eLabeling - Web Solution for Automated Laser Marking

eLabeling is a new web 2.0 application which offers a new level of automatization for individual laser marking tasks. Using a convenient web client, customers precisely define their own marking layouts, which then are transferred to a fully automated production process at the supplier of the personalized items. ALBRECHT JUNG, a leading manufacturer of electronic switches and systems, already uses this application with great success. A special web site allows every customer to design individual laser marking layouts on a multitude of switches for lighting, air conditioning etc.

Herholz Research developed this innovative software solution and customized it for ROFIN laser markers to process various metals and plastics. Basically, eLabeling is a network application. It consists of a SQL-based server for storing and processing all information related to articles, prizes, orders and users and a web-based front-end for convenient design of comprehensive laser marking orders. An integrated, flexible template engine enables the service provider to precisely define individual marking areas on any number of different articles. For each marking order, the eLabeling server generates the entire laser marking code and controls the automated production process on a ROFIN laser marking system.

Customizable web front-end for easy design

The eLabeling front-end is a comfortable, platform-independent online desktop publishing system. It offers a full set of functions for defining individual, alpha-numeric and graphical markings on various parts. For every article there is a customized template in full size which shows possible marking areas. The user can chose among lines, outlined or filled polygons and circles and arbitrary fonts or predefined symbols. The software also supports scaling, rotating and aligning.

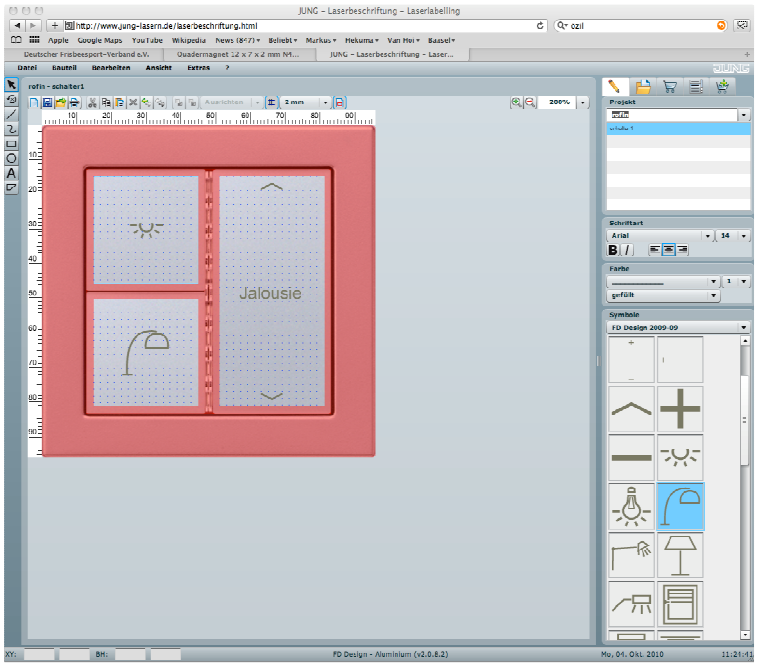

Fig. 1: Comfortable front end for set-up of marking contents (www.jung-lasern.de)

Shopping cart with true-to-life preview

As all data is immediately stored on a database server, the design process can be suspended at any time. Continuation any where at any time only requires the suitable login credentials. A fully-fledged shopping cart calculates individual and total costs and generates an order confirmation in pdf format, which shows a true-to-life image of every article. For that purpose it accurately renders the individual marking on a real-life picture of the article.

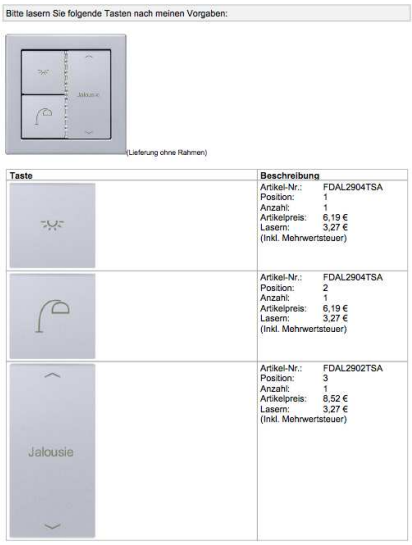

Fig. 2: True-to-life preview

Coordination with enterprise resource planning systems

The eLabeling server processes every placed order and transfers all required production data to the laser system. It coordinates the manufacturing workflow with the order management of enterprise resource planning systems. For instance, a payment receipt may trigger the clearance for automated production. At scheduled time the ROFIN laser system autonomously processes the list of marking jobs. Inserting and take-out of parts can be done automatically or manually. In the latter case, the system displays detailed instructions to simplify handling as much as possible.

Fast and cost-efficient processing of individual marking orders

In summary, eLabeling offers significant advantages over conventional order processing. As the customers define their individual laser marking orders by themselves, there will be no labour costs for order entering - and no processing errors. The subsequent, automated manufacturing process is cost-efficient and yields to significantly shorter delivery times.

Suitable for various laser applications

The software solution is flexible enough to handle various marking processes. Front-end and server can entirely adapted to individual production requirements. Automated laser engraving of printing plates and subsequent pad printing is an example. Other forms of laser material processing like laser cutting are possible as well. The user-friendly, location- and platform-independent order processing may also be advantageous for efficient restructuring of manufacturing processes within a corporation.

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