heat release, smoke and toxicity performance. Components undergo qualification testing simulating inflight conditions, including vibration, thermal cycling, humidity, pressure changes, UV exposure and mechanical wear,” Callan reports.

“For Tier 1 manufacturers, certification is costly, with any failure requiring redesign and/or requalification. Materials must withstand cleaning agents and disinfectants over long service life,” he adds. “The challenge is maintaining fire safety performance over 10-20 years despite UV degradation, abrasion, contamination, repairs and repeated cleaning, while balancing weight, aesthetics, maintainability and sustainability.”

Hernanz points out that while many flame-retardant solutions for cabins are designed to maintain their behaviour throughout the life of the product, certain factors can affect the performance of the material or the finished product. “These may include incompatible cleaning products, inappropriate washing processes, prolonged exposure to UV radiation, abrasion, liquids, contaminants, ageing, humidity or post-treatments not considered in the original certification. Validation must therefore consider not only the initial fire behaviour, but also the stability of the product after maintenance and use,” he proclaims.

Inspiral Group's Gabillon explains that by engineering flame resistance into the base materials, fire-retardant properties are not reliant on coatings or finishes. “This makes the final product far more resistant to degradation, ensuring consistent performance throughout its service life.”



“LOW-SMOKE, LOW-TOXICITY MATERIALS ARE NOT SIMPLY A REGULATORY REQUIREMENT; THEY ARE A HUMANITARIAN IMPERATIVE”

Replin by Hainsworth technical innovation manager CCO Angela Augusto

The resulting applications of this materials science and engineering are important in cabin fire situations and post-crash scenarios, as Gabillon remarks. “Fire-resistant materials are critical in these situations because they help control how a fire develops and spreads. Our materials are designed to slow the surface spread of flame and interrupt the combustion process through effects such as controlled charring and reduced oxygen availability,” he says. “In practical terms, these materials buy valuable time when it matters most.”

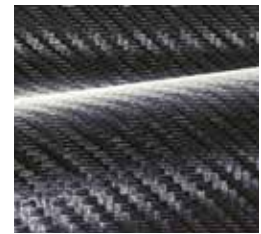
Flashover point

In a cabin fire situation, time is everything, according to Lantal CEO Rickenbacher. “Cabin materials are part of the aircraft's passive safety system. They are always present and working in the background without requiring any activation,” he observes. “Better-performing materials can help prevent a localised fire from escalating rapidly and provide valuable additional time during an emergency situation.”

Research into survivable accidents consistently shows that the time between initial ignition and flashover is the critical window for passenger evacuation, reports Replin by Hainsworth's Augusto. “Fire-resistant cabin materials directly extend that window. A fabric that self-extinguishes, resists flame spread and produces low levels of toxic smoke can make the difference between a survivable and unsurvivable situation,” she emphasises.

“This is measured by what is known as the Limiting Oxygen Index (LOI), essentially a measure of how much oxygen a material needs to keep burning. Normal air contains around 21% oxygen; wool's natural LOI of 25%-26% means it needs more oxygen than is present in the atmosphere to sustain combustion, making it inherently self-extinguishing,” Augusto states.

“In a smoke-filled cabin, passenger disorientation and toxic gas inhalation are major causes of incapacitation. So low smoke, low toxicity materials are not simply a regulatory requirement: they are a humanitarian imperative,” concludes Augusto. ●



▲ Inspiral Group's fire retardant range
◀ Passengers are largely unaware of fire engineering

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CONNECTIVITY BEYOND SPEED

Multi-orbit strategies are changing the traditional IFC parameters, writes **Greg Whitaker**

The inflight connectivity (IFC) market is entering a new phase of maturity, one defined less by headline speeds and more by consistent reliability.

Conversations with Gogo, Hughes and Viasat at this year's AIX event have revealed an industry converging on common technical principles, while diverging sharply in how providers position themselves within an increasingly complex ecosystem.

Bandwidth focus

For more than a decade, IFC competition centred on bandwidth. That era, according to all three providers, is effectively over.

"The problem we're solving now is not speed," says Dave Falberg of Gogo. "All of the solutions that we provide now have enough bandwidth and capacity to support the applications that our customers use."

He explains that the focus has shifted to consistency, reliability and availability – factors that increasingly define how passengers perceive the journey.

Hughes echoes this sentiment, pointing to an "insatiable need for connectivity" in the post-pandemic travel environment, where even short-haul passengers expect uninterrupted access. Meanwhile, Viasat challenges the industry's fixation on speed altogether, arguing that real-world user experience often shows little perceptible difference between competing technologies once content is loaded and streaming smoothly.

The message is clear: connectivity is no longer judged by peak performance metrics, but by how invisible – and dependable – it feels.

Mainstream multi-orbit

If there is one area of near-total alignment, it is the inevitability of multi-orbit architecture.



Gogo describes its approach as “agnostic,” building a best-of-breed portfolio across LEO, GEO and even ATG systems to match diverse customer missions. Hughes has taken this further with its “fusion” concept, enabling simultaneous use of multiple bands and networks to combine capacity and improve resilience. Viasat, for its part, is introducing terminals capable of connecting to different orbits concurrently, managing traffic seamlessly at the application level.

The rationale is straightforward: no single network provides complete global coverage or guaranteed uptime. Regulatory barriers, geographic limitations and service variability mean redundancy is essential, not optional.

In this sense, multi-orbit is no longer a differentiator – it is quickly becoming the baseline expectation. As connectivity becomes more reliable, its importance has grown and IFC is now inseparable from the overall passenger experience.

Falberg notes that even when other aspects of a flight perform flawlessly, a connectivity failure can tarnish the entire journey. Hughes’ Reza Rasoulman reinforces the point, describing widespread frustration among passengers and airlines when legacy systems fail to deliver.

At the same time, passengers are demonstrating increasing dependency. Viasat reports engagement rates of 30–80% or higher on aircraft offering free connectivity, underlining how integral onboard connectivity has become to modern travel behaviour.

The implication for airlines is profound: connectivity is no longer an ancillary service. Rather, it is now a core component of the cabin experience, as critical as seating, catering or punctuality.

‘THE PROBLEM WE’RE SOLVING NOW IS NOT SPEED’

Dave Falberg, Gogo

‘Free connectivity’ economics

The rise of “full, fast and free” connectivity is another major shift reshaping the market.

While paid access once generated modest uptake – often in the single digits – free or freemium models are driving dramatically higher engagement levels. Hughes estimates usage rates of 30–50% in such scenarios, while Viasat sees even greater penetration when supported by targeted engagement strategies.

To sustain these models, providers are expanding beyond connectivity into digital ecosystems and monetisation platforms. Viasat, for example, is investing heavily in advertising-based solutions and passenger portals that enable airlines to offset costs and generate revenue through partnerships and sponsorships.

This trend reflects a broader shift: connectivity is evolving from a standalone product into a platform for passenger engagement and revenue generation.

Futureproofing

If the direction of travel is clear, the pace of change remains a challenge.

Satellite constellations are proliferating, technologies are evolving rapidly, and airlines face the risk of committing to solutions that may

1. An EASA HDX antenna
2. The ViaSat-3 F1 in production at the Boeing factory

80%

Viasat reports engagement rates of 30-80% or higher on aircraft offering free connectivity, underlining how integral onboard connectivity has become to modern travel behaviour



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'WHILE THE MARKET HAS FOCUSED ON HEADLINE SPEEDS, THE TRUE TEST OF PERFORMANCE IS A SIDE-BY-SIDE COMPARISON'

Maik Brueckner, Viasat



1

become obsolete within a few years. Against this backdrop, futureproofing has become a central design principle.

Gogo emphasises modular systems that can be upgraded with minimal downtime, avoiding costly aircraft modifications. Hughes similarly highlights its interchangeable antenna architecture and multi-modem approach, allowing airlines to adapt as new networks emerge. Viasat is designing upgrades that can be completed within overnight maintenance windows, reducing operational disruption.

Across the board, the goal is to protect airline investment in an environment where technological cycles are accelerating.

Despite broad agreement on industry trends, the three companies reveal distinctly different strategic identities.

Gogo positions itself as a customer-focused integrator, tailoring multi-orbit solutions to the specific needs of business aviation clients. Hughes emphasises its role as a technology enabler, providing the underlying hardware and architecture that supports next-generation connectivity. Viasat, by contrast, champions a vertically integrated model, controlling everything from satellites to software to passenger monetisation tools.

These differences reflect each company's place in the value chain – but also highlight the diversity of approaches in a market where no single model has yet emerged as dominant.

One of the more striking themes emerging from the discussions is the growing level of market noise and complexity.

With new constellations launching, high-profile entrants raising expectations, and competing claims around performance, airlines are increasingly faced with what Hughes describes as “decision fatigue”.

Maik Brueckner, Viasat's senior director of commercial air, Europe points to a disconnect between perception and reality, noting that customers often attribute performance to the most visible brands, regardless of the underlying technology in use.

“While the market has focused on headline speeds, the true test of performance is a side-by-side comparison,” he explains, adding that a true test of a service is when it is loaded and buffered in the background.

In this environment, credibility – backed by proven performance at scale – is becoming as important as innovation.

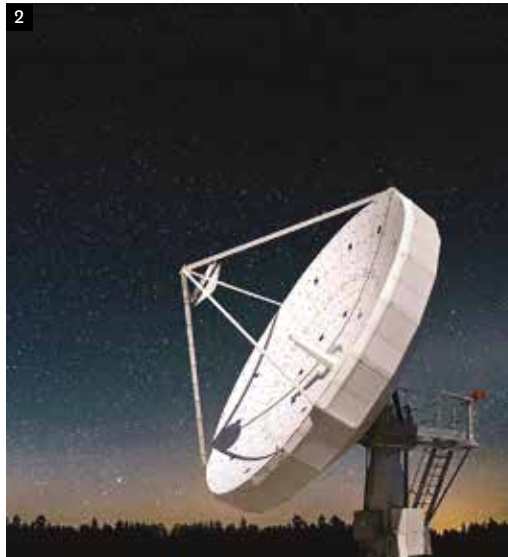
Taken together, the interviews point to an IFC market transitioning from rapid innovation to operational delivery at scale.

The technology pieces such as multi-orbit networks, advanced antennas and high-capacity satellites, are largely in place. The challenge now lies in integrating them seamlessly, delivering consistent performance globally, and aligning business models with the realities of high passenger demand.

As Falberg suggests, the goal ultimately is a connectivity experience that resembles mobile roaming: always available, effortless and, above all, invisible.

For airlines and passengers alike, that future cannot arrive soon enough. ●

1. Connectivity onboard is valued by passengers
2. A Viasat antenna



2

50%

Paid access once generated modest uptake, but free or freemium models are driving dramatically higher engagement levels. Hughes estimates usage rates of 30–50% in such scenarios, while Viasat sees even greater penetration when supported by targeted engagement strategies



THE

RESPONSIVE

CABIN

Greg Whitaker discovers how lighting, seating and connectivity are converging to elevate passenger wellbeing

At this year's Aircraft Interiors Expo (AIX) in Hamburg, one theme stood out across the show floor: the aircraft cabin is no longer being designed purely for transport or even comfort. Instead, it is being reimagined as a controlled environment for passenger wellbeing.

From intelligent lighting systems and multi-sensory seating to immersive entertainment platforms, suppliers are increasingly aligning technologies to improve passenger wellbeing, both during the flight and when people are back on the ground.

Illumination to behavioural design

Lighting has evolved far beyond basic illumination. As Shervin Rezaie of Aircraft Lighting International explains, the shift to RGBW lighting systems marks a turning point in how airlines use light.

"Five years ago, RGB lighting was a novelty," he notes. "Now, if you don't have full-spectrum RGBW, you're not in the game."

The key development is not simply colour variation, but intentional use of light to influence passenger behaviour and mood. Rezaie points out that cool blue tones during take-off help reduce

anxiety, while warm lighting enhances onboard service ambience and dynamic scenes support sleep, relaxation and wake-up cycles.

This reflects a growing understanding of lighting as a subconscious tool. Passengers may not explicitly notice the changes, but they experience the benefits in reduced stress and improved comfort.

Equally important is accessibility. LED retrofit systems now allow airlines to upgrade legacy cabins quickly and cost-effectively, bringing modern lighting, and its wellbeing benefits, to older aircraft without major downtime.

Looking ahead, lighting is also becoming a branding and personalisation

1. Aircraft Lighting International offers the full spectrum of colour 2. RAVE's Origin concept uses a new app-based platform 3. The Origin suite wraparound display

"PASSENGERS MIGHT NOT SAY THEY NOTICED THE LIGHTING – BUT SUBCONSCIOUSLY, THEY FEEL IT"

Shervin Rezaie, Aircraft Lighting International



tool, with the potential for projection, custom colour schemes and even aircraft-specific experiences tied to passenger profiles or charter clients.

Even subtle variations can reinforce brand identity, often without passengers consciously recognising the source of the improvement.

As Rezaie notes, "Passengers might not say they noticed the lighting – but subconsciously, they feel it. As you're taking off, everybody has a little bit of flight anxiety. So you put it to a nice soothing blue."

According to Rezaie, the behavioural aspect of lighting is crucial to creating a relaxed ambiance on the flight. "Subconsciously, even if you're scared, you don't even know it – you're going to be relaxed. But then when it's time to drink, let's turn it up into a warmer atmosphere and have fun."

Seating and wellbeing

If lighting sets the mood, seating is increasingly responsible for managing the passenger's body itself.

Caynova's SkySpa concept represents one of the most comprehensive approaches to this challenge. Rather than designing a seat in isolation, the company integrates a suite of technologies into existing seat structures, focusing on the full passenger journey across flight phases.

The system combines thermal regulation (heating and cooling) with massage functions as well as targeted airflow via fans and "air scarf" systems. There's even an option for 'scent delivery' which they say increases mood and alertness.

These elements are synchronised across four passenger stages of a long-haul flight: relaxation, sleep, wake-up and activation.

The most significant innovation lies in active cooling, which removes moisture from around the passenger rather than simply lowering temperature. This tackles one of aviation's most persistent challenges: disrupted sleep caused by heat build-up under blankets.

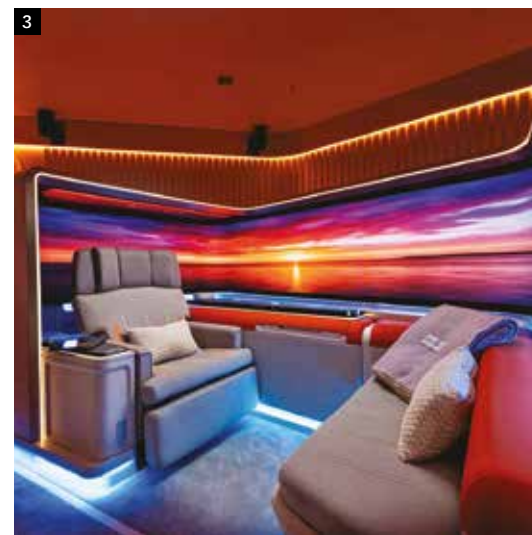
"Passengers often wake up because they get too warm," explains Laurie Hartmann, marketing lead at Caynova. "By controlling moisture, we allow them to stay asleep longer."

This reflects a broader shift from comfort to wellbeing science. The aim is not just to make passengers comfortable in the moment, but to ensure they arrive in better physical condition, addressing fatigue, dehydration and circadian disruption.

Importantly, these systems are being engineered with airline constraints in mind. Despite combining multiple features, the company says that the entire SkySpa package adds roughly one kilo, demonstrating that wellbeing enhancements need not come at the expense of weight efficiency.

RAVE on

One thing that struck us while walking the halls of AIX was that the real transformation of the future passenger experience lies not in individual innovations, but in how they interact.





1. Aircraft International Lighting's blue tones help to calm passengers 2. The Origin suite concept on display at AIX

“WE WANT TO BRING A MODEL THAT’S MORE LIKE THE APP ECONOMY ON THE GROUND”

Ben Asmar, RAVE Aerospace

Imagine a long-haul journey where lighting gradually shifts to cooler tones while seat cooling activates to encourage sleep and cabin scents adjust subtly to reinforce relaxation or stimulation. Wouldn't it be cool if the IFE system could sync with lighting to create immersive entertainment environments and wake-up phases are coordinated across lighting, massage and airflow?

RAVE Aerospace, newly independent following its divestment from Safran, is pushing towards a more open and dynamic IFE ecosystem, and its booths at AIX featured working mock-ups of this new type of cabin. On display was a generously sized premium suite known as 'Origin', dominated by a giant, curved screen and integrating all of the systems mentioned above into a combined AV experience.

While what was on display was still a concept, some of the technologies are very much real. Central to RAVE's strategy is the transition from closed systems to an app-based platform called OS2, allowing third-party developers to create applications for onboard screens.

This will enable real-time passenger engagement through gaming and

shopping or personalised services and content. This in turn could mean new revenue streams via advertising and commerce.

Crucially, the way that the system has been designed allows for rapid deployment of new features, which will shorten development cycles from years to weeks.

“Why should airlines wait years for new functionality?” asks Ben Asmar, VP products and strategy at RAVE Aerospace. “We want to bring a model that's more like the app economy on the ground.”

This new functionality is of little use if passengers can't see it. Most of us have experienced 'dark flights' where the IFE has been switched off due to broken components. However, Asmar says that RAVE, (which is an acronym for Reliable, Affordable and Very Easy), has a line of screens that can help counter this.

“These screens need to last up to 20 years. OLED technology, while impressive, may struggle to maintain performance over that lifespan. Mini-LED, based on LCD, is proven and reliable – it still delivers fantastic visuals, and passengers would be happy with either,” he says. “We have prioritised

reliability above all, in line with our core principles.”

However, in the new multi-sensory environment of the integrated cabin, the seatback screen only forms part of the overall experience. Asmar assures us that this does not render it obsolete.

“Seatback screens won't disappear – they'll evolve, especially as they become connected,” he comments, explaining that passengers will expect to multiscreen just as they do at home as fast, reliable internet becomes the norm on all aircraft.

The modern aircraft cabin is entering a new phase – one defined not just by comfort or technology, but by human-centred design.

Lighting influences mood. Seating manages the body. Connectivity enables responsiveness and personalisation. Together, they are forming a cohesive ecosystem designed to reduce stress, improve rest, and enhance the overall travel experience.

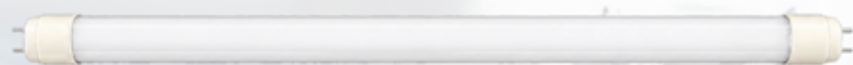
As these systems become more integrated, the ultimate goal is clear: to ensure passengers don't just arrive at their destination, but arrive feeling rested, calm and ready. ●

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REMOVING THE BAGGAGE

Airports and airlines can use new technology to get bags where they should be says **Marc Pyette**, product manager airport experience, Dohop

Airports are under growing operational and commercial pressure as connecting travel becomes more complex. The rise of virtual interline and self-connect itineraries has expanded passenger choice and allowed airlines to grow networks more quickly, but it has also introduced new dependencies between airlines, airports and travellers – particularly those checking baggage. In this context, airside baggage transfer is becoming more important, not just as an operational function but as a factor in competitiveness.

Alternative interlining is a key driver of this shift. Virtual interline and self-connect journeys now account for hundreds of millions of passengers annually and continue to expand.

Time and effort

However, where airside baggage transfer is not available, passengers must reclaim and re-check luggage, moving landside and re-entering secure areas. This creates additional pressure across systems. Baggage reclaim areas, check-in counters and security screening points all see increased demand, particularly during peak periods. These inefficiencies can affect overall capacity, as resources are diverted from originating passengers to manage avoidable transfer flows.

The operational impact is matched by the passenger experience. Self-connecting travellers often work within tight timeframes, and the need to collect and recheck baggage reduces connection



▲ Interlining with bags can be complex

reliability. Delays or missed connections can erode confidence in both airlines and airports, especially where passengers perceive the process as complex.

Commercial element

There is also a commercial dimension. Passengers who remain airside typically spend more time – and money – in retail and food and beverage areas than those navigating landside processes. Reducing unnecessary recirculation therefore has direct revenue implications. For regional and mid-sized airports, the ability to support airside transfers can also strengthen their position in attracting airline partnerships and connecting traffic, offering an alternative to congested hub airports.

Industry efforts are emerging to address these challenges. Frameworks such as those developed by IATA aim to standardise approaches to virtual interline travel, while data-sharing protocols help improve baggage tracking and handling performance. At the same time, new operational solutions are being introduced to enable airside baggage transfer even where no traditional interline agreements exist.

Regardless of the commercial model involved, certain fundamentals remain consistent. Airports need accessible transfer facilities, reliable handling processes, and the ability to track baggage at key points. Shared data and infrastructure, rather than specific airline agreements, are central to improving performance.

As self-connect and virtual interline travel continues to grow, coordinated approaches between airports and airlines will be essential. Those that invest in effective baggage transfer processes will be better positioned to manage demand, maintain operational resilience and support a more seamless passenger experience. ●

“SHARED DATA AND INFRASTRUCTURE, RATHER THAN AIRLINE AGREEMENTS, ARE CENTRAL TO IMPROVING PERFORMANCE”



CRYSTAL CABIN AWARDS: WINNERS

A rundown of the products and teams that took the trophy at this year's event

The 2026 Crystal Cabin Awards, held in Hamburg on April 14, celebrated the aviation industry's most innovative cabin concepts. Eight winners were selected from 85 entries by an international jury of 27 experts. Innovations focused on accessibility, sustainability, digitalisation and passenger comfort.

Highlights included Diehl Aviation's inclusive lavatory navigation system, All Nippon Airways' space-efficient lie-flat seating, and Delta Air Lines' connected onboard platform. A new start-up category underscored emerging talent, while overall trends emphasised smarter, greener and more inclusive cabin designs shaping the future of air travel.

Over the last few months, we've looked at the many innovations shortlisted for the Awards. Here, finally, is the list of winners picked by the panel of expert judges.

ACCESSIBILITY

Winner: Diehl Aviation

AURS: Adaptive User Routing System

True accessibility in air travel remains unfinished business. This year's winner shows how inclusive design can directly improve dignity, independence and onboard comfort.

AURS (Adaptive User Routing System) is an inclusive cabin concept that makes aircraft lavatories genuinely navigable for blind and deaf passengers. It combines an accessible physical layout with a responsive digital interface, delivering visual safety prompts alongside tactile wayfinding cues tailored to individual needs.

The jury praised AURS as "a highly innovative yet practical approach to lavatory accessibility, embedding universal design within a standard architecture adaptable across multiple use cases". With personalised beacon settings and intuitive interfaces, it offers a dignified, near-term solution with clear potential across the wider aviation ecosystem.

CABIN CONCEPTS

Winner: All Nippon Airways with Acumen Design Associates
THE Room FX

What will tomorrow's cabin feel like? This category celebrates concepts that rethink space, efficiency and experience. THE Room FX sets a striking benchmark.

By combining two seats into a single compact structure, the concept reduces both weight and footprint – freeing up space for greater comfort and higher



1. This year's award winners
2. The AviusULD Fire Tag
3. All Nippon Airways & Acumen Design Associates' THE Room FX
4. The AURS lavatory concept from Diehl
5. Collins Aerospace's SkyNook space



“INNOVATIONS FOCUSED ON ACCESSIBILITY, SUSTAINABILITY, DIGITALISATION AND PASSENGER COMFORT”

density. Its key innovation is a simplified mechanism: a fixed seatback with a moving legrest, creating a continuous lie-flat surface with fewer components.

The jury commended it for “delivering a spacious passenger experience within a highly constrained footprint”. By balancing comfort with airline economics and minimising mechanical complexity, THE Room FX expands perceived space without adding weight – even in narrower fuselages.

PASSENGER COMFORT

Winner: Collins Aerospace SkyNook

Comfort is now a baseline expectation rather than a luxury. SkyNook responds by rethinking how cabin space can be used.

Installed in the aft section of widebodies, this semi-private zone makes use of underutilised space between the sidewall and reduced-density economy rows. The result is a flexible retreat

area offering privacy and calm – ideal for families, passengers with additional needs, or those travelling with pets, assistance dogs or bulky carry-on items.

The jury highlighted its ability to “transform previously unused space into a flexible, value-generating area”. Practical, adaptable and quick to implement, SkyNook delivers tangible benefits for both passengers and operators.

CABIN TECHNOLOGIES

Winner: AviusULD with Eloc8 SmartULD – Fire Tag

The best cabin technology works quietly in the background – enhancing safety without adding complexity. The SmartULD – Fire Tag is a strong example.

This compact tracking device detects early thermal runaway in lithium-ion batteries – up to two hours before a fire event. It can be installed in overhead bins and cargo ULDs, extending protection across both passenger and freight operations.

The jury recognised its “simple and elegant response to a critical safety challenge”. With minimal certification burden and seamless integration, it offers a practical, forward-looking solution with the potential to become an industry baseline.





IFEC & DIGITAL SERVICES

Winner: Delta Air Lines Connected Onboard Platform

Digital experience is fast becoming a key differentiator in aviation. Delta's Connected Onboard Platform (CoP) shows what true integration can deliver.

As part of the Delta Sync ecosystem, CoP unifies data from IFE, connectivity and onboard operational systems into a single architecture. By replacing siloed, multi-vendor systems with a consolidated data layer, it enables consistent processes and more effective use of passenger and operational data.

The jury described it as “a groundbreaking advancement”, integrating customer, crew and operational systems within an open, flexible platform. Its connectivity-agnostic design positions it as a major step forward for IFEC ecosystems.

SUSTAINABLE CABIN

Winner: Recaro Aircraft Seating R Sphere – Sustainability Concept Seat

Sustainability is now central to cabin design. Recaro's R Sphere demonstrates

how environmental performance and functionality can align.

The modular seat reduces weight by around 1.5 kg per passenger, equating to approximately 55 tonnes of CO₂ savings per single-aisle aircraft annually. Built from recyclable materials with service-friendly components, it also supports efficient maintenance and cabin flexibility.

The jury praised its “holistic approach to sustainability”, combining weight reduction, circularity and material innovation – including a sugar cane-based composite. Already in service, it delivers measurable environmental gains without compromising design or performance.

BREAKTHROUGH START-UPS

Winner: Quvia In-Flight Digital Experience Platform

This new category highlights the agility and fresh thinking of start-ups. Quvia's platform stands out as a clear industry disruptor.



Its AI-powered system provides real-time insight into connectivity, IFE and overall system performance. By combining analytics, diagnostics and data traffic management, it enables airlines to identify faults faster, prevent outages and improve fleet-wide reliability.

The jury called it “a true game changer”, noting its ability to consolidate data from multiple suppliers into a single, actionable view – bringing clarity and control to an increasingly complex digital environment.

UNIVERSITY

Winner: Georgia Institute of Technology (with Airbus, Delta Air Lines and TU Delft) SMARTrack – Optimised Cabin Cleaning Dispatching System

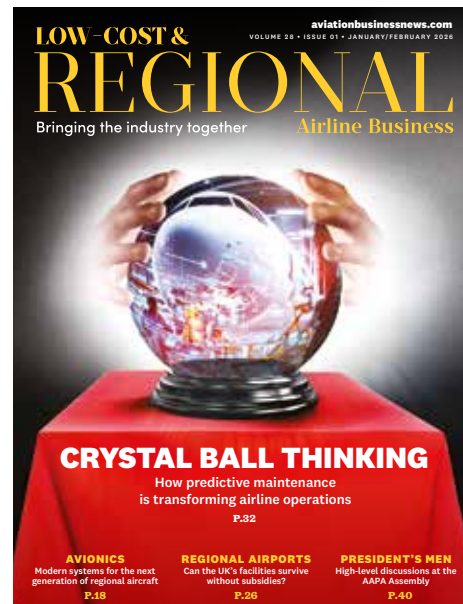
Academic-industry collaboration continues to drive practical innovation. SMARTrack focuses on one of aviation's key operational pressures: turnaround time.

The system optimises cabin cleaning dispatch through centralised data, real-time communication and intuitive task management tools. Improved coordination reduces delays, cuts fuel burn and lowers emissions – supporting both efficiency and net-zero goals.

The jury recognised its “clear operational benefit with a straightforward implementation pathway”. By streamlining workflows and improving turnaround performance, SMARTrack delivers measurable gains for airlines and a smoother experience for passengers. ●



1. Quvia's AI-powered dashboard
2. Delta's Connected Onboard Platform in use
3. The Recaro R Sphere concept seat



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2025 Testimonials



"I spent the last two days in Dublin representing Aegean Airlines at the PAM Europe 2025 conference. It was inspiring to hear operators share insights from their predictive maintenance journeys - some well underway, others just beginning. One thing is clear: predictive maintenance will soon be an industry standard."

Emmanouil Nanos, Reliability and Maintenance Programme Engineer, Aegean Airlines



"Thank you to the PAM Europe team for fostering a collaborative environment and insightful exchanges on the digital transformation of our sector. These discussions and case studies highlight just how crucial innovation and teamwork are to advancing predictive technologies in aviation."

Mike Roemer, Director, Digital Fleet Management, United Airlines



"This year's discussions offered a sharp, practical look at the real predictive maintenance journey - not from theory, but directly from the experiences of operators like Ryanair, easyJet, Delta Air Lines, United Airlines, Vueling Airlines, Aer Lingus, British Airways and Condor Flugdienst GmbH."

Amanjot Singh Bhambra, Aircraft Systems Specialist, Wizzair UK

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EURO DROP-IN SAF FACTORY DEAL AGREED

A licence to produce 100% drop-in
SAF in Europe has been signed



Latvia-based NorSAF has signed a licence agreement with chemical engineering firm KBR for the deployment of PureSAF technology.

PureSAF was originally invented and developed by Swedish Biofuels AB and licensed to KBR for commercial deployment. The new agreement grants NorSAF exclusivity to use the technology, and potentially developing Europe's first commercial-scale facility capable of producing 100% drop-in sustainable aviation fuel (SAF/eSAF).

Unlike traditional sustainable aviation fuels that must be blended with conventional fossil kerosene to safely lubricate and seal aircraft engine components, a 100% drop-in fuel is unique because its chemical composition completely mimics fossil jet fuel, allowing it to power existing aircraft and fuel infrastructure at full strength without any modifications.

While current PureSAF certification allows for a 50/50 blend with fossil kerosene, regulatory approval for the fuel to be used at 100% drop-in capacity in Europe is currently underway and is anticipated by industry participants in 2026 subject to applicable certification approvals by ASTM.

Latvian base

The planned location for the NorSAF project is the Port of Liepaja, Latvia. If built, it will produce both SAF from advanced bioethanol and eSAF, a synthetic fuel made from green hydrogen and biogenic CO₂. Greenhouse gas

emissions from the proposed production process are projected by project leaders to drop by approximately 83% compared to conventional jet fuel production. The intent is to source all feedstocks within Europe to strengthen the continent's energy independence and industrial resilience.

Energy independence

"We are delighted to have collaborated with KBR to bring PureSAF technology to Europe," says Jānis Kisiels, board member of NorSAF. "Recent global events have underscored that energy sovereignty is no longer just an economic goal, but a matter of national and regional security. By producing a sustainable, 100% drop-in fuel at scale using local, European-sourced feedstocks, we are building a resilient, self-sufficient energy ecosystem that reduces our dependence on external fossil fuel markets and strengthens Europe's industrial backbone."

Avia Solutions Group, is acting as a partner on the project. NorSAF will benefit from access to the Group's aviation infrastructure, including its subsidiary Baltic Ground Services, which has extensive experience in SAF supply and distribution. ●

▲ The port of Liepaja, Latvia is the planned location of the plant

100%

"By producing a sustainable, 100% drop-in fuel at scale using local, European-sourced feedstocks, we are building a resilient, self-sufficient energy ecosystem that reduces our dependence on external fossil fuel markets and strengthens Europe's industrial backbone"

**"ENERGY SOVEREIGNTY IS NO LONGER
JUST AN ECONOMIC GOAL, BUT A MATTER
OF NATIONAL AND REGIONAL SECURITY"**

Jānis Kisiels, board member, NorSAF

BRAZIL'S OPPORTUNITY TO BECOME AN SAF POWERHOUSE

The Latin American country has all the prerequisites to become a major player, but can it deliver?

ATA highlighted Brazil's opportunity to become a SAF powerhouse at its 82nd Annual General Meeting gathered in Rio de Janeiro, Brazil.

Brazil has one of the world's largest biomass feedstock potentials, around 180 Mt by 2050, which could generate around 60 Mt of SAF, it was pointed out at the conference.

Looking to 2030, Brazil's sustainably sourced sugar-based ethanol, as well as virgin and waste oils feedstock, could reach around 18 Mt, translating into approximately 12 Mt of SAF production potential. That equates to five times the estimated global SAF production in 2026 of 2.4 Mt.

Currently, Brazil has around 15 SAF projects underway. If all are completed, it would bring around 2 Mt of SAF online.

"Brazil has all the ingredients to be a global SAF powerhouse. It has one of the cleanest electricity mixes in the world as well as abundant feedstock," said Willie Walsh, IATA's director general. "Moreover, as the second largest producer of liquid biofuels in the world, the country benefits from deep expertise and developed infrastructure. Brazil has a real opportunity to be a global leader in aviation's decarbonisation.

"Embracing this opportunity will create jobs, reduce dependence on foreign fossil fuels, build new energy and agriculture industries, and grow the economy. With the right policies implemented in the right order, Brazil is ready to jump-start the market."

Refining base

In addition to feedstock availability, the combination of Brazil's experience in ethanol production and its established refining base gives the country several competitive advantages. This makes a strong foundation for scaling HEFA (Hydroprocessed Esters and Fatty Acids) and other advanced SAF pathways, particularly ethanol-to-jet, and it could enable Brazil to become a net exporter of SAF.



The economic benefits could be transformational. New industries and markets would emerge across a value chain that would span agriculture and feedstock development, logistics, infrastructure, refining, advanced fuel production and new export products. This would support jobs, energy security and independence, improved soils, enhanced natural capital and strengthened local communities.

However, SAF production in Brazil remains at an early stage. Achieving scale will require infrastructure, policy incentives and adopting a book-and-claim approach. As airlines will need some 500 million tonnes (Mt) of SAF to achieve the industry's net zero CO₂ emissions by 2050 commitment.

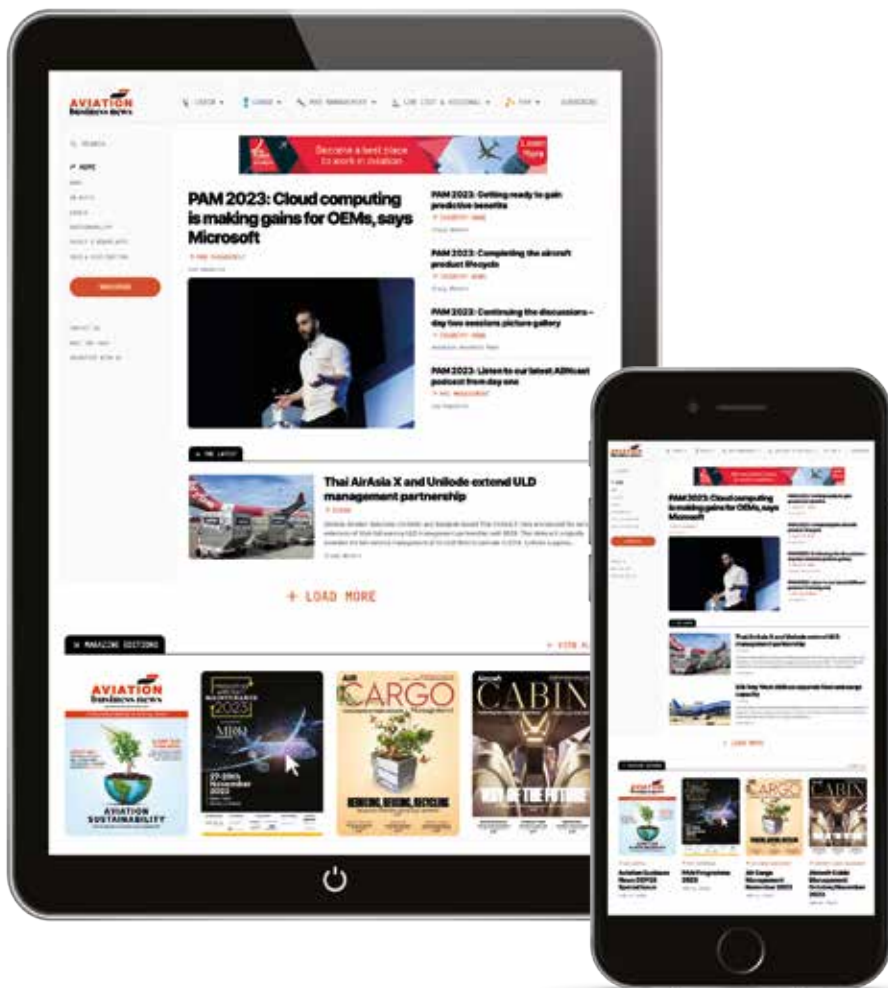
"Applying tried and tested policies in the right order of sequence is necessary to achieve scale and the price reductions that come with it, but leapfrogging the building of supply chains and going straight for mandates will not. Aligning policies with global standards and programs such as CORSIA will allow Brazil to make the most of its great potential," said Marie Owens Thomsen, IATA's senior vice president sustainability and chief economist. ●

▲ Brazil's economy could be transformed by investment in SAF production

500
Million

Airlines will need some 500 million tonnes (Mt) of SAF to achieve the industry's net zero CO₂ emissions by 2050 commitment

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