



## edps – an authoring system for Airbus A380 maintenance and repair manuals

### Challenges & Benefits

With its new A380 wide-body jet, Airbus has deployed new and innovative methods and tools for many aspects of planning, design and information technology. One example of this is the newly developed system for producing the A380 operating manuals. The new Engineering Domain Publishing System (edps) is an intelligent repair documentation system which generates a document specifically tailored for the planned repairs for this aircraft upon the aircraft serial number being entered. This generates added value which results in reduced turnaround times, thus offering airlines time and financial advantages. This is achieved thanks to the expert combination of modern technologies and products as well as seamless integration in the Airbus Group's process and system environment.

### Solution

In contrast to the conventional manner of doing things with monolithic documents, technical authors working with edps use standardized document text blocks which can be combined and linked to each other by means of reciprocal referencing. The main advantage of this system is the high degree of re-usability, the consistent use of standard texts (e.g. warnings and notices) as well as particularly efficient variant management. New document versions arise as a result of changes to aircraft specifications and configurations. A configuration management system is used to automatically determine the impact of such changes on the documentation. This results in a list of the document text blocks which require modification.

### Acando – Your Partner

Acando is a consultancy company that in partnership with its clients identifies and implements sustainable business improvements through information enabled by technology. Acando provides a balance of high business value, short project times and low total cost. Acando's annual turnover is about EUR 160 million and the Group employs approximately 1,100 professionals in six European countries. Acando is listed at NASDAQ OMX Nordic. Acando's corporate culture is based on three core values: Team spirit, Passion and Results.

## sigmalink

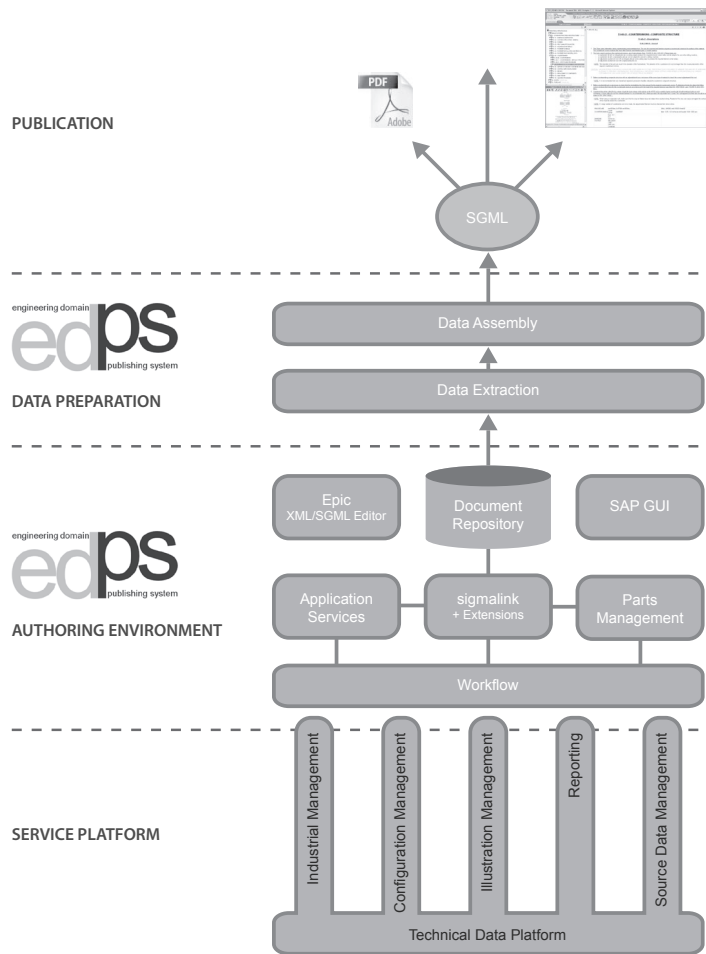
The central repository for all technical documentation data is the sigmalink authoring system provided by empolis GmbH.

## SAP iPPE

Product structures with object dependencies are controlled by the SAP Solution Integrated Product and Process Engineering (iPPE).

## SAP Workflow

The activities and release strategies for external and internal authors are controlled by the SAP Business Workflow.



Configuration management is offered as a service on the Technical Data Service Platform, which is responsible for providing all services related to technical aircraft data for the specialist applications. The process-driven services interweave the technical document processes with the production processes. Each modification impacting the documentation triggers a job. All the stages which this job passes through are supported by an SAP workflow covering preparations, document modifications, the review of the

changes and final release. The workflow also integrates external organizations, e.g. the aviation authorities, in the release process.

In addition to these process management functions, the technical data platform also offers further services, e.g. for reporting or illustration management. The latter function, for example, triggers illustration jobs including review, release and delivery. With the deep integration of the platform services in the edps system, an illustration can be requested directly from the authoring environment.

The central repository for all technical documentation data is the sigmalink authoring system provided by empolis GmbH. In addition to offering the usual standard functionality (version management, check-in/out, metadata management, user and role management, authorization), sigmalink is particularly characterized by its open architecture. In order to accommodate Airbus's manifold requirements, the server underwent substantial extensions and was supplemented with the addition of application services responsible for integrating the sigmalink repository in the SAP workflow, for example.

The Epic XML/SGML editor used in the authoring environment has also been supplemented with bespoke functions such as configuration management and mass conversion of measurement units in tables. Epic is used to create and edit the individual document text blocks, all of which are produced in an XML format based on the ATA (Air Transport Association) standard for technical documentation in the aviation industry. As a matter of principle, a distinction

is drawn between descriptive texts, instructions and component related content. The latter is not generated using the XML/SGML editor Epic but with the assistance of the iPPE (Integrated Product and Process Engineering). iPPE allows large tables to be managed for the identification of components which in turn are linked with master data derived from other SAP modules.

The manuals are produced by extracting and preparing the released document text blocks from the repository. In this connection, for example, the configuration within the document hierarchy is consolidated and references to document blocks reconfigured as cross-references in the target document. The format of the target documents complies with the ATA standard for technical documentation in the aviation sector. PDF documents are generated from this media-neutral description and placed in an online system which permits swift navigation and searches throughout the extensive documents as well as filtering on the basis of aircraft serial numbers.

The manuals are produced at all Airbus facilities and partially also by subcontractors in:

- **France**
- **Germany**
- **United Kingdom**
- **Spain**

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**edps currently supports the following manuals:**

- SRM (Structural Repair Manual)
- NTM (Non-Destructive Testing Manual)
- CMM (Component Maintenance Manual)
- DFPRM (Duct and Fuel Pipe Repair Manual)
- ARM (Aircraft Recovery Manual)
- AC (Airplane Characteristics for Airport Planning)
- MFP (Maintenance Facility Planning)

The manuals are produced at all Airbus facilities (France, Germany, the UK and Spain) and partially also by sub-contractors in these countries.

Acando possesses detailed knowledge of processes and methods in the aviation industry. For this reason, Acando consultants were involved in the project in all phases, additionally performing cross-sectional tasks such as subproject and quality management. As the operational departments were integrated in the iterative specification-defining and development process from an early stage, it was possible to convince the technical authors of the advantages of this new method of technical documentation very quickly.

The main organizational challenge involved the international harmonization and synchronization of the business processes. In this connection, crucial sub-processes were optimized or redesigned.

IT support commenced with the selection of software and continued with the definition of the software architecture, harmonization with the Airbus platform systems and implementation of edps as well as maintenance of the productive system.

The upshot was that Acando created a modern technical documentation solution for and with Airbus. With its modular document system, intelligent variant management and seamless process and system integration, it unlocks added value in both the production and utilization of maintenance and repair documents.

**Technology:**

- empolis sigmalink Content Repository
- Arbortext Epic 5 XML Editor
- SAP iPPE, PM Notification
- Oracle 10g Application Server
- Oracle 9i Database
- Java 2 Platform, Standard/Enterprise Edition

