

Proficiency in Production



EADS - Defense Electronics

Location

Ulm, Germany

Industry

Aerospace, Electronics

Task

Design collaboration

CAD Systems

I-deas ® NX Series

CATIA ® V4

CATIA ® V5

Pro/ENGINEER ®

Immediate Business Goal

Accelerating product development

Technical Goals

- Active design reuse
- Reduce remastering
- Exchange intelligent 3D assemblies

Estimated Savings

Greatly reduced engineering costs

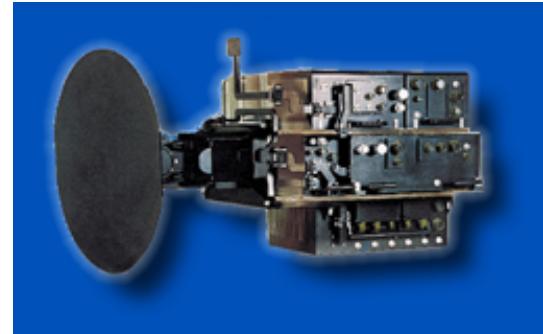
Strategic Benefits

- Homogeneous CAD environment
- Standardized hardware platform
- Improve partner collaboration

Overview

To support the EADS strategic corporate goal of strengthening the defense sector, EADS Defence Electronics needed an innovative approach to help collaboratively develop the military systems of the new A400M military transport aircraft. Participating in the working practice known as Airbus Concurrent Engineering, or "ACE", Defence Electronics needs to work together with other Centers of Competence (CoCs) in real time despite geographical distance and disparate design systems. The Business Unit receives design models in one CAD format from suppliers, works with components in another format, and delivers native parametric models to Airbus in yet another format.

Defence Electronics chose Proficiency to provide the key functionality required to collaboratively develop and successfully launch the A400M into a new market segment of heavy tactical military transport aircraft. Engineers at Defence Electronics complete designs in UGS PLM Solutions' I-deas NX Series while integrating partner provided components designed in Dassault Systèmes CATIA V4, Dassault Systèmes CATIA V5, and PTC's Pro/ENGINEER. The completed system assembly will be delivered to Airbus in native feature-based CATIA V5 format. The savings to Defence Electronics are significant and immediate.



Background

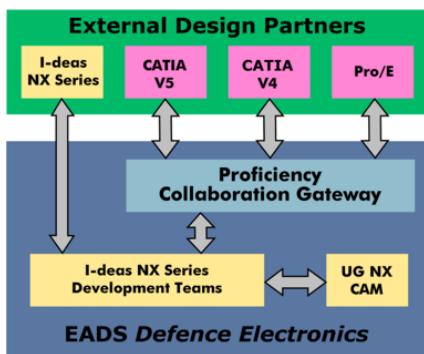
EADS is Europe's premier aerospace and defense company and is the second largest aerospace and defense company in the world. EADS Defence Electronics is one of the leading suppliers of defense electronics in Europe.

Design reuse is one of the keys to the success of the A300 series and will be instrumental for the success of the A400M. Proficiency's solutions enable EADS partners or divisions to collaboratively use engineering models despite differing design tools. Well-proven and economical features from existing aircraft can be used in the A400M and revised to rapidly respond to changing geopolitical requirements.

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Implementation Goals

Achieving commonality of components for the A400M means reusing features from existing Airbus aircraft, as well as collaborating with design partners using incompatible engineering applications. Even when a suitable component is found, it frequently requires modeling in the several different design systems being used by the partners. One EADS goal is to eliminate manual model recreation to accelerate product development.



Design partners utilizing different CAD systems provide original native files to Defence Electronics, allowing them to continue using the systems with which they are most efficient and productive. Defence Electronics then uses the Collaboration Gateway to programmatically create native parametric I-deas NX Series models for use in the larger assembly. Similarly, Defence Electronics uses the Collaboration Gateway to return models to its partners and customers in their preferred data format. The Collaboration Gateway provides a unified method of programmatic data delivery between EADS, its partners, and customers.

Revolutionizing Design Practices

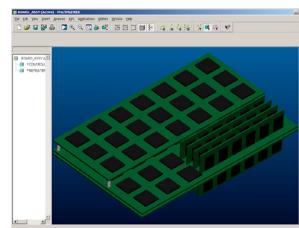
Proficiency has enabled EADS Defence Electronics to remove the cost and time associated with older methods of data exchange. Previously, designers shared “dumb” solids (via IGES or STEP) with their partners. All parameters that governed the models form, fit, or function were lost. Recipients had little choice but to manually re-master the parametric features required to complete the design. This wasted time and effort was repeated during each design iteration, compounding the problem and increasing program delays.

Create Momentum 

www.iti-global.com
info@iti-global.com
1-800-783-9199 US
+44-1954-234-300 UK

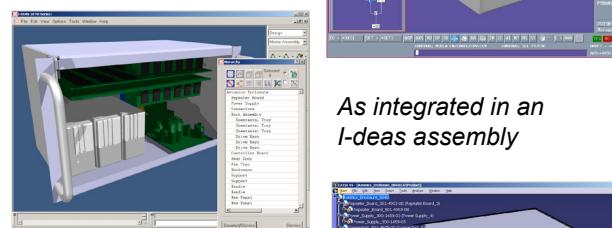
European Headquarters:
4 Carisbrooke Court, Anderson Road
Buckingsway Business Park, Swavesey
Cambridge, CB24 4UQ, England

Defence Electronics chose Proficiency to streamline design creation and automate delivery of CAD models, thus eliminating the inefficiencies in their traditional design process.



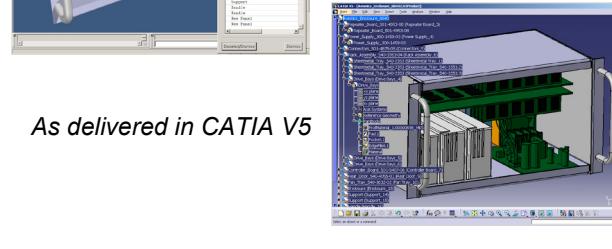
A component as designed in Pro/E

A component in CATIA V4



As integrated in an I-deas assembly

As delivered in CATIA V5



Upon completion of the design process, intelligent 3D assemblies (including assembly structure, features, history, constraints, etc.) are then delivered to Airbus in the required CATIA v5 format, again without manual remodeling.

“With the Collaboration Gateway, we have found a way to meet the format requirements of our customer and partner companies, resulting in a full and unlimited data transfer between the different CAD systems in use. It allows us to better manage data, and to save costs associated with a complex, extended, multi-CAD design environment.”

-Rudolf Hetterich, Dipl.-Ing.,
Senior Manager of Mechanical Engineering for EADS
Defence Electronics

World Headquarters:
5303 DuPont Circle
Milford, OH 45150 USA


International TechneGroup