



Aviation Maintenance Archive AMA

The Challenge

The revision-proof storage of maintenance documents for stipulated periods is an official requirement for aircraft and aircraft part operators and maintenance companies. Every servicing or repair is accompanied by a considerable volume of paper documentation compiled as evidence of the work performed. These maintenance documents must be archived for long periods and protected from subsequent amendment in compliance with official regulations.

While the operational archiving of these documents is usually relatively straightforward, airlines and their maintenance partners regularly have to tackle major challenges when aircraft or engines are sold (phase-out) or returned to the lessor after several years in operation (lease return). Collecting aircraft and maintenance files and comparing them with the data in the maintenance system often leads to delays. These in turn incur major contractual penalties which depending on the delay can easily mount up to millions of dollars. If the discovery is made that certain documents are not available, the respective maintenance work may have to be repeated, again incurring high costs.

The purchaser will lose confidence in the seller either way, and this is quite often reflected by an additional reduction of the original purchase price on top of the added expense mentioned.

The solution

SAVISCON.COM and nextevolution AG have jointly developed an Aviation Maintenance Archive (AMA), which optimally enhances the most commonly used maintenance software systems by adding an electronic archive. This product primarily aims to support the phase-out and lease return processes, help the aircraft and its components retain their value and ensure compliance with official requirements.

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For this, the archive solution exchanges maintenance data with the customer’s existing MRO system, thus creating a close link between the archived documents and the maintenance information in the MRO system.

Nowadays, operators and maintenance companies often have sophisticated maintenance software at their disposal with which maintenance events can be planned in detail. At the beginning of a maintenance procedure, all activities to be performed are printed in a batch in the form of tasks and work cards. Media conversion is regularly carried out at this point, as the completion of each activity must be confirmed in both the maintenance software and the work cards. The maintenance system tracks which activities have been performed, while the work card verifies how this work was done in technical terms and who did it. Usually no detailed aggregation of the maintenance documents accumulated and the data in the maintenance software takes place in the downstream processes. The evidence in the maintenance software is usually deemed sufficient; the paper documentation is stored in a more or less structured fashion, in many cases still in a common paper archive without electronic copies at all.

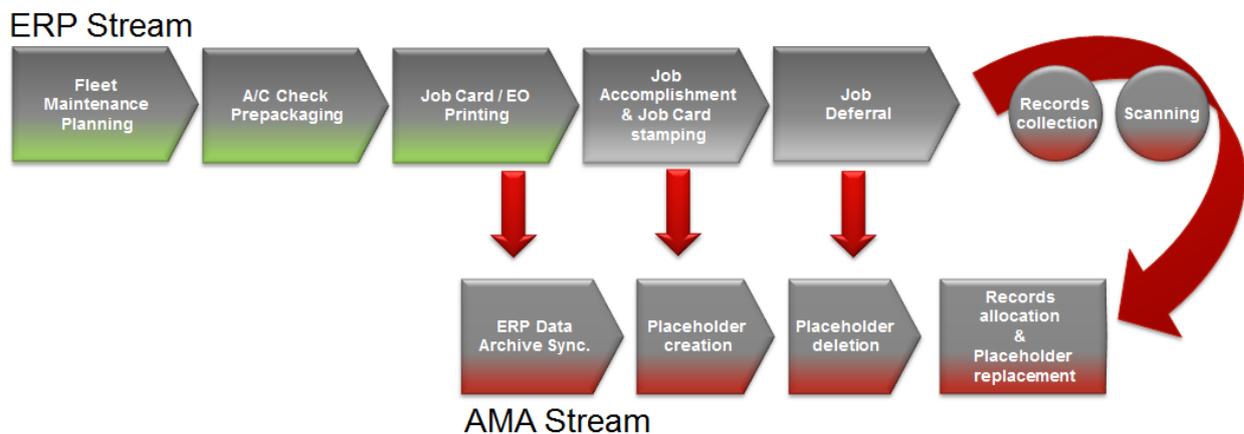


Fig. 1: Interaction between ERP/MRO system and archive system



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The disadvantages of this media conversion process are neutralized by linking the electronic archive with the MRO software. Printed documents are accounted for by the creation of placeholders in the archive; these must be filled with correct scans of each document before the documentation of a certain maintenance event can be approved by quality assurance. Even in companies which already store their maintenance documents electronically, document references are frequently only stored at maintenance event level.

The AMA neutralizes the major disadvantages associated with the ensuing lack of completeness checking by implementing its integrative concept at document level. References from the maintenance software to the maintenance documentation at the level of each single document enables completeness checking of the scanned paper documents, even to the number of pages in each document. Activity planning, follow-up planning and scheduling facilitate extensive quality management with regard to the completeness and content-related quality of the documents.

The quality and uniformity of the archive structure is not usually safeguarded. Subsequent searches for certain documents, relating for example to the fulfillment of official requirements or repairs to structural damage, can therefore be extremely time-consuming and entail considerable manpower. The Aviation Maintenance Archive creates a basis for efficient research into various user-specific aspects by means of structural navigation models. The structured, transparent archive and references at document level facilitate individual document viewing and efficient research in the event of internal queries, customer enquiries or official requests.

Aircraft configurations can be taken over from the maintenance software at previously defined hierarchical levels, in which case they will be displayed when navigating the archive. In interaction with and as a supplement to the phase-out functions available in the maintenance software, the AMA supports the compilation and supply of relevant maintenance documents at the click of a

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button. The phase-in process is also made easier by data exchange with the maintenance software, as the degree of automation in this process can be significantly increased by using the relevant archive functions.

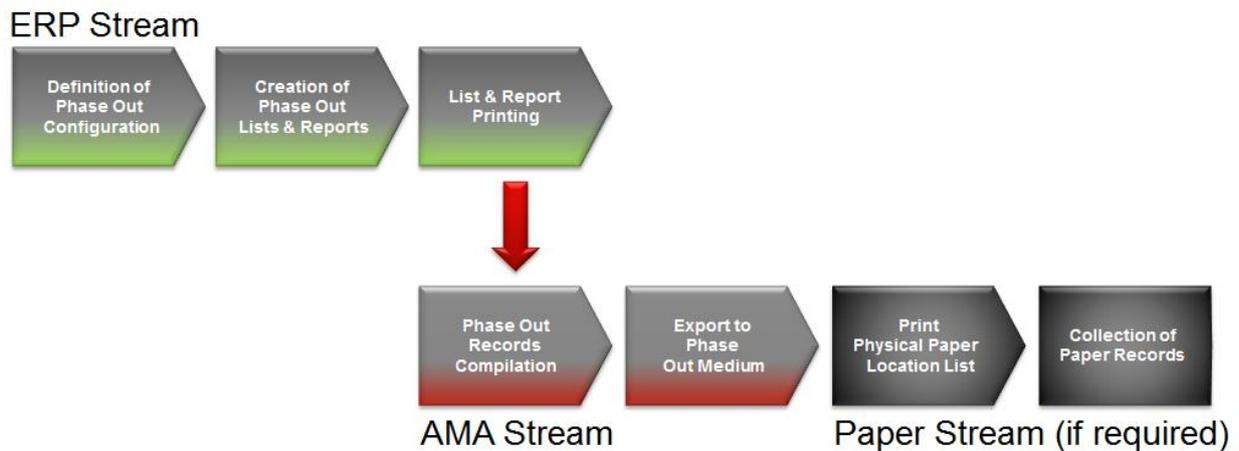


Fig. 2: Phase-out process

The close integration of the archive into the existing maintenance software also creates significant advantages as regards the efficiency and quality of document storage, the simplicity of research and in particular the support of phase-in and phase-out processes, none of which can be realized in this way by standard processes and systems.

Added value

The Aviation Maintenance Archive offers customers a structured, user-friendly archive for the long-term, revision-proof electronic storage of essential maintenance documents. One major benefit is the integration of the archive into the existing maintenance software, which compensates for the customary media break between software and paper documents. All functions are based on clear, auditable processes combined with a corresponding role and rights concept.



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The AMA improves transparency and compliance in all things relating to technical records. It facilitates fast, easy access to maintenance and other relevant documents for verification during the lifecycle of aircraft or aircraft parts. Integrating it into the existing MRO system enables it to synchronize the maintenance documents with the respective data in this system.

Using the AMA significantly improves efficiency and quality for the customer in an environment which often receives less attention when processes are being optimized but in which costs can be cut and efficiency increased quite considerably. Complex phase-in and phase-out projects in particular are made much simpler by using the archive.

Implementation

Technically, the AMA is based on the leading Enterprise Content Management system IBM FileNet P8 for revision-proof archiving. nextevolution AG's scanning solutions and file management framework round off the generic solution layer. The industry-specific functions of the Aviation Maintenance Archive build on these standardized software packages.

The widespread programming and interface technologies used are actual industrial standards and facilitate the simple implementation of interfaces inside and outside the existing maintenance systems.

The solution is realized in such a way that it can be either operated by the customer or used as a cloud service. Both modes of operation allow the use of local scanning processes, scanning by external service providers and combined scanning processes into the archive.



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Function Overview

The Aviation Maintenance Archive uses the approach of close integration into the available maintenance software. The archive has a basic range of corresponding interfaces with MRO systems which can be extended to meet the customer's needs. Even in cloud mode, this kind of integration facilitates the efficient set-up of important quality management processes which enable the customer to ensure that the electronic content of the archive is correct and complete. The appropriate process design workflow components are incorporated into the system and can be configured as required.

Compared to event and batch-oriented archives, the single document oriented archive has the advantage that various specialized views can be set up to simplify area-specific processing and research, e.g. a view of all A-checks performed on an aircraft. The internal storage concept for the existing archive objects allows for the flexible definition of customer-specific views of archived data. This is why it makes sense to use previously defined templates for structured navigation, the structure of which is automatically generated when an aircraft, component or event is set up. The predefined structures ensure uniform navigation of the maintenance documents throughout the company. Along with various views and structured navigation, extensive research functions are available in the form of full-text searches and attribute searches.

The use of various local and decentralized scanning functions opens up all kinds of possibilities for digitalization processes: from complete in-house processes via digitalization outsourcing with in-house quality controls to complete digitalization outsourcing including professional quality assurance. The synchronous storage of the available paper documents in a physical archive is supported. Specific list and export functions guarantee the efficient support of phase-out projects – with or without paper documents.



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Key functions

- ✓ Revision-proof archiving
- ✓ Scalability
- ✓ Online/SaaS-enabled
- ✓ Local document scanning and uploads
- ✓ Import interface for scan service providers
- ✓ Configurable archive structure can be used as company-wide template
- ✓ Meta-data and full-text search
- ✓ Approval workflows for quality assurance
- ✓ Role and rights concept for functions and data access
- ✓ Integration into maintenance/ERP system
- ✓ Completeness checking of scanned documents



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Based in Hamburg, SAVISCON.COM provides consulting and implementation services for IT, organizational and change management projects.

We specialize in Enterprise Content Management (ECM), focusing specifically on the state-of-the-art management of technical documentation for capital goods in sectors such as aircraft maintenance and shipbuilding.

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Based in Hamburg, nextevolution AG is one of the leading consulting and software specialists for the optimization of business processes focusing on Enterprise Content Management (ECM) and Enterprise Infrastructure Solutions (EIS).

The services offered encompass the planning, development, implementation, integration, operation and support of ECM solutions.

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