DELMIA V5.17 extends the IBM Product Lifecycle Management solutions portfolio

Description .................................................2
Product positioning .................................... 5
Reference information ............................... 6

At a glance

DELMIA is the key enabler for delivering a digital manufacturing process environment to optimize production:

- Offers a comprehensive suite of digital 3D manufacturing solutions
- Delivers industry-specific business process optimization
- Uses the open Product-Process-Resources (PPR) model to enable continuous creation and validation of manufacturing processes in the context of the product throughout the design phases
- Captures, shares, and reuses manufacturing knowledge and the best industrial practices
- Provides the technology and the collaborative environment to digitally define the way products are manufactured

Overview

DELMIA allows manufacturers in any industry to virtually define, plan, create, monitor, and control all production processes. It delivers an array of dedicated applications for industries, combined with an environment for knowledge sharing and process and resource management to capture and implement best practices for manufacturing.

DELMIA product lifecycle management (PLM) technology allows manufacturers to interact with factory processes early in the design stage, months before actual production commitment. Engineers, management, and stakeholders can have a 3D visualization of the real world with the ability to evaluate "what-if" scenarios, make changes, optimize shop floor operations, and identify and eliminate costly errors and design mistakes. This gives any enterprise the opportunity to facilitate higher quality and to foster greater innovation.

An IBM-delivered digital manufacturing solution from Dassault Systemes: DELMIA offers the most comprehensive suite of digital manufacturing solutions available in today’s marketplace. Its advanced technologies deliver end-to-end solutions dedicated to critical customer manufacturing processes.

A full range of solutions for multiple industries: DELMIA offers solutions for automotive, aerospace, defense, shipbuilding, consumer goods, electrical and electronics, and fabrication and assembly. The solution offering ranges from process planning to general assembly processes and factory simulation across all manufacturing segments. Its comprehensive suite of products allows complete design and validation of manufacturing processes through digital mock-up (DMU).

Integrated and complete PLM solutions: DELMIA’s digital manufacturing solutions are built on the Dassault Systemes Product-Process-Resource (PPR) data model, which enables the
continuous creation and validation of manufacturing processes in the context of the product throughout the product life cycle. The seamless integration of the entire portfolio through the DELMIA Manufacturing Hub covers all the facets of the manufacturing engineering process, allowing the reuse of best industrial practices.

**Pervasive 3D-based communication and collaboration:** DELMIA V5 delivers the technology and the collaborative environment to digitally define the way products are manufactured, leading to solutions with major benefits in productivity, efficiency, safety, and quality.

### Key prerequisites

DELMIA V5.17 runs on selected versions of:

- Microsoft™ Windows™
- AIX®
- Hewlett Packard HP-UX
- Sun Solaris

### Description

**Interactive manufacturing applications for the digital enterprise**

DELMIA delivers complete digital solutions for on demand, just-in-time manufacturing processes. It allows manufacturers to bring their products to market more quickly, while reducing production costs and encouraging innovation.

DELMIA digital manufacturing solutions allow manufacturing organizations to design and visualize the entire production process for a digitally specified product before deploying any physical materials and machines. The solutions integrate closely with CATIA design solutions, as well as with ENOVIA VPLM and ENOVIA SmarTeam data management and collaborative work solutions to deliver substantial benefits to companies deploying PLM. Businesses using DELMIA in conjunction with these solutions can increase opportunities for collaboration, reuse, and collective innovation throughout the product life cycle.

Key reasons to embrace digital manufacturing for your market challenges are:

- Deliver a strategic planning tool to define and analyze in 3D the production processes early in the product development cycle
- Provide a concurrent view of all engineering disciplines and intelligence to all stakeholders throughout the production process
- Reduce time-to-market
- Gain higher return on investment and increase product quality
- Enable a collaborative environment for the extended network and supplier integration
- Foster innovation and standardization of products, processes, and resources
- Optimize work force efficiency and productivity

**DELMIA solutions**

The DELMIA PLM suite of computer-aided process planning and engineering solutions enables companies to achieve lean manufacturing and build-to-order processes by enabling an environment for concurrent engineering. Coverage extends from the conceptual phase of product and process design, through simulation and monitoring of manufacturing processes, to shop floor operations such as capacity planning, implementation, and monitoring.

- **Process planning**, providing a clear overview of the sequences and links among processes, timing, cost, and resources early in product design conception
- **Process detailing and validation**, applying 3D process planning solutions to manufacturing to verify and/or redefine processes and validate work force performance and interaction
• **Resource modeling and simulation**, with tools to model and simulate factory flows, robotic work cell setup and off-line programming, numerical control machining, and inspection

• **Digital manufacturing foundations**, ranging from single-device activity to extended-enterprise production flow

• **Execution**, delivering the product and process information created during the planning and design stages to the production floor

**Process planning**: The DELMIA Process Planning solution suite delivers a comprehensive process and resource planning support environment. The resulting process diagrams can provide a clear overview of the sequences and links between processes and resources early in product design conception. With process planning tools, you can perform such tasks as:

- Layout planning
- Time measurement
- Process and resource planning
- Product evaluation
- Cost analysis
- Line balancing

DELMIA V5 DPM Process Definition is a basic process planning configuration that enables organizations to optimize their production facility layout, leading to optimized factory production and output.

**Process detailing and validation**: This solution suite employs the structure and diagrams created in the Process Planning solution suite to the application-specific disciplines of manufacturing. It can be:

- Used to verify process methodologies with actual product geometry and to define processes to a greater level of detail within a 3D environment
- Expanded by including DELMIA human solution products to validate work force performance and interaction within defined processes
- Employed to validate processes in 3D for:
  - Manufacturing and maintenance
  - Weld point allocations
  - Assembly sequences
  - Factory/cell layouts
  - Machining operations

**DELMIA V5 Digital Product Manufacturing (DPM) Assembly Solutions** sets a new standard for assembly process planning and verification software for developing manufacturing and maintenance processes. These solutions incorporate a single, standardized interface for preplanning, detail planning, concurrent engineering, and assembly process verification.

**DELMIA V5 Body in White** provides a scalable, resource-centric solution for the process planning domain that allows engineers to plan body assembly processes, manage spot welds and other fasteners, perform resource planning, and validate the process plan using an interactive 3D environment.

**DELMIA V5 Machining Solutions** enhances the ability of manufacturing industries to cut down in time and cost of machine parts. These solutions comprise applications based on a unique and unified architecture and infrastructure that encapsulate numerous activities in the machining domain.

**DELMIA V5 Human Solutions** is a fully featured human modeling bundle for defining, validating, and optimizing the human “workers” in the manufacturing environment. You can create and manipulate advanced, user-defined digital human manikins in a DELMIA V5 DPM environment for human-product interaction and worker process analysis early in the product life cycle. The solutions give such organizations a suite of human simulation and human factors (HF) tools specifically geared towards understanding and optimizing the relationship between humans
DELMIA V5 DPM Structure is a powerful solution for process planning and lofting in the 3D environment. Using the manufacturing bill of material (MBOM) output from Assembly Process Planner as input, it allows you to complete the lofting job, starting from generation of lofting processes, through creation of in-process models, to creation of manufacturing features and workshop documents. Manufacturing preparation is also possible for structures.

DELMIA V5 DPM Structure Manufacturing allows entry-level structure manufacturing and workshop document generation, enabling lofting of heavy structure parts in a 3D environment directly on 3D design data. Structure Manufacturing is a file-based solution that allows generation of an MBOM driven by the process.

Resource modeling and simulation: Solutions in this suite deliver the tools for creating and implementing resources, application routines, and the mechanical programming that are integral with the Process Planning and Process Detailing and Validation solutions. Within this suite, resources such as robots, tooling, fixtures, machinery, automation, and ergonomics are defined and integrated into a complete manufacturing scenario. It includes complete advanced simulations such as robotic workcell setup and offline programming.

DELMIA V5 Robotics offers a scalable, flexible, easy-to-use solution for tooling definition, workcell layout, robot programming, and workcell simulation. It is much more than a basic offline programming system. Rather, it can capture the underlying philosophy and intent of the robot programmer, allowing the capture and reuse of best practices, leveraging programming knowledge, and automating the repetitive work of robot programming.

DELMIA V5 Machine Tool Path Simulation provides a unique numerical control (NC) machining definition configuration that enables organizations to optimize machining operation definition. Through its integrated product environment, the Machine Tool Path Simulation suite delivers a seamless solution to address all your manufacturing environment needs.

Execution: DELMIA execution solutions offer a powerful and scalable digital technology-based tools that delivers a rich array of functions to assist with production activity. Engineers can now make product and process information created during the planning and design stages available to the shop floor worker in a visually intuitive, graphically-intensive, and easy-to-use manner. This means the right kind of data is available at the right time using the least number of button clicks.

DELMIA Execution solutions offer the ability to:

- View 3D-based process data, product data, and simulations using an optional touch screen GUI
- Consolidate all information and engineering data in an easy to use 3D viewer
- View work instructions utilizing the DPM Work add-on for Digital Process Manufacturing (DPM) Assembly simulations
- View referenced data through hyperlinks in standard browsers
- Integrate with third-party tools, such as manufacturing execution systems

DELMIA DPM Shop is an interactive 3D product and process information resource tool for enhancing worker performance. It uses visually intuitive, graphically intensive, and easy-to-use engineering product and manufacturing process data and delivers work instructions directly to the shop floor.

DPM Shop replaces expensive, error-prone, and hard-to-manage paper-based systems. Designed to be versatile, adaptable, and scalable to fit a broad range of production environments, DPM Shop gives workers a simple, mouse-driven or touch-screen-compatible interface to perform their work.

DELMIA V5 Shop Order Release enables the release of a shop order package, including the as-planned process and 3D work instruction data for the requested configuration, to production systems, such as a Manufacturing Execution Systems (MES), in preparation for the production launch. Shop Order Release also accepts work execution status from an MES and updates the status of the as-planned data.

Accessibility by people with disabilities

Owing to the graphics-intensive nature of its engineering design applications, this product has been granted a deviation.
DELMIA brings together a set of digital manufacturing solutions targeted for industrial sectors in which continuing optimization is a determinant factor. These solutions allow manufacturers to bring their products to market more quickly, while reducing production costs and encouraging innovation.

DELMIA digital manufacturing solutions assist industries where continuous transformation and optimization of manufacturing processes are critical. These include automotive, aerospace and defense, fabrication and assembly, electrical and electronic, consumer goods, and shipbuilding. The DELMIA PLM suite of computer-aided process planning and engineering solutions is designed to enable companies to achieve lean manufacturing and build-to-order by providing an enabling environment for concurrent engineering. Coverage extends from the conceptual phase of product and process design, through simulation and monitoring of manufacturing processes, to shop floor operations such as capacity planning, implementation and monitoring.

DELMIA digital manufacturing solutions provide companies with many benefits, including:

- Comprehensive process planning in the early design phase
- Maximization of production efficiency and factory utilization
- Optimization of investment
- Ability to capture and re-use best practices and enterprise knowledge
- Ability to anticipate and correct potential problems in the design and manufacturing pipeline
- Derivation and carryover of process engineering and production resources
- Reduction of time-to-market and manufacturing costs
- Reduction in the time required to start production and related costs
- Ability to improve time-to-volume
- Ability to foster innovation of products and processes
- Ability to gain maximum profitability

IBM has worked with thousands of manufacturers of all sizes around the world to implement solutions designed to enhance product development and streamline manufacturing processes.

- PLM solutions from IBM have become the industry standard for OEMs, supply chain partners, and suppliers.
- IBM has over 31,000 PLM customers worldwide in a wide range of industries that include automotive, aerospace, industrial products, electronics, chemicals, and petroleum.
- IBM does not just install technology. We serve as a trusted advisor to provide the best-of-breed PLM applications, IT environment, integration capabilities, and business strategy to help you achieve your business objectives.
- IBM and Dassault Systemes have partnered for over 20 years to develop and deliver leading PLM solutions.
- IBM and Dassault Systemes have one of the largest PLM practices in the world with over 2,000 application engineers and consultants worldwide.
- Dassault Systemes, IBM, and our clients have teamed to implement Dassault Systemes and IBM technology to power digital manufacturing, resulting in significant return on investment (ROI) and improvements in manufacturing and engineering effectiveness.
- IBM Global Business Solutions also has a complete suite of services offerings around the DELMIA, CATIA, ENOVIA VPLM, and ENOVIA SmarTeam products, including consulting, planning, implementation, integration, training, support, and managed services.

Hardware and software support services

SmoothStart™/Installation services: IBM SmoothStart/Installation Services are not available for DELMIA products.

DELMIA V5 services plan
PLM Services, part of IBM Global Business Services, offers a robust portfolio of services to assist with the implementation of DELMIA V5. Careful planning and implementation are essential to getting the most from DELMIA V5.

IBM can help with assessment, solution design, planning, installation, data migration, custom application development, best-practices consulting, user and administrative training, support, and project management.

For additional information on service offerings and how IBM professionals can assist with the implementation of DELMIA V5 in your environment, contact an IBM representative or IBM Services organization or visit


Select PLM Services from the list of related links.

Reference information

For information about PLM V5.17, refer to ZA06-0198, dated September 5, 2006.
For information about CATIA V5.17, refer to ZP06-0323, dated September 5, 2006.
For information about ENOVIA VPLM V5.17, refer to ZP06-0324, dated September 5, 2006.
For information about ENOVIA SmarTeam V5.17, refer to ZP06-0325, dated September 5, 2006.

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