

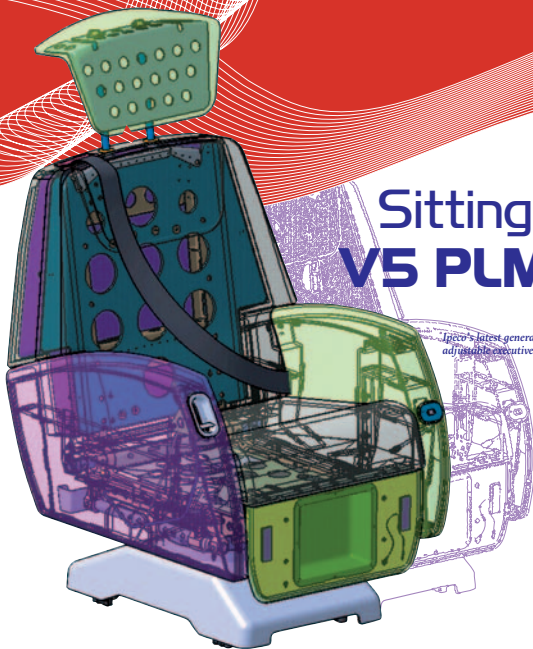


Build on 35 years of seat design expertise - Ipeco's latest electrically powered flight deck equipment. Consisting of over 4000 CATIA 'Instances'.



Sitting Pretty with V5 PLM Solutions

By David Treacher



Ipeco's latest generation highly adjustable executive seat.

size or weight, and incorporate adjustable vertical and horizontal lumbar support, specially contoured cushions and angled seat-backs. This means managing high volumes of anthropometric and ergonomic data to ensure that each seat is comfortable and easy to operate. All new seats are developed using V5 PLM Solutions, and today there are 15 projects being simultaneously developed using CATIA V5. All data is managed within ENOVIA SmarTeam.

MANAGING DATA

Dave Scott, Ipeco Technical Director explains, "We first purchased CATIA in 2001 and now have 21 seats of CATIA V5 in use. I am convinced that going with V5 was the best decision in order to be able to meet the needs of our customers. Since January 2006 we have been using ENOVIA SmarTeam to manage all our data. It was important for us to have a system which can grow in the future and not need re-writing with each release." Paul Marchant is Ipeco's Design Systems Engineer and has been responsible for overseeing the implementation of V5 PLM Solutions. He adds, "We use ENOVIA SmarTeam to manage all the parts of which there can be up to 2,500 in a single seat. In the past 9 months alone we have designed 780 different parts in CATIA V5. Using ENOVIA SmarTeam we are promoting the standardization of parts, ensuring adherence to our naming conventions and managing symmetrical components efficiently." For us, a big part of the V5 PLM solutions capability is the ease in which macros and productivity tools can be developed, even in house. With the V5 PLM philosophy of open-

ness within the applications programming interface we are able to continually improve our design process.

RIGS AND FIXTURES

During the development stage extensive testing ensures that the product will meet the stringent safety standards demanded by the aviation industry. The final phase of development is the dynamic certification testing. In this area, Ipeco has unrivalled experience and has invested heavily in extensive testing facilities where tests conducted at up to 26g are not uncommon. All the test rigs and fixtures are designed using CATIA V5 and have to represent the crew member's environment. For example, a rig for dynamically testing a pilot's seat must include representations of items such as the head-up display system and glare shield with which the pilot's body might impact during a crash.

DESIGN REVIEWS WITH 3DXML

With Ipeco's design engineers travelling to OEMs and conducting regular design reviews, having a "light" image of a proposed seat design within its immediate environment is invaluable. For this purpose Ipeco use 3DXML, of which Mr Marchant is a real advocate, "It enables us to quickly prepare impressive views of complete seats for our customers and prospects. We can dynamically show them around the seat, switch on and off different levels such as the trim, the adjustment mechanisms, and structure. On top of that we can embed all this in a presentation and it's so easy to use. For us it's a fantastic tool."

SUPPORT FROM INTRINSYS

Ipeco has been supported by Dassault Systèmes Partner Intrinsys since 2004. Dave Scott is very positive about the relationship with Intrinsys, "They provide us with excellent service and support. Intrinsys really know what it means to be a design house, and therefore have a good understanding of our environment. In fact, in addition to the training and consultancy they deliver, we are also now using them as a subcontractor to help on design and detailing for a new 3-piece 'divan' style seat for a new executive business jet. So far, I honestly can't think of any occasion when they have disappointed us." Mr Marchant is equally enthusiastic and adds, "They helped us to plan our implementation and provided any customization we needed to meet our specific requirements. Because we are working together on a seat project they even drop data straight into our ENOVIA SmarTeam database. Intrinsys make us feel as if we are their only customer and we can't ask for more than that." For the future Ipeco is looking to further exploit the capabilities of V5 PLM Solutions, using for example the Workflow and Web access of ENOVIA SmarTeam. The intention is to widen

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the exposure of ENOVIA SmarTeam across the company in order to increase collaboration between internal departments. It is also keen to evaluate the Human Builder module to represent various percentile mannequins during the seat design process. Concludes Mr Scott, "We have achieved a great deal with V5 PLM solutions in a very short time. If you had asked me 3 years ago if we would now have 21 seats of V5 PLM in 2006, I would have said that is not even remotely possible. Fortunately for us we are extremely busy, so it is good to know that we have the right PLM system and that Intrinsys are behind us." *

For more information:
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V5 PLM technology has enabled us to realise our designs in remarkable resolution.



Developing aircraft seats is a highly specialized and regulated environment. Leading Tier 1 supplier Ipeco is convinced that V5 PLM Solutions enable it to meet the needs of its customers.

LEADING SUPPLIER

Based on the east coast of England in Southend-on-Sea, Ipeco has been designing and building crew seats for the aviation industry since 1972. The company's seats can be found on executive aircraft, commuter aircraft, commercial jets, and military transporters. It offers more than 100 different models and its crew seats are now the preferred choice for over 300 airlines and operators. Today, around 40,000 of its crew seats are in service and a new range of flight-attendant seats has recently been introduced. Its expertise in this field is invaluable when integrating the latest seating technology into the modern flight deck environment. It has contributed to minimizing program risk for airframe manufacturers whilst providing maximum benefits of safety, reliability and maintainability for airline operators. Ipeco's crew seats provide comfort and performance for any occupant irrespective of

Dummy and seat on dynamic test sled.

