IC.IDO

3D Immersive Product Experience for Aeronautics & Aerospace Industries

www.esi-group.com
IC.IDO: THE PIONEER AND WORLDWIDE LEADER OF INDUSTRIAL IMMERSIVE VIRTUAL REALITY SOLUTIONS

End-to-End Virtual Prototyping

ESI boasts a unique know-how in Virtual Product Engineering, based on an integrated suite of coherent, industry-oriented applications, including Virtual Reality Solution, IC.IDO. IC.IDO is undoubtably an asset to any company who wishes to eliminate the use of physical prototypes. IC.IDO’s reliable and proven real-time physics simulation assures realistic behavior of virtual objects. With it’s best-in-class immersive user interface, you are able to fully engage with your virtual product just as you would with a physical prototype. IC.IDO improves design for manufacturability and maintainability of new products, showing, generating significant savings over the lifetime of a program.

The key factors for IC.IDO’s market success

- **FAST TURNAROUND RESULTS** - from data acquisition, and preparation to analysis
- **FIDELITY** - understand the dynamic behavior through real-time physics (contact and obstruction, behavior of flexibles, etc.)
- **REAL-TIME DECISION MAKING** - consider all options with your team and then conclude
- **PERFORMANCE** - large and complex data sets in real-time
- **USABILITY** - made for the engineer

Major aerospace companies such as **Airbus, AVIC, Boeing, Lockheed Martin**, and their suppliers, use IC.IDO to:
- Perform intuitive product experience early in the process
- Reduce turnaround time by enabling design for serviceability
- Optimize assembly / disassembly sequences
- Verify resources and tooling, support documentation and visualize workflow

Make the right decisions, at the right time, and execute cost-effectively with **IC.IDO**
IC.IDO in Aerospace Industry

Actively engage with your Virtual Prototype in a truly realistic way. Allow process engineering to work from the earliest stages of product design on robust concepts.

VIRTUAL ENGINEERING

Data review
- Perform early, multi-domain, product validation for collaborative problem identification and resolution
- Generate cost savings by providing a holistic virtual prototype as a high-grade substitute for physical prototypes
- Increase product quality and maturity through joint product and problem understanding

Product feasibility
- Frontload engineering activities; accelerate time-to-market and ensure on-time delivery
- Increase product maturity and decrease rework costs through early proof of feasibility and operability
- Enable early error identification and efficient decision making, massively reducing rework cost
- Reduce process validation times through interactive simulation of parts and mechanisms, with the ability to perform ad-hoc changes during a meeting

Operability and functionality
- Confirm compliance with minimum clearances and accessibility specifications during product usage and operation
- Reduce injuries and unnecessary discomfort
- Guarantee and increase customers’ perceived product quality
IC.IDO in Aerospace Industry

Detect and avoid assembly issues by virtual validation of assembly processes long before physical mockups are available.

**Assembly cell ergonomics, blind operation identification and hand clearance review and validation**
- Create better quality and throughput by improving workplace and process ergonomics
- Reduce unnecessary travel paths
- Efficiently deliver materials and tools to line and worker
- Reduce injuries and unnecessary discomfort
- Confirm compliance with ergonomically relevant installation guidelines
- Improve quality through more robust assembly procedures

**Tooling access review/ validation/ training**
- Accelerate time to production by verifying adequacy of tooling before ramp up
- Reduce the need for tooling rework and decrease development costs for special tools
- Avoid excessive downtime due to inadequate tooling/handling devices
- Improve throughput and cycle time with improved tooling ergonomics
- Accelerate time to production by fully training staff, virtually, in advance

**Virtual prototype part review**
- Accelerate time to market with lower costs for physical prototype as necessary familiarization can be conducted virtually
- Frontload activities which impact the manufacturing/assembly design prior to the design freeze
**IC.IDO in Aerospace Industry**

Generate tangible savings on warranty and maintenance costs by virtual validation of assembly and disassembly procedures at the earliest stage.

**VIRTUAL SERVICE**

**Tooling access review/validation/training**
- Maximize the use of standard tools and reduce tooling rework to decrease the costs of special service and maintenance tools development
- Optimize service and maintenance time due to validated tooling/handling devices
- Increase throughput and cycle time due to improved tooling ergonomics
- Provide interactive work instructions to deliver enriched information to the service teams, thereby reducing training costs and elevating the overall quality of maintenance
- Ensure worker safety through workflow validation and preventive familiarization

**Feasibility of maintenance, repair and overhaul operations**
- Validate maintenance feasibility and costs during early development stages
- Speedup product maturity and decrease rework costs with early proof of feasibility or problem identification
- Reduce planning times and increase planning reliability through virtual review and validation of clearance issues and tool operation
- Establish improved workflows and better understanding – 3D lifelike experience adds a new dimension of technical communication
- Leverage full view of maintenance requirements to improve design-for-maintainability
- Maintain the product correctly in the first instance by designing and validating multi-disciplinary data

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*IC.IDO enables instant evaluation of flexible components, such as tubes and cables*

*IC.IDO allows anticipation of workers' safety during maintenance operations, to decrease the risk of accidents*
ABOUT ESI GROUP

ESI is a pioneer and world-leading provider in Virtual Prototyping that takes into account the physics of materials. ESI boasts a unique know-how in Virtual Product Engineering, based on an integrated suite of coherent, industry-oriented applications. Addressing manufacturing industries, Virtual Product Engineering aims to replace physical prototypes by realistically simulating a product's behavior during testing, to fine-tune fabrication and assembly processes in accordance with desired product performance, and to evaluate the impact on product use under normal or accidental conditions. ESI’s solutions fit into a single collaborative and open environment for End-to-End Virtual Prototyping. These solutions are delivered using the latest technologies, including immersive Virtual Reality, to bring products to life in 3D; helping customers make the right decisions throughout product development. The company employs about 1000 high-level specialists worldwide covering more than 40 countries. ESI Group is a French company listed in compartment C of NYSE Euronext Paris.