Engineering Content for Global Markets

Technical knowledge to a very high degree reflects regional history, tradition and culture. As a consequence engineering standards, rules and workflows vary considerably around the world, even throughout Europe. In many regions such traditions have generatet closed shops in respect to design and engineering. But globalization however will destroy many of these restrictions as companies will cooperate internationally in open environments.

Engineers and scientists will recognize that exchanging and discussing individual knowledge and experience will boost new technologies and the quality of product design and engineering.

MDESIGN offers both, a platform for acquiring and distributing knowledge, and a large amount of structured design content for product development. Acting as communications network in a global community, MDESIGN bridges many gaps in the rapidly growing world of engineering .

PEARSON
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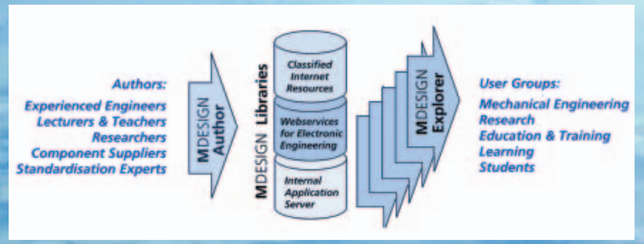
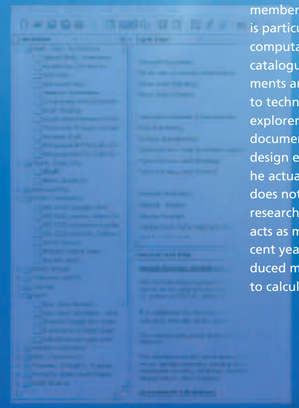
The Concept Behind MDESIGN

MDESIGN follows a new concept in engineering content management. Supporting the users as well as the authors of technical content, and assisting the IT administrator with installation and maintenance, the software system covers many aspects of knowledge engineering and management in product design and development. MDESIGN consists of three major components:

- MDESIGN explorer as the gateway to internally and externally available information and design tools
- MDESIGN libraries containing a large variety of specific technical content and
- MDESIGN author as a development tool to collect, systemize, format and publish technical knowledge.



MDESIGN Explorer: Digital Content for Electronic Engineering



Knowledge bases only become useful if they are transparently organized and quickly accessible to all members of staff. MDESIGN explorer is particularly designed to perform computations, present intelligent catalogues, manage technical documents and ensure job related access to technical data bases. MDESIGN explorer is a guide to virtual data & document warehouses, where the design engineer finds all the content he actually requires. But MDESIGN does not only reflect progress in research and standardization, it also acts as motor of innovation. In recent years, the system also introduced many unique functionalities to calculation software, like

- Connection of modules to software assemblies
- optimisation through parametric analysis
- adaptive Unit System
- CAD integration through XML
- web-based calculations
- authoring functionality
- enhanced documentation.

As the graphical user interface of MDESIGN Explorer has to handle a broad range of applications, standardization has played a key role in software development. Today its clear structure, ease-of-use and its excellent help functionality has made MDESIGN explorer a unique content and calculation manager in mechanical design.

Beam Deflection
Shaft Calculation
Connections and Hubs
Roller Bearings
Radial and Axial Journals
Spur, Bevel and Worm Gear
Belt Drives
Roller Chains
Power Screws
Bolted Joints
Welded Joints
Adhesive Joints
Bolts and Pins
Springs
ISO Fit System
Tolerance Analysis
Material Data
Fatigue Stress
Hardness Values
Surface Roughness

MDESIGN Libraries and Applications Are Based on International Standards

Based on national and international standards and codes of practice, the libraries of MDESIGN cover almost the whole range of calculations for machine elements and drive components. All analytical calculations are based on theoretical mechanics, mathematical approaches and empirical data, which have assisted generations of design engineers.

ANSI CEN VDI DIN ISO

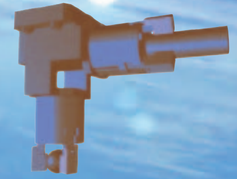
MDESIGN calculation modules undergo constant development. They are being regularly revised and enhanced. Regular updates reflect the current and latest results from major standardization boards, part manufacturers and research institutes. Each component and its functionality are described in depth, as well as the groundwork, application areas, limitations and origin of the algorithms and data. The range of applications and content modules grows constantly.

Special Applications

The range of special applications was developed in partnership with research institutes of universities, component manufacturers and MDESIGN customers. Examples are software packages for shaft design, bolted joints and flanges, compression springs, load distribution in gear, drive train design, vessel and valve design.

Guide to Hundreds of Data Bases, Components and Catalogues

In a competitive market, component suppliers have to meet a growing need for product information and dimensioning tools. As buying decisions are increasingly influenced by the quality of advice and assistance, the supplier faces new challenges, particulary if he is engaged in international markets.



Digital technical presentation and precise computer-aided selection tools reduce the burden considerably, resulting from customers requirements.With MDESIGN component manufacturers easily create intelligent guides to their complete product portfolio.
As part of MDESIGN intelligent catalogues are at the fingertips of mechanical design engineers.

MDESIGN author:
User-oriented Knowledge Processor

One of the main targets of each design department is the collection of expert knowledge, its processing, storage and access for later use. Using the MDESIGN author, the compilation of rule based software is no longer limited to programmers and specialized knowledge engineers. The MDESIGN author, supported by various wizards, creates text files, graphics and data bases for data, calculation procedures and selection methods. Special attention is given to the ease-of-use and to a clear structure of resulting dialogs and help facilities. The toolkit generates a readable and editable script, which can be executed by the MDESIGN explorer afterwards. In addition already existing code can be run with new MDESIGN user interfaces. This functionality is used in many reengineering projects, and hides old MS-DOS, C- or Fortran code.

MDESIGN Generates Quality, Productivity and Standardisation

Today design departments face major efficiency programes to achieve cost reduction and minimize development cycles. Workflows have to be improved and computer-aided design tools are of strategic importance.
Knowledge management is one of the key issues, and MDESIGN software has proved its ability to push this process considerably:

MDESIGN calculations libraries produce time-savings of up to 80 percent. Replaced by digital information, tables, books, paper catalogues, standards and rule-sheets gradually become redundant. And MDESIGN helps to identify, organize and distribute extenal knowledge across the entire organization.

The classification and directory system provides fast access to internal data bases as well as to web-based resources.
All input data, boundary conditions, results and graphics are documented through the system immediately, while entered or processed.

MDESIGN - Unique A Tool in Mechanical Design

MDESIGN as an e-engineering platform which provides advanced knowledge on calculations, design procedures and technical rules is being used in all sectors of automotive industry and machine manufacturing. With more than 100 modules of design-specific information MDESIGN has become a unique toolbox for mechanical design and engineering.
Authors are experienced engineers, researchers and members of standardization boards. They regularly supply new and revised content, which adheres to the latest standards and guidelines. The entire knowledge and continuous updates are made available by CD-ROM or directly by a network of internet-based content servers.
MDESIGN is gaining more than 10.000 users year by year, and the unique technology makes it one of the todays most successful e-engineering platforms of today. Functionality and market penetration both let MDESIGN play an outstanding role in disseminating technical knowledge.
Please, get more information on: www.tedata.com

TEDATA
Digital Contend for Engineering

The Company Behind MDESIGN

At TEDATA more than 60 engineers and programmers develop advanced content and design tools for mechanical engineering.
The product range includes

- standard software for dimensioning and optimization of machine elements and automotive components,
- tools for documentation of design solutions and results,
- tools for programming and managing technical content,
- knowledge controlled catalogues for component selection,
- R-engineering tools for technical software.

The company was founded in 1983 and today serves customers like DaimlerChrysler, Bosch, ZF, Porsche and INA, but also many small and medium sized mechanical engineering companies.

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MDESIGN

Mechanical Analysis for Conceptual Design and Product Development

MDESIGN - a family of software components and digital libraries developed for electronic engineering - provides advanced knowledge about calculations, design procedures and technical rules. All digital engineering handbooks and training manuals can be accessed through internal and external networks.

MDESIGN is being used in all sectors of automotive industry and machine manufacturing. Software and content have been developed to speed up and improve mechanical design and engineering. More than 30.000 design engineers use MDESIGN for dimensioning and optimization, browsing component catalogues and documenting design results.

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