

Creating technical content with XML

XML at the heart of technical documentation

While SGML and XML are the unrivalled standards for Internet programming they are far from being commonly used in technical documentation. In fact, SGML often stands for „Sounds Good Maybe Later“. Though being aware of SGML’s potential in technical documentation many companies fear high expenditures when implementing SGML-based technologies. However, there are many powerful and cost-effective tools on the market tailored specifically to the requirements for medium-sized companies. One of these tools is the XML/SGML-based content management system TCToolbox by Ovidius, which is deployed successfully at Biotronik – a leading European company in the field of biomedical technology with headquarters in Berlin.

Technical documentation at Biotronik

The history of Biotronik goes back to the year 1963 when its founder, Prof. Dr. Max Schaldach, developed the first



German pacemaker with Otto Franke at the Technical University of Berlin. Today, Biotronik operates a global network with customers in over 100 countries worldwide and more than 2,500 employees. In the last 40 years, the portfolio has been increased continuously making the company one of the leading manufacturers of medical devices in Europe. Excellent quality standards are the Biotronik hallmark and secure the lives of many patients. This is why Biotronik believes in an integral quality concept that is applied to all phases of product development including the technical documentation.

Pacemaker - © Biotronik

Publishing in HTML – a new challenge

The quality of their technical documentation does not only depend on technical and linguistic correctness of the content but also on its usability. For this reason, Biotronik decided to increase the range of output formats from paper publications to PDF, HTML and HTML Help. While PDF and HTML are provided on a CD-ROM a context-sensitive HTML Help for external programming devices is on its way and is to be provided for each new product release.

It became soon obvious that the proprietary desktop publishing tools formerly used by technical writers and illustrators could no longer cope with the new requirements in technical documentation. Due to the complexity of the technical documentation, formatting styles and the file system were no longer an appropriate means of creating content so that Biotronik finally decided to implement an innovative XML-based technology.

About Ovidius

Ovidius is based in Berlin, Germany, and specialises in XML and SGML software solutions for creating, managing, and publishing of technical and scientific information. We help companies with complex documentation requirements, e.g. automotive, mechanical engineering, software "manufacturers", aviation and defence, medical engineering and IT companies.

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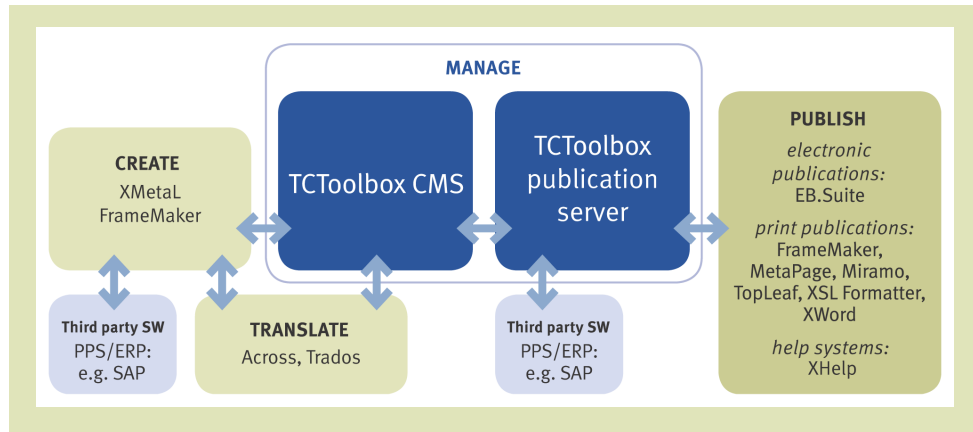
The author, Christian Wehry, works as free journalist at Berlin.



Opening up new potentials with XML

After an analysis of the market Biotronik settled for an XML-based content management system (CMS). The main idea of an XML-based technical publication CMS is to create independent information modules instead of entire documents. The information modules can be edited, translated and published separately. This concept has some advantages:

- Many technical writers can work simultaneously on the same documentation.
- The information modules can be reused in a wide range of contexts.
- When making changes to the technical documentation only the modules affected by these changes need to be re-approved.

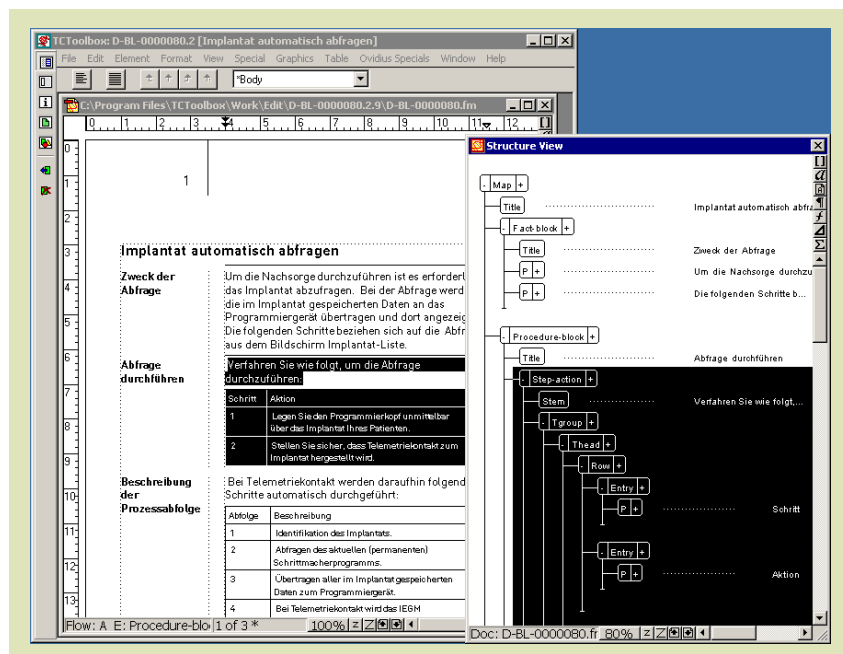


Overview Ovidius TCToolbox

When considering translation as an integral part of the documentation process the efficiency gain provided by a CMS is even more striking. Information modules can be managed in different target languages so that only those modules are checked out for translation which have undergone changes in the source language. The acronym CMS (content management system) sometimes also stands for component management system as technical writers no longer edit entire documents but single components (so-called modules), which are defined by the elements of the DTD.

To optimise the reuse of information modules and ease the translation processes Biotronik finally decided in favour of the XML/SGML-based technical communication content management system TCToolbox by the company Ovidius from Berlin. Ovidius develops XML and SGML-based solutions for the creation, management and publishing of complex documents. Special attention was paid to the design of the DTD as the documentation structure remains a valuable asset even if the tools it was created with are already out-dated. In accordance with the standards for technical documentation Biotronik and the experts from Ovidius developed a DTD whose design incorporates the latest findings from text linguistics and psychology in order to create an easily readable document structure that also allows for selective reading.

At first, the technical writers at Biotronik continued working with the tried and tested Adobe FrameMaker as the tool



allows for handling both content and layout of the text. However, the advantages of XML and the ease with which different handbook formats could be published in TCToolbox soon convinced everybody involved in technical documentation.

„Our aim was to publish our manuals not only in the traditional A5 format but also in A4 and A6 depending on the packaging size and the content of the manual. At the moment we publish a compact A6 manual for the packaging and an illustrated manual in the A5 format for the user. In the future, we will continue publishing the compact A5 manuals as well as a detailed reference manual in the user-friendly formats A5 and A4“ explains Hans-Jürgen Scharmner, project manager at Biotronik.

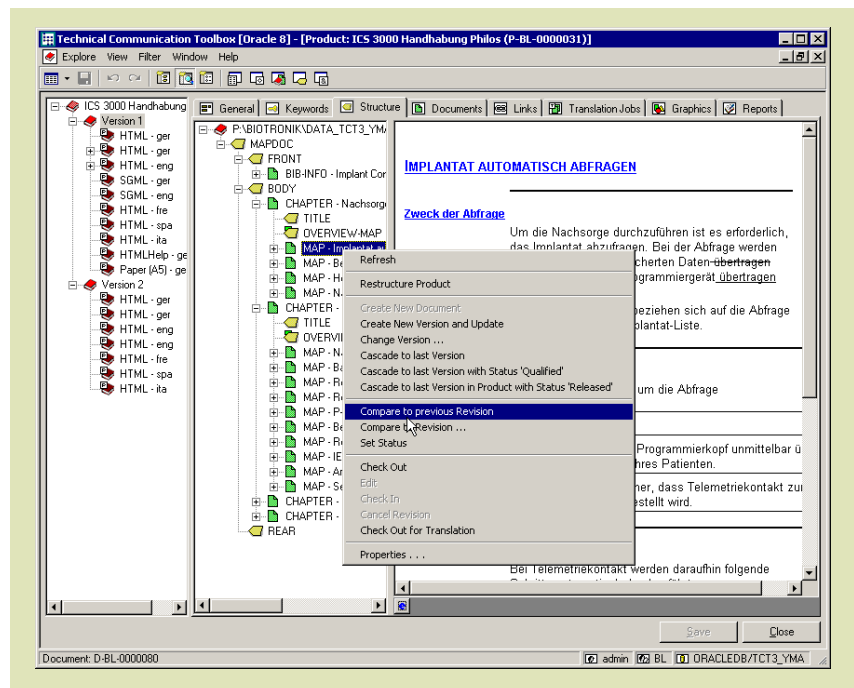
A document opened in the XML editor (in this case: FrameMaker).

At this point it becomes evident that a WYSIWYG requirement is not feasible when publishing a wide variety of formats. However, the drawback of non-layout-oriented creation is far outweighed by the efficiency and speed additional formats can be published within TCToolbox.

Diversity of languages in the European Union

The enlargement of the EU is one of the reasons why the number of languages the product documentation has to be published in is increasing continuously. From a legal point of view each documentation has to be provided in the official language of the target market. Here a considerable amount of time and money has to be put into the translation and formatting of the translated texts before they are ready for publishing. With TCToolbox the translation process can be streamlined significantly as only those information modules are checked out for translation which have been changed in the source language and not an entire manual. Also, there is no need to re-format the documents in the target language as the translator cannot change the layout when working with XML-based documents. This reduces time and translation costs by up to 30 per cent.

Next to the content graphics are an important element in the documentation of Biotronik, which makes graphic management an indispensable feature of the deployed CMS. All graphics are managed by a versioning mechanism and can be published in different formats. For print publishing JPG graphics with a high resolution are used while for the HTML Help graphics in the GIF format are published. Ideally, the graphics are language-neutral but can also be managed in different language variants. Since graphics are stored as independent objects in TCToolbox they can be reused just like any SGML/XML information module.



A view on TCToolbox: Main window (left), structure (center) and preview (right).

Handling of fragmented texts and graphics

In order to manage the large number of handbooks, information modules, graphics and screenshots Biotronik has created over the last couple of years a reference feature was vitally important, which would allow to list all modules and graphics used in one manual. The same feature was required on the information module and graphic level. The CMS should indicate the manuals a module is referenced in and the graphics it contains. It should also list the manuals and information modules a graphic is used in.

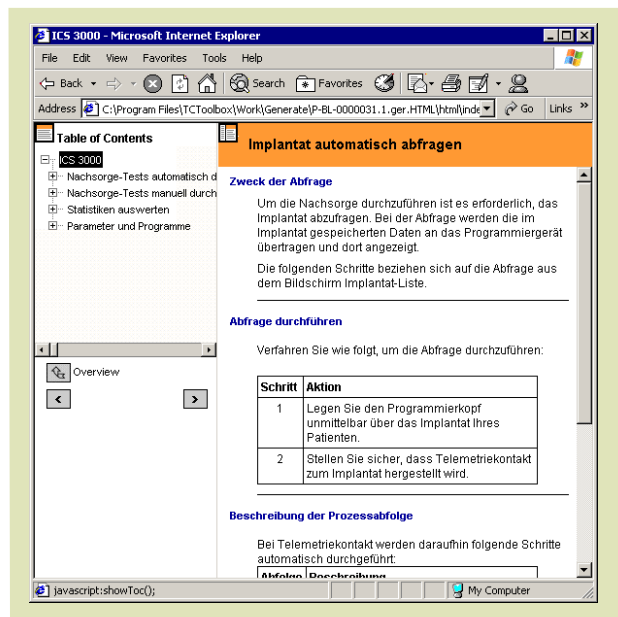
The creation of a general manual describing different software and hardware variants was soon rejected as not feasible. Instead of having customers scan the documentation for information relevant to their product variant Biotronik decided to deliver a specific manual for each software and hardware version. Here TCToolbox is especially efficient as it allows for assembling information modules to a manual by simply using the Drag&Drop function.

Despite the rather granular documentation structure some information modules might be too unspecific for reuse as variants often differ in only one sentence. The solution Ovidius came up with was based on its long-time expertise in the field of the aerospace and defence industry. For an aircraft, no matter its size, only one single maintenance manual is created. When publishing the manual it is filtered by variants and the scope of the content is reduced to the necessary information.

Although Biotronik has gone far down the road of XML-based publishing new ideas of how to optimise the use of our structured data are brought up permanently by the documentation team. Hans-Jürgen Scharmer hits the nail on the head: „Today everybody is talking about single source and multi channel publishing. We actually do it!“

About BIOTRONIK SE & Co. KG

BIOTRONIK is a leading European manufacturer of medical technology with a worldwide market presence. The company offers a complete line of products for diagnosis, treatment and advanced therapy support in the areas of cardiac rhythm management, electrophysiology and vascular intervention.



HTML publication of a manual

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