

KYDEX® PLAYGROUND

Empowering Aviation Interior Designers to Create Without Limits



As the aviation industry embraces digitalization and sustainability, design workflows are evolving to meet new expectations for speed, precision, and personalization. Airlines are seeking cabin environments that reflect their brand identity while reducing waste and accelerating time-to-market. At the Aircraft Interiors Expo (AIX) 2024, SEKISUI KYDEX responded to these trends by partnering with DeepBlue Studios to create a transformative digital experience called the KYDEX Playground™.

Explicitly developed for aviation interior designers, this interactive platform redefines how cabin environments are visualized, specified, and brought to life. By drawing on DeepBlue's experience working with airlines, OEMs, and seat suppliers, the team focused on aligning creative ambition with technical and operational reality, providing a fully digital platform for designers. The

Playground™ minimizes reliance on physical samples and empowers creative solutions that enhance the passenger experience.

At AIX 2025, the Playground™ debuted inside the SEKISUI KYDEX stand and quickly became a focal point for designers and airline representatives. Karyn McAlphin, Creative Design Lead for SEKISUI KYDEX, stated, "The response was overwhelmingly positive; the ability to visualize materials at scale and customize finishes instantly has changed how designers will approach CMF decisions, completely revamping the design workflow." Attendees praised its intuitive interface, powerful visualization capabilities, and potential to transform the color, material, and finish (CMF) process, a sentiment that was further echoed during the 2025 RedCabin Aircraft Cabin Innovation Summit in Dublin, Ireland.

A PROGRAM BUILT FOR DESIGNERS

Cabin programs face increasing pressure, tighter timelines, greater design complexity, and the need for confident decisions earlier in the development process. Tools that enable early collaboration and visualization are becoming increasingly essential for informed design decisions that impact passenger experience and airline goals.

From bespoke business class suites to high-efficiency economy cabins, the Playground™ supports every stage of the design journey. The intuitive interface streamlines collaboration, accelerates decision-making, and facilitates creative freedom. By replacing slow, manual

workflows with real-time, interactive experiences, it saves time and reduces costly errors, giving designers, seat suppliers, and airlines greater confidence in final specifications.

As a digital extension of the SEKISUI KYDEX designLab® Innovation Center, the Playground™ empowers design professionals to explore KYDEX® Thermoplastics, customize finishes, and build compelling CMF stories, instantly visualizing digital renderings of concepts much earlier in the development process.

COLLABORATION DRIVES INNOVATION

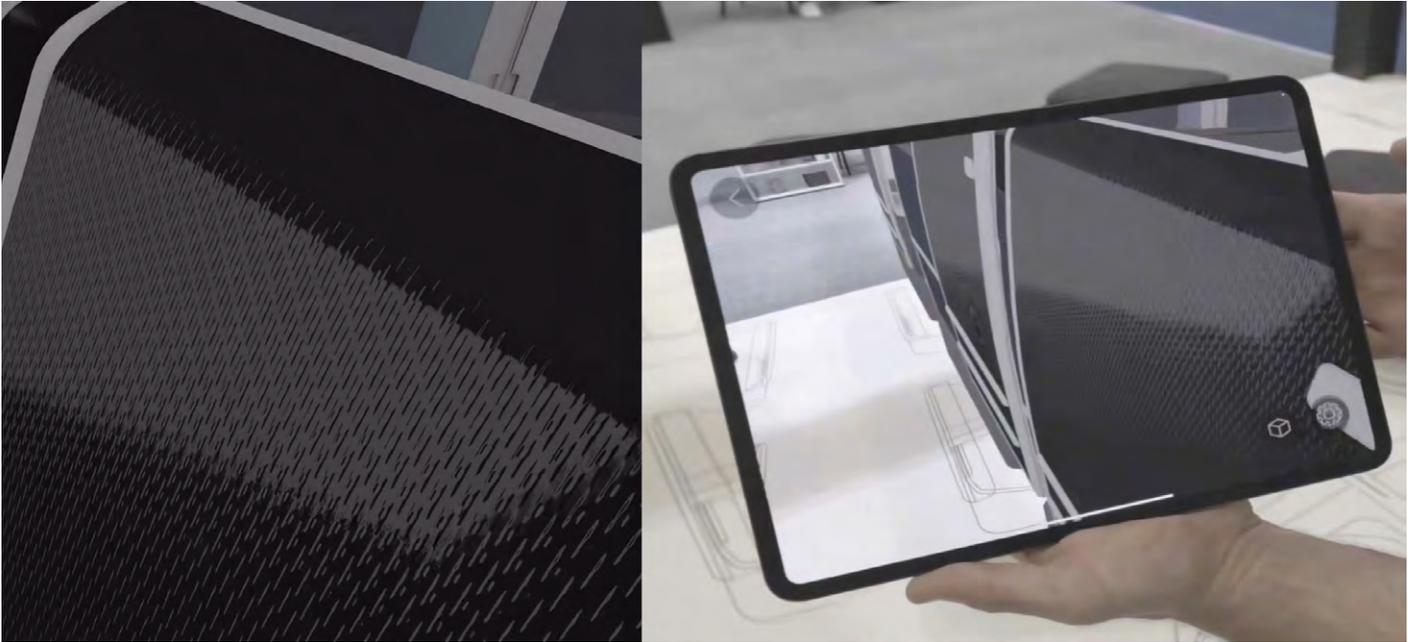
From the outset, DeepBlue Studios and SEKISUI KYDEX approached the concept as a shared learning experience in response to the real pressures facing airline cabin programs. Through stakeholder interviews and working sessions with airline representatives, designers, and suppliers, the collaboration identified common pain points that slow programs down.

Elevate Aircraft Seating generously granted permission to use their Ascent seat design as the foundational model, ensuring the platform reflected the real constraints of aircraft. Christopher Monteith, Sr. Director Program Management

for Elevate Aircraft Seating, stated, "Working with SEKISUI KYDEX and DeepBlue on the Playground™ showed us what true cross-industry collaboration can achieve."

Feedback from the Elevate team, strategic designers, and other stakeholders directly shaped the features and functionality, making the Playground™ a practical, airline-relevant tool that supports faster alignment and clearer communication.

As the platform grows, SEKISUI KYDEX aims to open it up to other partners across the aviation interior industry.



CUSTOMIZE, COLLABORATE, AND VISUALIZE

Why these three capabilities? Because they represent the foundation of modern cabin design: speed, flexibility, and alignment across global teams. Engineered to fit seamlessly into the aviation interior designer’s workflow, digital tools are transforming how designers move from concept to cabin-ready solutions. By integrating customization, collaboration, and visualization into a single platform, designers and airlines can move from inspiration to implementation with confidence and efficiency.

CUSTOMIZE:

The Playground™ empowers designers to experiment with a comprehensive library of KYDEX® Thermoplastics, textures, finishes, and colors. Now designers can instantly overlay custom graphics using Infused Imaging™ technology and see every change rendered in real-time. The platform’s interface is designed to foster creative freedom while ensuring every selection remains viable and meets aviation-grade compliance and performance standards.

COLLABORATE:

Collaboration is at the heart of the Playground™, from sharing concepts instantly to gathering feedback in real-time and making revisions collaboratively. The cloud-based platform enables designers, airline clients, OEMs, and internal teams to work together from anywhere in the world. The integrated project summaries track every decision, providing a transparent record for the design team and stakeholders.

VISUALIZE:

Digital tools enable designers to see their concepts come alive in true-to-life detail. Leveraging high-resolution 3D modeling and advanced AR rendering, designers can project KYDEX® Thermoplastics, finishes, and Infused Imaging™ graphics onto accurate seat and cabin models at a 1:1 scale. This immersive visualization enables designers to evaluate the interaction between materials, lighting, space, and other design elements in real-time. Whether in a studio, a mockup environment, onboard an aircraft, or even on the floor at AIX, designers can walk around, zoom in, and inspect every detail as if the finished product were physically present.

THE POWER OF AUGMENTED REALITY

Immersive visualization is becoming a standard expectation for design validation and stakeholder buy-in. One of the most transformative features is the advanced AR rendering capability.

In the world of aircraft interiors, the difference between good and great design comes down to the details: how a finish interacts with cabin lighting, how a texture feels at scale, or how a color story supports a brand's identity. Traditionally, designers have relied on physical samples, static renderings, or their imagination to bridge the gap between concept and reality. This process can be slow, expensive, and prone to misinterpretation.



Visualize materials at true scale, directly within the intended environment.



Accelerate decision-making, reducing the need for multiple physical prototypes and iterations.



Enhance stakeholder communication, ensuring everyone sees the same vision and reducing doubt in the specification process.



Empower creative exploration, encouraging innovation without the fear of expensive errors.

It is not just about seeing materials; it is about experiencing them in context, ensuring that every design choice supports the brand story and elevates the onboard experience.



AIRLINE & PASSENGER BENEFITS

Airlines are under pressure to deliver interiors that stand out, meet sustainability goals, and tell a compelling brand story. With digital tools like the Playground™, airlines can experiment with CMF combinations that reflect their identity and passenger expectations in a risk-free environment, allowing unique cabin aesthetics that differentiate the brand.

For passengers, this results in more thoughtfully designed cabin environments. With CMF decisions playing a key role in evoking a desired emotion in their onboard experience, digital tools like the Playground™ help airlines deliver distinctive, comfortable, and cohesive interiors that enhance satisfaction and brand loyalty.



MORE THAN MATERIALS: A COMMITMENT TO PARTNERSHIP

While the current version focuses on thermoplastic material selection, future iterations may include options for specifying non-thermoplastic elements, such as textiles and other cabin materials, further increasing the relevance and utility that the KYDEX Playground™ will play. “The Playground gives younger, highly creative CMF designers a safe space to experiment. They can push ideas all the way without waiting for the visualization team to provide them renderings or worrying about getting the spec wrong — and that’s incredibly powerful for studios,” stated Anthony Harcup, Founder & CEO of DeepBlue Studios.

Digital platforms like the Playground™ will redefine how cabin interiors are conceived and delivered in the future. As airlines demand faster development cycles, greater sustainability, and highly personalized passenger experiences, tools that combine real-time visualization, collaborative design, and material compliance will become indispensable. By bridging creativity and technology, digital tools will set the stage for more efficient cabin design that is also more expressive, sustainable, and aligned with evolving brand narratives.

SEKISUI KYDEX innovates and creates sustainable thermoplastic material solutions for the next generation of product design.

SEKISUI Chemical’s corporate commitment to Speed, Service, and Superiority is realized through the KYDEX® Thermoplastics’ business model of manufacturing bespoke materials with short lead times in small quantities. This Quick Response Manufacturing (QRM) model at three manufacturing campuses expands beyond thermoplastic sheet. Our mission is to challenge what’s possible and deliver beyond imagination. SEKISUI KYDEX is more than a raw material supplier; we are a solution provider.

The material portfolio also includes injection molding resins, proprietary Infused Imaging™ technology, integral special

effects, unique textures, and custom products and design. As a collaborative partner and the world’s leading pioneer of thermoplastic solutions – done responsibly, we put innovation at the forefront, guiding you from beginning to end.

The SEKISUI KYDEX appLab™ and designLab® Innovation Centers are collaborative spaces for clients and customers to bring the supply chain together for rapid prototyping and design development. These spaces are the bridge between engineering and art. More than 300 dedicated professionals in Bloomsburg, PA, and Holland, MI, working with a global network of sales and distribution partners, are committed to delivering more than their customers can imagine.

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appLab@kydex.com



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