CONTACT Software GmbH

November 2005

A CIMdata Program Review

CONTACT Software GmbH

1. Introduction

In the increasingly competitive markets of the current worldwide economy, companies are desperately searching for more effective ways to conduct business. Of course, improved efficiencies and operational processes are key targets in the quest for business success. Increasingly, manufacturers are realizing that their organizations must become more innovative if they are to succeed, or even survive. However, innovation isn't just about innovative products, it is also about the business processes that are used inside of organizations to define, produce, and support their products. Innovative companies are the companies that succeed, and research worldwide reinforces that truth.

In this business environment, companies around the world are recognizing the tremendous value that Product Lifecycle Management (PLM) strategies offer to enable the kind of transformation necessary to create innovative businesses. PLM is the strategy that incorporates business solutions that focus on managing the complete product definition throughout the entire product definition lifecycle across the extended enterprise. It incorporates best-practices, methods, and technologies such as Product Data Management (PDM), collaboration, visualization, enterprise application integration, and others. It addresses the needs of the extended product definition supply chain of OEMs, sub-contractors, suppliers, partners, and customers. PLM enables businesses to exploit the potential and promise of current and future technologies and methods, in order to bring innovative and profitable products to market effectively. PLM today is a competitive necessity.

In this report, CIMdata provides an overall review and assessment of CONTACT Software GmbH (CONTACT) and their PLM solution. The following sections will address:

- *Market Position* – A brief introduction to CONTACT's background, the PLM market, and to CONTACT's position within the PLM market
- *Operations Assessment* – A brief review of CONTACT's market program and solutions program
- *Product Assessment* – An overall discussion of the product packaging, including descriptions of the various product packages, followed by a review of their product architecture, user interface, and integrations
- *User Assessment* – Reactions from a number of CONTACT users
- *Summary* – A brief summary of the overall assessment

PLM is enterprise-oriented with its emphasis on solutions for the complete product lifecycle; but most suppliers of PLM solutions do not focus on the full lifecycle. For example, historically CONTACT has primarily focused on workgroup and department-level PDM solutions. However, the direction of their program is clearly to provide products that meet the needs of multidisciplinary projects and distributed enterprises. Their product suite has been intended to deliver cost-effective, useful solutions without requiring major investments in implementation, training, and support. They continue to add more comprehensive lifecycle support and their solutions fit squarely within the PLM market.

2. Market Position

2.1 CONTACT Background

CONTACT is headquartered in Bremen, Germany with additional offices in Germany and Switzerland. Founded in 1990, CONTACT is privately owned. The initial focus of its solutions was on CAD management, and their ability to support multi-CAD environments is one of their strengths. Since its inception, CONTACT has evolved to provide a solid and growing Product Data Management (PDM) solution.

As an organization, CONTACT has grown to a staff of more than 80 direct employees. A key group within

this overall organization is their professional services staff, which provides the following services:

- Development, programming, and sales of EDM/PDM/PLM software and integration modules for CAD, office, and ERP/MRP applications
- Professional services (consulting, customizing, project management)
- After-sales services (training, support, hotline, maintenance)

CONTACT has developed a partner program to augment their own resources and expand their support to industry. A number of key partners provide support and services to facilitate implementation of CONTACT solutions within their customers. These partners have dedicated software project managers, consulting, and services personnel that are familiar with CONTACT software solutions. Some other partnerships provide additional application integrations that expand CONTACT's overall solution set.

CONTACT has had solid growth over the past few years and has enjoyed a steadily increasing number of installations in multiple industries. Since CONTACT is a private company, they do not publicly report their revenue data. However, CIMdata estimates that their revenues exceeded 10 million € in 2004.

2.2 PLM Market

PLM is not just a technology; it is focused on solutions to a broad industry problem. PLM utilizes multiple types of technologies and methods, and intersects with many others. CIMdata defines PLM as a strategic business approach that applies a consistent set of business solutions in support of the collaborative creation, management, dissemination, and use of product definition information across the extended enterprise from concept to end-of-life—integrating people, processes, business systems, and information. PLM creates and manages the digital product or plant (i.e., a company's intellectual assets) and provides the product-related information backbone for a company and its extended enterprise.

PLM is not provided through a single software-based solution. It is composed of multiple elements including:

- Foundation Technologies and Standards: visualization, collaboration, enterprise application integration, and XML
- Information Authoring and Analysis Tools: mechanical, electronic, and software design and analysis tools as well as technical publishing
- Core Functions: data vaults, document and content management, workflow management, product structure management, classification management, and program management
- Applications: configuration management, engineering change management, etc.
- Business Solutions: built on the other elements (e.g., an electronics supplier solution or a plant inspection and maintenance solution)

CIMdata divides PLM software and services investments into two distinct segments—application tools that support the authoring and analysis of product definition information (e.g., Mechanical Computer-Aided Design (MCAD), Electronic Design Automation (EDA), Computer-Aided Software Engineering (CASE), analysis, and technical publishing), and solutions that focus on collaboration, management, and sharing of product definition information (i.e., collaborative Product Definition management (cPDm) solutions. Investments in PLM solutions have gained in momentum and visibility as its value has become more apparent and companies struggle to become more innovative and competitive. To illustrate, Figure 1 presents investments by industrial companies in commercial PLM technologies and services over the past five years along with forecasted investment through 2009.

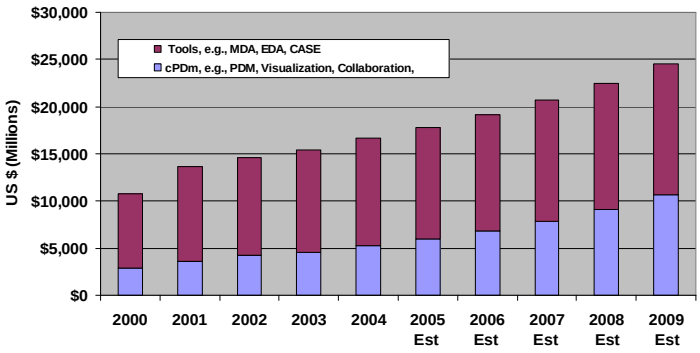

Figure 1. Overall PLM Market History and Forecast 2000 through 2009

As can be seen in preceding figure, PLM investments during 2004 were quite strong. Industrial companies are investing in technologies and services that can deliver business solutions rather than just functional automation. They want to improve their product development activities to drive increased product

innovation and time-to-market opportunities. They are spending capital resources to address areas of the business they believe will increase their competitive position.

This vision has transformed the use of PLM from a competitive advantage to a competitive necessity. CIMdata estimates that within five years, companies who are not successfully leveraging PLM concepts and solutions will no longer be competitive.

2.3 CONTACT Market Position

CONTACT delivers cPDm solutions targeted primarily at small- to mid-sized companies and divisions of larger enterprises. However, a small number of larger enterprises run CIM DATABASE as their enterprise PDM backbone. Building on their history, a core competency for CONTACT is their focus on engineering data management (EDM), product data management (PDM), CAD data management, and consulting associated with these areas. They demonstrate a solid understanding of the problems and working methods of customers and prospects in their target industries. CONTACT is an independent supplier of cPDm solutions; they do not develop or supply any CAD solutions.

Consistent with their background, CONTACT has acquired a deep expertise in developing application interfaces and integrations. They maintain a significant number of standard interfaces to mechanical CAD systems, and demonstrate a solid knowledge of the CAD systems they support and how to effectively implement CAD integrations for their customers. CONTACT also maintains integrations to many other applications, including Enterprise Resource Planning (ERP) systems, electronic design, and office automation applications. However, they have not yet developed standard integrations to engineering analysis applications.

CONTACT provides their solution in the form of a platform that can be used and extended to provide tailored or customized solutions for individual customers. Their product has been developed with a focus on supporting substantial levels of tailoring of the system operation, to reduce the amount of customization (through programming) required for implementation. In addition, they have established a solid partner program to expand their overall product offering.

Overall, CONTACT provides a very capable product suite that the company is continuously improving. Based on this, they have established a solid position within the central European (German-speaking) PLM market. However, CONTACT has limited brand recognition outside that region. Because of their historical customer base (primarily German machine tool manufacturers), CONTACT is often perceived as a regional solution for small- to mid-sized companies. While they have a growing and loyal customer base, they have not yet been widely recognized for their overall capabilities and market presence, especially in their growing market areas such as plant engineering. This perception is one that they appear intent on changing in the near future.

3. Operations Assessment

3.1 Market Program

CONTACT has been in business for several years and has been a relatively stable firm supplying solutions to their focused markets. While many of CONTACT's long-term customers are from the machine tool manufacturing industry, their products have evolved over the years and CONTACT has delivered solutions to a relatively wide range of customers. In fact, CONTACT was originally founded as a spin-off from a plant engineering firm, and the original clients of CONTACT were in this market. CONTACT's customers are primarily in the following industries:

- Automotive and automotive suppliers
- Manufacturing, primarily machine tool builders
- Mechanical and electronic engineering
- Plant engineering
- Public transport, power supply and general public sector companies and municipalities

Within this wide range of industries, CONTACT's customer base is relatively focused. Currently the automotive industry constitutes approximately 50% of their business and is a primary growth area. Discrete manufacturing companies, primarily machine tool manufacturers, constitute approximately 30% of their business. Public sector and plant engineering represent about 20% of their business, and CONTACT reports that they plan to continue to expand business in these areas. This industry focus matches CONTACT's history and strengths, and is quite appropriate.

Relative to the typical size of their customers, CONTACT targets their solutions at group level and mid to upper mid-level organizations. Companies of this size are becoming more aggressive about implementing PLM solutions to improve their own

ability to compete in their markets. However, they tend to demand PLM solutions that are relatively easy to get implemented and productive in a short timeframe. CONTACT's focus on these customers has allowed them to differentiate themselves from many of the PLM suppliers that primarily target large-scale customers. PLM investments from mid-level companies are increasing quite rapidly, and CONTACT is positioned to be able to benefit from this market evolution.

Geographically, Western Europe continues to be CONTACT's primary market, although they plan to expand their presence into other European regions, including Eastern Europe. To date, their sales and implementations in the Americas and Asia-Pacific have been driven by implementations in groups, divisions, and subsidiaries of companies with which CONTACT has already established business relationships in Europe. This approach appears quite reasonable for CONTACT at this time.

CONTACT sells their solution in Germany, Switzerland, and Austria through a direct sales organization. As mentioned previously, CONTACT also has implementations outside of Germany, Switzerland, and Austria that are part of the extended enterprises of their core customers. These extended implementations have been handled by their direct organization.

3.2 Solutions Program

While originally a mechanical design management solution, CONTACT has evolved its products to support a diverse set of industries. Today, CONTACT provides a generalized PLM solution, as opposed to a system that is just configured to manage design engineering data. Their stated objective is to provide full product lifecycle support for engineering.

CONTACT has evolved and grown their product offerings, incorporating many new features into the product over time. They continue to expand their solutions according to market evolution and customer requirements. CONTACT's product suite is built around its CIM DATABASE product. It is packaged to be relatively ready-to-use as delivered, with some accompanying effort to configure the data and process model to fit the customer's business processes. This type of tailoring support is typical in PLM system implementations.

CONTACT's suite of robust CAD integrations is a cornerstone of the product suite, providing a flexible set of solutions for companies that use multiple CAD systems. These integrations provide out-of–the-box plug-ins for SolidWorks, Solid Edge, Autodesk, UG/NX, CATIA V4 and V5, and many other design tools. CONTACT also provides integrations with other applications such as ERP, Microsoft Office, and several mechanical engineering tools, but has limited pre-developed integrations with electronic design and other analysis tools at this time.

Most of CONTACT's customers have implementations that typically support 150-200 users. However, CONTACT states that their products are quite scaleable and can support implementations of many different sizes. They can identify customers that have as many as 2,000 users at a single site, and other customers that have a common hub supporting as many as 50 different sites. Scalability, within the areas of their focus, does not appear to be an issue.

CONTACT has provided PLM solutions for several years, and has demonstrated stable business operations during that time. To reinforce stability to their customers, they have provided a "continuous" upgrade path (with no discontinuous jumps) for their customers over the past 15 years. Their reputation has been that they provide sound core technology that works well in customer production situations.

In addition to software, CONTACT offers a portfolio of pre-implementation, implementation, and on-going operation services to facilitate their customers' adoption of their solutions. This suite of services includes:

- Analysis of customer requirements and system specifications development
- Process analysis and organizational transformation support
- Development of PLM system operating methodologies
- Development of processes for CAD data management operations
- Development of system implementation plans
- Customization of software to extend or modify the product suite
- Implementation support, including training
- On-going support and hotline assistance

Relative to pricing, CONTACT utilizes a traditional perpetual license plus maintenance model for their software. Services are priced with customer quotations, based on the scope or services and duration of commitment by the customer.

4. Product Assessment

4.1 Product Packaging

CONTACT provides a suite of solutions adapted to their target users, ranging from workgroup document and CAD data management to collaboration support. The product solutions are:

- **CIM DATABASE** – an open-ended turnkey-PDM solution, including standard modules, a programming/customization environment, and integrations with other applications
- **CIM DATABASE DataManager** – a preconfigured, low-end solution for CAD data management, e.g. CATIA V4 and V5, Pro/ENGINEER, etc.
- **CAD-TALK** – Web service for CAD data management
- **Industry specific solutions** – pre-configured versions of the system, with specific data models and processes to fit a focused industry

These products are described in more detail in the following sections.

CIM DATABASE

CIM DATABASE is CONTACT‘s primary and leading product. It provides a set of pre-configured applications that are intended to support relatively quick and easy system implementation. It is built on a modular architecture and is designed to be tailorable, or even customizable, with minimum effort. The architecture is based on CORBA II standards, and is intended to be scalable to support implementations of varying scope and implementation expansion.

Within CIM DATABASE, all product data and documents are deposited in a “logical central” database. This is consistent with other traditional PDM systems, and enables reduction of data redundancy and the resulting improvement of data quality, and faster retrieval of all product data.

CIM DATABASE includes basic workflow management and supports modeling of processes and procedures with workflows. An important capability of CIM DATABASE is the integration of different CAD systems as well as integration with DTP and office applications. It supports data and document exchange between suppliers and clients. It also functions across heterogeneous hardware and software environments.

CIM DATABASE is delivered as a suite of modules with each providing different functionality. The modules are:

- MDM for CAD model management
- DOK for document management
- STL for product structure management and Bills of Material
- SML for component/material classification
- PDX for Product Data eXchange
- PCS for project collaboration, management and control
- WEB for web-based retrieval of all PDM objects
- eLINK for active Web client

CONTACT reports that they have developed several extensions for the product suite that are not yet supported as standard products. These extensions include:

- A materials properties database
- Mechanical tool damage archive
- Technology choice – a knowledge database

CONTACT also reports that there are a number of areas that are priorities for their product development activities to add functionality considered important by their customers. Their highest priority areas of development include:

- Capture and identification of product “requirements,” and relating systems design and design activities to them
- Support multi-discipline engineering – also known as mechatronics
- Intellectual property (IP) protection for customers with global implementations
- Improved and extended support for utilization of Internet technologies

MDM and DOK

MDM and DOK can be implemented as standalone modules, but are designed to work together to provide full model and document management in a unified information repository (vault).

MDM is focused on managing CAD models, drawing information, and other model or product-related information. MDM includes a retrieval facility for user access to model and CAD data, which appears to be relatively easy to use. It also provides a mechanism for digital archiving of the vaulted information. MDM has facilities for defining and managing release and change procedures, and provides support for basic workflow management.

A major feature of MDM is the suite of various CAD integrations that are available with it. An example is shown in Figure 2. These integrations are described more fully in a later section of this report, along with a list of the application systems for which integrations are available. Basic capabilities provided with these integrations include:

- Managing all CAD-created objects, including versioning, through vault security
- Providing access to CONTACT's PDM functionality through the CAD user interface
- Establishing and maintaining references between different data models
- Automatically completing data in drawing headers from information stored in the vault
- Automatically generating 2D and 3D archive formats for managed CAD models

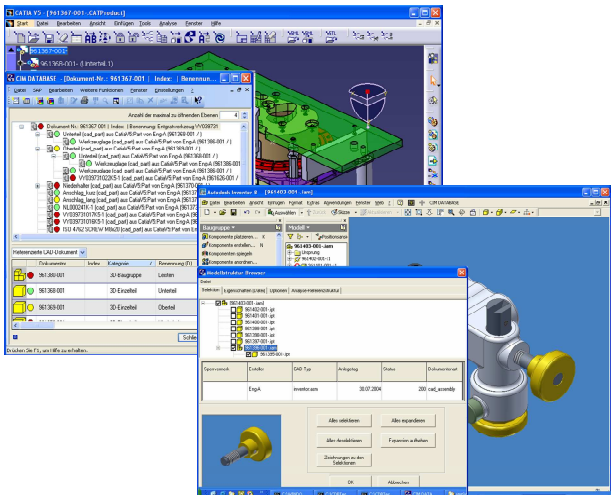

Figure 2. CAD Integration Examples
(Courtesy of CONTACT)

DOK delivers PDM document management functionality (see Figure 3). It provides storage and archiving of documents in a secure information repository (e.g., the electronic vault). Capabilities are provided to define and manage user access privileges to information maintained under control; critical for a secure environment.

DOK is intended to support management of large numbers of documents across distributed locations. Its

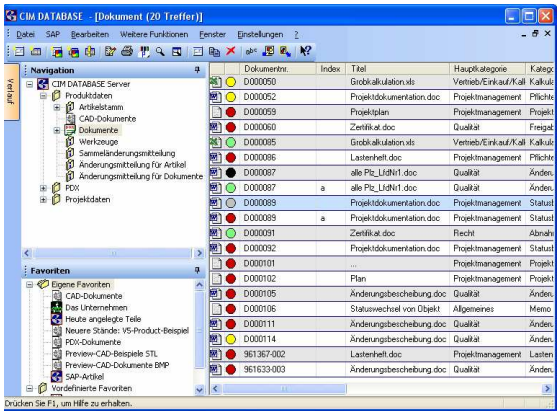

Figure 3. DOK Document Management
(Courtesy of CONTACT)

structured document storage facility supports mapping of organization units (e.g. projects), allocation of the product structure, and automation of processes and procedures. DOK supports a combined criteria (multiple keyword) retrieval and an on-demand full text retrieval facility which provide users a comprehensive retrieval functionality.

DOK includes integrations to Microsoft Office products. OLE technology is used to deliver integration to the Microsoft Windows desktop.

DOK's backup facilities support automatic archiving of documents and explicit archiving upon user direction. Standards for default document formats for use during archival can be defined, including TIFF or PDF.

SML and STL

SML and STL enable the development of a company-wide product database for parts lists and Bills of Material (BOM) and for parts classification. They also support CONTACT's standard integrations to CAD applications.

STL provides facilities for definition and management of parts lists and BOMs (see Figure 4). This includes the modeling of hierarchical product structures, part quantity, parts lists and product configurations.

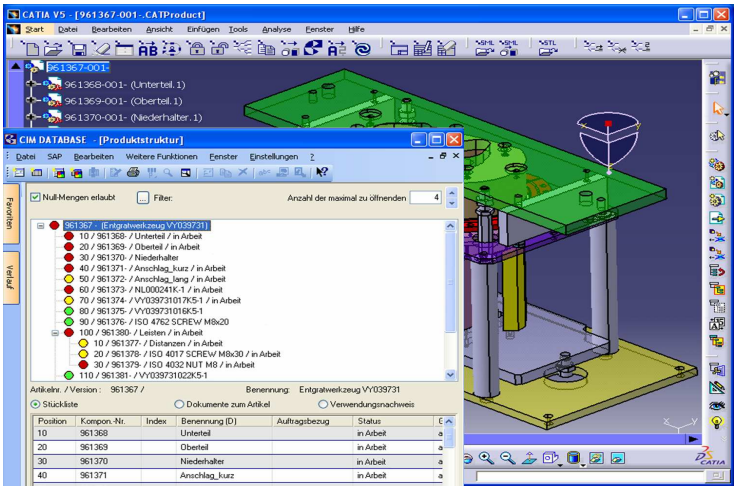

Figure 4. BOM Management
(Courtesy of CONTACT)

SML enables implementation of a component and material classification database and supports DIN 4000/4001 and the upcoming DIN 4002 (see Figure 5).

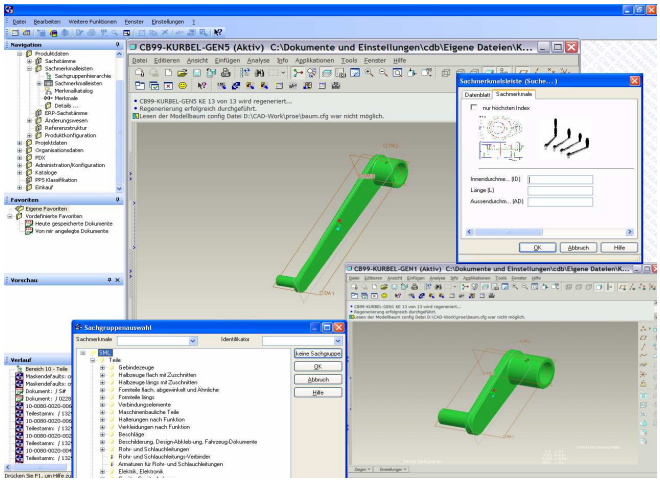

Figure 5. Part Classification
(Courtesy of CONTACT)

PDX

PDX enables PDM-supported Product Data eXchange with suppliers, customers, and external engineering and design offices (see Figure 6). It includes synchronous and asynchronous sending and receiving of data and documents, integrated with EDI tools (e.g., EDIManager, DAXWARE, DXM). PDX will generate ENGDAT messages. It supports standard protocols STEP AP 214 ORG, OFTP, FTP, etc.

PDX provides for automatic composition of complex structures, e.g., 3D assemblies for previewing prior to sending data. PDX enables automatic conversion of data into the desired sending formats (Linux tar-Package, ZIP etc.). It also supports data transmission via web or e-mail. PDX includes:

- Automatic generation and sending of delivery notes
- Automatic receiving of sent data
- Status control of all orders/jobs
- Recording/logging of all data exchange processes (including history retrieval)

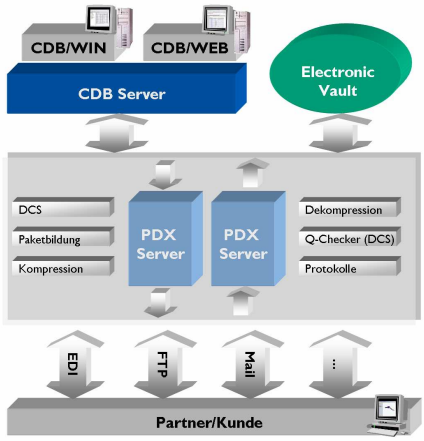

Figure 6. Data Exchange Architecture
(Courtesy of CONTACT)

PCS

PCS is not an instrument for project planning, but is designed for controlling projects during execution in a multi-project environment. It is intended to be used by all project team members – not just project managers (see Figure 7).

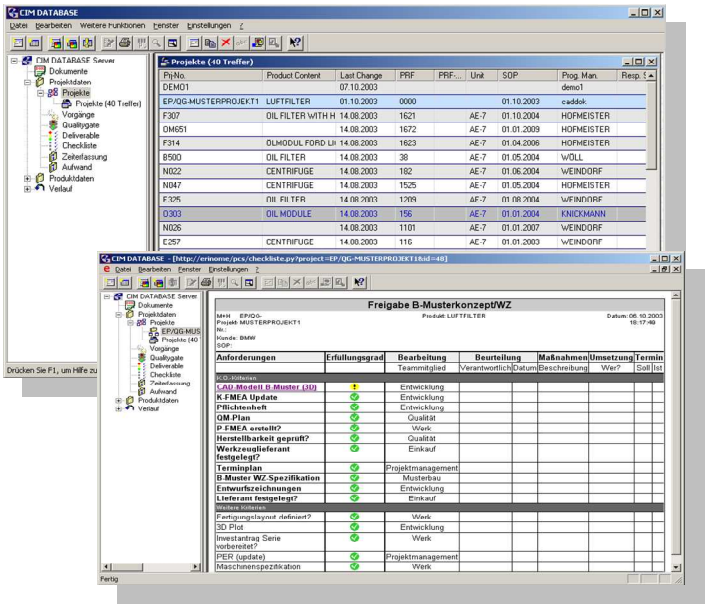

Figure 7. Project Management
(Courtesy of CONTACT)

A project is the context for cooperation and collaboration. It is the organizational framework for all project orientated data and documents (information backbone). PCS' focus is on operation and actual data: the degree of project completion, quality, status, labor, etc. PCS enables collaborative Project Management so that a company can achieve an overall view of project management and execution.

PCS is a web-based application with the following features and capabilities:

- Project oriented document management (specifications, offers, calculations, CAD data)
- Project, operation and job definition
- Flexible project structures
- Continuous progress control (traffic lights function, reporting, drill-down, multiple projects)
- Integrated quality assurance (quality gates, checklists, open issue lists, project templates)
- PCS supports automated linking of work effort (time spent by a user) to the parts and tasks associated with that effort
- Integrated release and change management
- Access rights to members and teams (based on roles), resource allocation and management
- Standard integrations to basic applications (CAD, ERP, Office …)

WEB

WEB is a facility for accessing all product data and documents via the Internet and/or intranets worldwide (see Figure 8). It is intended to enable efficient retrieval of drawings, models, documents, material master information, and other model and product related data.

WEB uses hyperlink technology to access the data regardless of its location. WEB supports viewing of documents using plug-ins, For example:

- TIFF for drawings
- VRML for 3D models
- JT for 3D models
- PDF for Office documents

WEB provides for secure access with password controls, session context, SSL encoding, etc. It supports integration of JAVA-applets and is designed for easy administration.

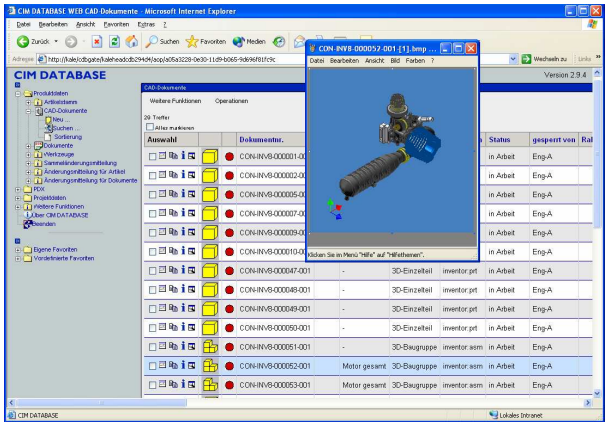

Figure 8. Browser Interface
(Courtesy of CONTACT)

eLINK

eLINK provides the base functionality of WEB (see Figure 9). It is an active WEB Client that supports input, modification, or manipulation of metadata adjusted to CIM DATABASE access rights. It supports individual user interface views depending on user rights. CONTACT's CAD-Interfaces can be used via eLINK, e.g. supporting UNIX- based CATIA V4 seats.

Business processes are mapped as individual electronic templates forms (e.g., technical release). eLINK provides for secure access using session passwords, SSL-encoding, and other security and authentication mechanisms. eLINK uses the PDM infrastructure to integrate external locations and engineering partners (e.g., for distributed development).

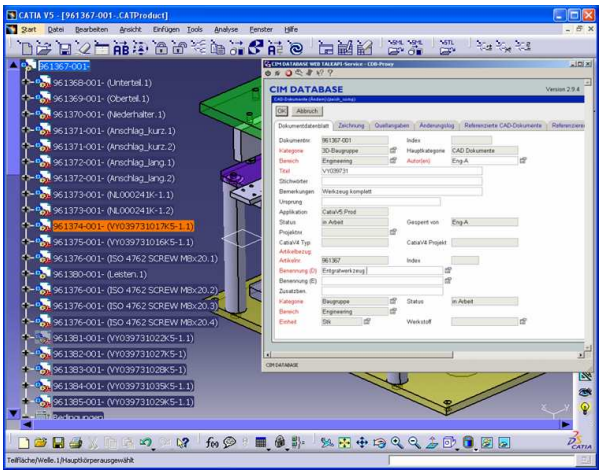

Figure 9. eLINK Example
(Courtesy of CONTACT)

CIM DATABASE DataManager

DataManager is an entry-level solution for basic model and document management. It is a pre-configured version of the MDM module of CIM DATABASE with defined standard features. Parts list and parts coding management are not included as part of DataManager. Its major features include:

- Electronic vault
- Document retrieval
- Document history and versions
- Company-wide viewing und plotting
- Model and document management
- Integration to a CAD-system
- Change management and authorization management
- Digital archiving (TIFF, PDF, etc.)

DataManager provides standard integrations to leading 2D and 3D design systems, including: AutoCAD, CATIA V4 and V5, ME 10, MicroStation, Pro/ENGINEER, Solid Designer, Solid Edge, and SolidWorks. CAD integration to ERP/MRP systems is possible, but the standard integrations are not included as part of the DataManager product suite.

DataManager is available on multiple hardware platforms for both UNIX and PC-networks. Intended for quick and cost-effective implementation, it may also be used as a pilot project for company-wide PDM programs. CONTACT provides an upgrade from DataManager to CIM DATABASE.

CAD-TALK

CAD-TALK is CONTACT's middleware for CAD integration. It provides relatively easy-to-use, standardized APIs and pre-built functionality to be used by CAD integration modules (see Figure 10). CAD-TALK provides support for multiple technology eco-systems such as Java, .NET, and classic C/C++ to bridge between CIM DATABASE and CAD systems. CAD-TALK includes customizable GUI components, storage handling, and business logic to manage 2D, 3D, and ECAD.

CAD-TALK enables CONTACT to build and maintain its relatively wide range of CAD integrations quickly and efficiently. CONTACT also provides a "CAD-TALK Components" product, that enables integration of CAD-TALK into third-party and home-grown PDM systems.

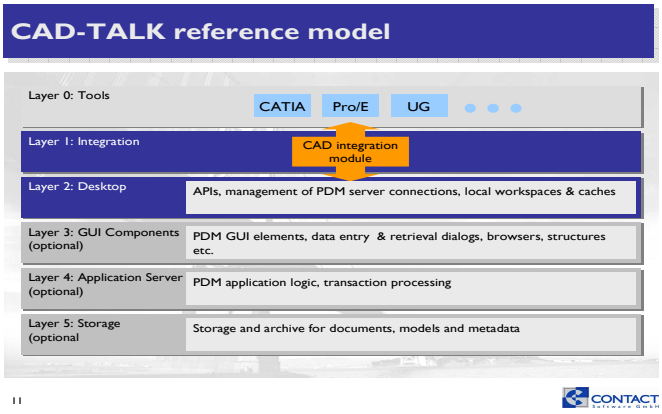

Figure 10. CAD Talk Architecture
(Courtesy of CONTACT)

Security is based on SSL. Support of internalization is incorporated within the product suite, but that capability has not yet been fully documented.

Database support includes Oracle and Informix. Support for Microsoft SQL-Server has been announced for 2006.

CONTACT supports multiple operating systems and platforms. Supported servers include SUN, HP, IBM, SGI UNIX systems, Windows 2000/XP, and LINUX. Clients are Windows-based PCs (Windows 2000 and XP) and a browser-based web-client.

Industry-Specific Solutions

CONTACT provides focused, scalable solutions based on industry-specific configurations (data model, processes, user interface, etc.). These are intended to enable companies in the targeted industries to have an opportunity to implement a productive system in a relatively shorter timeframe. Each solution is designed to support the standards of the applicable industry, and the range of functions is adjusted to the requirements of each industry. Currently, industry-specific solutions are available for:

- Automotive suppliers
- Mechanical engineering, series production
- Special purpose machine engineering
- Plant engineering

Customized solutions are typically based on an industry-specific solution, with extensions and modifications as necessary to fit the unique situation. These custom solutions are developed under an overall consulting agreement with CONTACT.

4.2 Architecture & User Interface

Operating Environment

The architecture of CIM DATABASE (see Figure 11) was originally client-server based, and has been migrated to a Web-based architecture. The software is written in C++ and CORBA. CONTACT has adopted the widespread scripting language Python, used for customization and extending their base products.

Distributed Architecture

CIM DATABASE supports distributed database replication and CONTACT reports that they have several multi-sited implementations. The solution has limited "briefcase" and off-line use capabilities. CONTACT also reports that they have a "Mobile PDM" development program underway to expand its mobility and distributed use functionality.

Tailoring and Customization

CONTACT provides custom solutions to its customers through contracted programming services. CONTACT reports that a key aspect of most customization efforts is related to data model modification and the extension of that into the related application programming. They discourage extensive customization, since it typically results in higher maintenance/update costs and sometimes precludes customers from utilizing newer

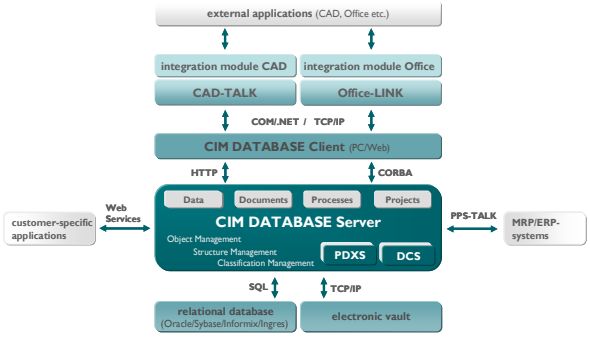

Figure 11. CIM DATABASE Application Architecture
(Courtesy of CONTACT)

developments. In addition to changing the data model, a scripting language is available for more extensive customization.

User Interface (UI)

CONTACT supports both Windows- and browser-based user interfaces. The UI is based on Microsoft Windows standards, providing a familiar look and feel. It uses a menu bar and tool bars that are set up similarly to other Windows-compliant products. Full functionality is support in both the Windows UI and the browser UI. However, the browser does not yet support drag-and-drop.

Collaboration

CONTACT supports both internal and external collaboration between individuals and organizations. CIM DATABASE provides standard collaboration capabilities like shared vault access and managed workflows. WEB, eLINK, and CONTACT's viewing facilities enable users at any location to access, edit, markup, and comment on data models and other controlled information and to work concurrently with others on common projects and tasks.

4.3 Integrations

Enterprise Application Integration

CONTACT addresses Enterprise Applications Integration (EAI) by providing four integration tool sets. These tool sets are used to perform integrations with different areas. The four suites are:

- CAD-TALK for CAD integration
- PPS-TALK for MRP integration
- EDM-TALK for EDM/PDM integration
- Office-LINK for office automation integration

Figure 12 illustrates CIM DATABASE's integration structure.

Integrations currently supported include Microsoft Office and a number of CAD systems, in addition to a variety of popular ERP systems.

Standard CAD Integrations

CONTACT's CAD integrations provide a framework for users to find their CAD data — not only the CAD models, but all of the data related to the models that is typically stored and managed by CAD systems in multiple, separate files. The integrations ensure that

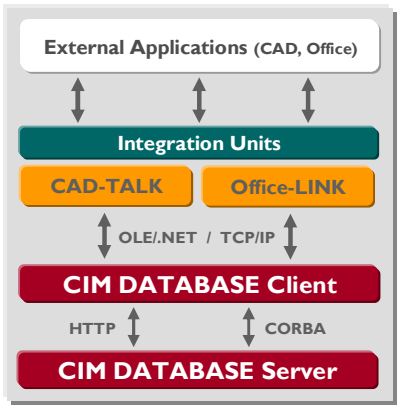

Figure 12. CIM DATABASE Integration Stack
(Courtesy of CONTACT)

assembly links created by a CAD system as file name references are maintained even when a part file or assembly is moved to a new storage location. CIM DATBASE also manages relationships among different file types (drawings, models, NC programs, finite element models, visualization models, etc.), assuring, for example, that drawings of models are updated when the models change.

CONTACT states that all integrations are developed to enable access to all of the data types available in the CAD system. This includes data related to the structures of assemblies and files within the CAD system.

CONTACT reports that standard integrations are available for more than 25 design systems, including:

- SolidWorks
- Solid Edge
- AutoCAD
- CATIA V4 and V5
- CADAM
- Inventor
- Medusa
- Unigraphics
- Pro/Engineer and Pro/Engineer Wildfire
- I-DEAS
- ICEM
- ME10
- MicroStation
- Solid Designer
- Mentor Graphics
- Technovision

Other Standard Integrations

CONTACT has also developed integrations with ERP packages, enabling companies to leverage product data

across manufacturing, procurement, and other mission-critical functions. ERP integrations include:

- SAP R/3
- SAP PS
- Baan
- SIVAS
- PSIPENTA

Supported integrations to other applications include:

- Microsoft Office
- FrameMaker
- Ruplan
- Promis

5. User Assessment

CIMdata interviewed CONTACT customers to better understand how they were using the products and their satisfaction with both the product suite and CONTACT.

5.1 WITTE-Velbert GmbH & Co. KG

WITTE-Velbert GmbH & Co. KG is using CONTACT solutions to manage product data, such as material masters, BOMs, 3D CAD models and drawings, classification, and workflow management for their releasing processes. They utilize integrations with CATIA V4/V5, Unigraphics NX and I-deas, and CONTACT's standard SAP interface for transferring material masters, BOMs, and documents.

With more than 200 users of the system, they report that their overall CAD data management reliability and consistency has improved, users are working with the correct data, and that adding material master information and BOMs is much more efficient than the methodology used prior to implementing the CONTACT solution.

Mr. Markus Schaffrick, Group Manager, Technical Business Integration, stated that they are very satisfied with the system, although there were some initial technical problems due to the fact that many different systems were being integrated. He also stated that CONTACT's support has been very good. They have direct contact with the development groups and are able to directly request new features they want to see incorporated into the product suite.

Mr. Schaffrick indicated that WITTE-Velbert will continue to use and expand their use of CONTACT solutions. For instance, they are planning to use the PDX module to improve data exchange with other companies.

5.2 Herbert Olbrich GMBH & Co. KG

A CONTACT customer since 1997, Herbert Olbrich GMBH &Co KG has more than 75 users of CONTACT applications. They are using CIM DATABASE to manage Medusa, CATIA V4 and V5, and Microsoft Office documents. CIM DATABASE replication supports distributed product development in Germany and the Czech Republic.

Mr. Michael Niestegge, Executive Manager IT, stated that CONTACT has been flexible and customer-driven, responding quickly and effectively to their requests. As a result of their implementation, they now have all users working on the same level of information which has reduced errors in the data.

He stated that working with CONTACT support has been a positive experience. They know the support people and can work directly with them to solve any problems and issues.

Mr. Niestegge also stated that Herbert Olbrich has received the expected benefits in improved data management and intend to expand their solution to include more users. Further, they plan to add the PDX and PCS modules.

6. Summary

While CONTACT started with a CAD data management solution, they have evolved to a more robust environment and are expanding their ability to manage more comprehensive business processes. They are developing a richer set of applications that will reside on top of the foundation PDM and integration capabilities that are already in place.

A core competency for CONTACT software is their focus on CAD data management, engineering data management (EDM), product data management (PDM), and consulting. They have a solid understanding of the problems and working methods of customers and prospects in their target industries. Because of the engineering environment of their customers and their ability to quickly add new functionality to the standard product, as well as providing customer-specific customizations, they have a loyal and growing customer base. Customers view CONTACT as a company that is knowledgeable,

listens to their needs, and responds quickly to their requests for product enhancements. Further, they have provided a continuous upgrade path which has enabled companies to incorporate new features and capabilities with a minimum of disruption to their production environment.

While well-known in central Europe, CONTACT has limited exposure and brand recognition in other regions. CONTACT clearly has strong multi-CAD data management expertise and knowledge of those systems and how they will be used by customers. Although the current release of their solution has limited configuration management capabilities when compared to the industry leaders, they provide a solid PDM-based solution for small- to medium-sized enterprises and groups within larger companies. CONTACT can be a good match, especially for companies that design with the tools for which it has been tailored, but also for companies that need integrated multi-CAD capability.

About CIMdata

CIMdata, a leading independent worldwide firm, provides strategic consulting to maximize an enterprise's ability to design and deliver innovative products and services through the application of PLM. CIMdata works with both industrial organizations and suppliers of technologies and services seeking competitive advantage in the global economy by providing world-class knowledge, expertise, and best-practice methods on PLM solutions.

CIMdata helps industrial organizations establish effective PLM strategies, identify requirements, and select PLM technologies, optimize their operational structure and processes to implement solutions, and deploy these solutions.

For PLM solution suppliers, CIMdata helps define business and market strategies, delivers worldwide market information and analyses, provides education and support for internal sales and marketing teams, as well as overall support at all stages of business and product programs to make them optimally effective in their markets.

CIMdata provides world-class knowledge, expertise, and best-practice methods on PLM solutions. These solutions incorporate both business processes and a wide-ranging set of PLM enabling technologies.

In addition to consulting, CIMdata conducts research, provides PLM-focused subscription services, and produces several commercial publications. The company also provides industry education through international conferences in North America, Europe, and the Pacific region.

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