

DELMIA Digital Manufacturing Portfolio



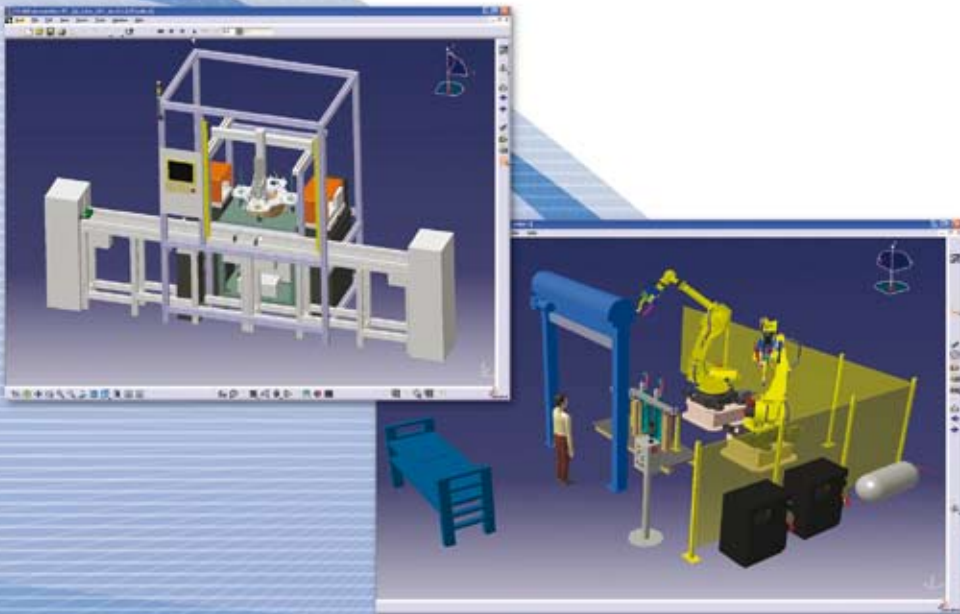
DELMIA V5R18

Digital Manufacturing for Production Performance throughout the Product Lifecycle

DELMIA V5R18 allows manufacturers in any industry to virtually define, plan, create, monitor and control all production processes. This solution provides an array of dedicated industry applications, combined with an environment for knowledge sharing and process and resource management. This environment allows enterprises to easily capture and implement Product Lifecycle Management (PLM) best practices for manufacturing.

Differentiating PLM value for the manufacturing industry

- ***Link product design and process engineering to shorten the product development process***
- ***Accelerate process engineering to shorten time-to-production***
- ***Seamlessly transfer digital process models into production to shorten the ramp-up process and increase production efficiency***
- ***Advanced solutions to optimize production systems and processes***
- ***Provide early access to manufacturing information that streamlines the product manufacturing process.***



The PLM approach with Digital Manufacturing

DELMIA offers a distinct set of integrated manufacturing solutions to put power in the hands of your engineers to build your entire digital factory, step by step. By implementing digital manufacturing technology within your organization, you will have the right technology to interact with your factory processes early in the design stage and long before actual production commitments. Engineers, management and stakeholders can have a 3D visualization of the real world with the ability to make changes, identify and eliminate costly errors and design mistakes, facilitate higher quality and foster innovation.

DELMIA leverages the proven benefits of treating the entire manufacturing process as a digital PLM pipeline. A complete digital realization of the entire manufacturing environment, from process planning to shop floor implementation, allows manufacturing engineers to utilize the latest product design data to anticipate and optimize specific production processes and requirements.



Manufacturing a product is significantly more information rich than the product itself. Empowering your company with digital manufacturing as part of an overall PLM strategy can revolutionize the product lifecycle by creating new value and innovation at each stage of the process. When constant innovation is a survival strategy, digital manufacturing accelerates design creativity and revolutionizes production planning. With digital manufacturing, design and manufacturing collaborate simultaneously in a concurrent engineering environment, allowing manufacturing engineers to be involved early in the design process to ensure manufacturing readiness.

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

- *Provides a strategic planning tool to define and analyze production processes in 3D early in the product development cycle*
- *Provides a concurrent view of all engineering disciplines and intelligence to all stakeholders throughout the production process*
- *Reduces time-to-market*
- *Gains higher return on investment and increased product quality*
- *Enables a collaborative environment for extended network and supplier integration*
- *Fosters innovation and standardization of product, process and resources*
- *Optimizes workforce efficiency and productivity.*

Industry PLM Solutions for Manufacturing

Best-in-class strategies for your industry and your suppliers

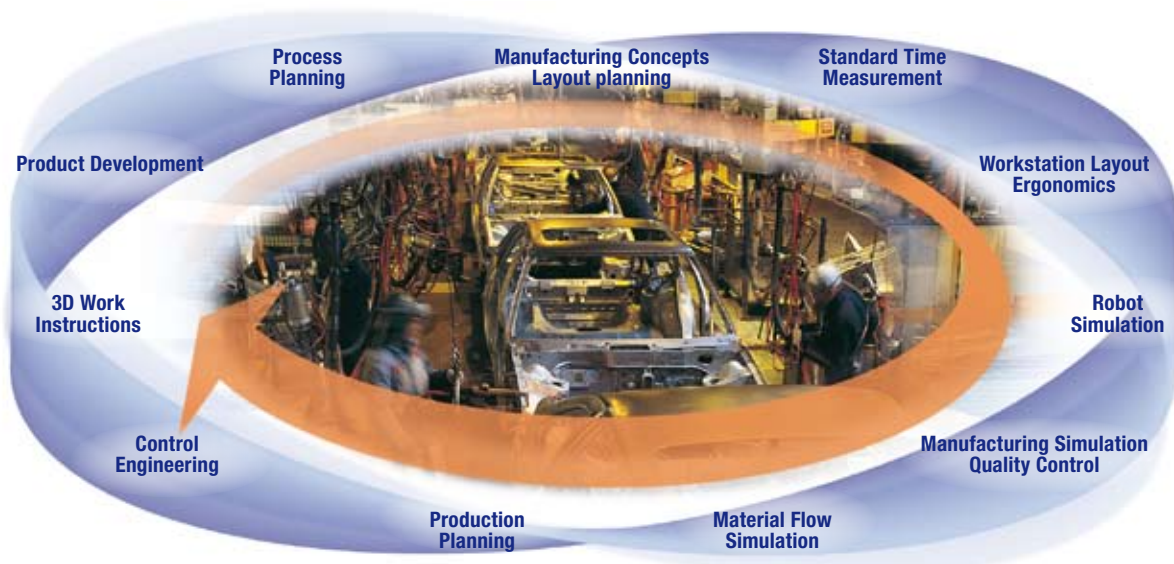
- *Automotive*
- *Aerospace and Defense*
- *Fabrication and Assembly*
- *Electrical and Electronic*
- *Consumer goods*
- *Shipbuilding*
- *Plant, Process and Petroleum.*

No matter what the industry or the size of the company, DELMIA has proven industry expertise to meet your individual manufacturing needs.

DELMIA industry solutions for PLM deliver a combination of proven industry practices, knowledge, and business processes, along with a best-in-class digital manufacturing portfolio to design the right solution to address your specific needs.

To meet the increasing pressures to succeed, DELMIA offers companies the right digital infrastructure to define, plan, create, monitor and control all processes, from early process planning and assembly simulation, and modeling welding lines, robot and cell programming, to a complete definition of the production facility and equipment. Suppliers within these manufacturing segments also benefit greatly from DELMIA solutions that are detailed to meet their specific needs.

By implementing DELMIA to address today's industry challenges, companies have the best industry solutions available to evaluate the impact of global change, shift processes to quickly respond to the competition and take advantage of market opportunities. Additionally, DELMIA provides the collaborative environment to retain, protect and continuously grow intellectual capital and drive standardization of products, processes and resources with the flexibility needed to meet industry demands.



DELMIA Digital Manufacturing Solutions: A Seamless End-to-End Workflow

DELMIA 3DLive Configuration

The DELMIA 3DLive configuration provides every enterprise user a single environment for all PLM information required to understand, collaborate and make decisions in today's global organizations. This unique solution transforms PLM data into business intelligence, enabling on-demand 3D collaboration, while offering a unique user experience based on an efficient search of PLM information and navigation simplicity.

DELMIA 3DLive provides all the product lifecycle information required to understand, collaborate and make decisions in today's globally distributed environment within a single environment. DELMIA 3DLive turns product, process and resource (PPR) data into business intelligence, enabling on demand 3D collaboration while leveraging a unique user experience that combines simple and intuitive navigation with rapid and efficient search capabilities so users across the enterprise can leverage PLM information to drive the business forward.



Services based on the V5 Services Oriented Architecture provides DELMIA 3DLive users with an access to any kind of PLM sources (including ENOVIA, manufacturing hub and 3D XML files) while leveraging advanced collaboration scenarios between all the stakeholders.

DELMIA 3DLive includes:

- *Introduces a new paradigm in PLM user experience, emphasizing ease of use and efficient knowledge searches*
- *Provides easy 3D and PPR navigation*
- *Enables real-time collaboration within extended teams*
- *Makes all enterprise stakeholders active participants in accelerated decision-making processes.*



DELMIA 3DLive leverages additional 3DLive Connectors to extend the scope of indexing beyond manufacturing hub data sources. DELMIA 3DLive provides out of the box support for other Dassault Systèmes Live Applications, to deliver on-demand support for specialized activities including processes that require more advanced collaborative reviewing capabilities.

DELMIA 3DLive delivers easy to use search, navigation, and collaboration capabilities that provide a real-time snapshot of product status across the enterprise and throughout the lifecycle. Easy and fun to use, 3DLive revolutionizes Product Lifecycle Management—putting knowledge at your fingertips and contextually connecting you to the product ecosystem.

Expanding beyond PLM with DELMIA Automation

DELMIA Automation helps to significantly reduce product launch time by allowing manufacturers to test, validate, and debug your system before physical commissioning. DELMIA Automation offers powerful solutions for control engineering and automation lifecycle management that enable validation of Programmable Logic Controllers (PLC) against a virtual machine, a cell, or an entire line and performance analysis of these systems.

DELMIA Automation solutions allow control engineers to leverage the virtual model of the machine or cell to explore different “what if?” scenarios that are otherwise very difficult to validate.

What if one robot is running slow? What happens when the line transitions from product A to product B? How will the system react to an operator hitting the emergency switch, and how will the machine start again after the emergency stop to resume full production rate?—Weeks before integration of all components and systems occur, the control engineer can test all fault conditions, saving costly down time once the system is in production.

DELMIA Automation provides a natural extension to the DELMIA PLM (Product Lifecycle Management) offering. While PLM solutions simplify and enhance end-to-end product management, Automation solutions validate and improve the internal behavior of control systems.

PLM data can also be reused and integrated into DELMIA Automation for a truly powerful solution that extends beyond the product lifecycle to secure a true digital factory vision.

Key Benefits of DELMIA Automation Solutions:

- *Validate all diagnostic codes without being on the shop floor*
- *Visualize and validate the process, driven by the PLC code prior to integration*
- *Validate as many “what if?” scenarios as needed and fully debug controls*
- *Test production and failure conditions*
- *Work with any PLC on the market such as Schneider, Omron, or Rockwell Automation*
- *Achieve a significant reduction in risk and start-up time.*



DELMIA: The Digital Manufacturing brand

DELMIA software suite is the key enabler in a PLM-enabled environment for manufacturing. As the digital manufacturing brand of IBM / Dassault Systèmes' PLM portfolio, with CATIA, and ENOVIA, DELMIA delivers a digital manufacturing process environment to optimize production systems before moving to physical implementation, with the convenience of a desktop.

DELMIA's 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. They integrate closely with CATIA design solutions, as well as

with ENOVIA data management and collaborative work solutions to deliver substantial benefits to customers deploying PLM. Businesses using DELMIA in conjunction with these solutions can increase opportunities for collaboration, reuse, and collective innovation throughout the product lifecycle.

DELMIA provides entire digital solutions for ondemand and just-in-time manufacturing processes, allowing manufacturers to bring their products to market more quickly, while reducing production costs and encouraging innovation.

Key benefits of DELMIA Digital Manufacturing

- *Conduct comprehensive process planning in the early design phase*
- *Validate and simulate production processes and requirements*
- *Anticipate and correct potential problems in the design and manufacturing pipeline*
- *Communicate with shop floor workforce more quickly and effectively*
- *Create a collaborative environment for design, manufacturing and suppliers*
- *Capture and reuse of best practices and enterprise knowledge*
- *Reduce production costs*
- *Reduce overall time to market*
- *Gain maximum profitability.*



Interactive Manufacturing Applications for the Digital Enterprise

The DELMIA portfolio is grouped into distinct domains within manufacturing to offer solutions to enable your entire digital factory. All DELMIA configurations support concurrent engineering from the conceptual phase of product and process design, through simulation and monitoring of manufacturing processes, to shop floor operations. Whether used as stand alone solution sets or as dedicated PLM applications for industries, DELMIA's vast portfolio fosters an environment for knowledge-sharing and process and resource management to capture and implement best practices throughout your enterprise, helping you realize your design vision with maximum efficiency and profitability.

DELMIA Domains for manufacturing:

Navigation and collaboration

delivers viewing and navigation access to the product, process and resource (PPR) data for design engineers and others throughout the enterprise, thereby providing a powerful communication and collaboration tool for viewing and sharing information, linking design, manufacturing, stakeholders and the non-technical community.

Process Planning

provides a comprehensive process and resource planning support environment. The resulting process diagrams offer a clear overview of the sequences and links between processes and resources early in product design conception.

Manufacturing Review

provides easy-to-use tools to enable product and tooling designers to review the impact of their designs in the same PPR environment that a production engineer identified an issue with the design and process. Quick access to the PPR manufacturing hub allows collaborative review of process scenes allowing fast resolution of design issues.

Process Detailing and Validation

employs the structure and diagrams of the Process Planning solutions in the application specific disciplines of manufacturing. Verifies process methodologies with actual product geometry and defines processes to a greater level of detail within a 3D environment.

Resource Modeling and Simulation

provides the tools to develop, perfect, and implement resources, application routines and mechanical programming that are integral to the Process Planning and Process Detailing & Validation solutions. Within this set of solutions, resources such as robots, tooling, fixtures, machinery, automation and ergonomics are defined and infused to create a complete scenario for manufacturing.

Human Factors for Manufacturing

enhances the manufacturing environment with specific ergonomic tools to ensure that your latest technological innovations are being designed from the perspective of the people who actually build,

maintain, install, and operate them. From a factory worker to an aircraft pilot—today's manufacturers must consider these Human Factors (HF) early in the product life cycle.

Production Flow Simulation

offers an environment for industrial engineers, manufacturing engineers, and management to develop and prove out best manufacturing flow practices throughout the production design process. Experiment with parameters such as facility layout, resource allocation, kaizen practices, and alternate scheduling scenarios.

Manufacturing Execution

provides 3D digital enterprise communication and teamwork exchange tools to assist with production activity. Users can make product and process information created during the planning and design stages available to the shop floor worker, and offer this data in a visually intuitive, graphically intensive, easy-to-use format.

Automation

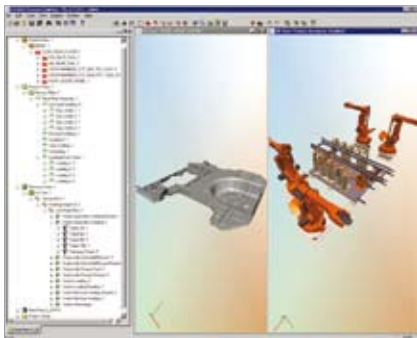
allows control engineers and programmers to validate and debug PLC code for all devices from tooling, robots, clamps, safety devices, and electrical to hydraulics and pneumatics—within a virtual production environment, before integration of the actual equipment on the shop floor.

DELMIA Configuration Portfolio

Navigation & Collaboration

A. DELMIA PPR Navigator for Manufacturing (EPC)

DELMIA PPR Navigator for Manufacturing Configuration enables a user to access and administer the hub, allowing them to create, manipulate and navigate any item of information that is of significance within the context of integrated process engineering.



A. DELMIA PPR Navigator for Manufacturing (EPC)

B. DELMIA ENOVIA Manufacturing Hub Access (EAC)

DELMIA ENOVIA Manufacturing Hub Access Configuration allows DELMIA V5 clients to access the ENOVIA Manufacturing Hub (IPD Server).

C. DELMIA 3D Live (LID)

DELMIA 3DLive configuration enables a user to search and navigate DELMIA Product, Process & Resource (PPR) information stored in the manufacturing hub, regardless of location, for on demand, real-time 3D collaboration. DELMIA 3DLive provides out of the box support for other Dassault Systèmes 3DLive Applications, including processes that require more advanced collaborative reviewing capabilities.

Services based on the Dassault Systèmes service-oriented architecture (SOA) offer DELMIA 3DLive users access to any kind of PLM sources (including ENOVIA Manufacturing Hub and 3D XML files) while leveraging advanced collaboration scenarios between all stakeholders.

This configuration also enables administrators to create and define the settings of 3DLive for end users through 3DVIA 3DLive Product (DSN) extensions available with this configuration.

Process Planning

A. DELMIA DPM Process Definition 2 (PD2)

DELMIA DPM Process Definition 2 provides a generic process-centric authoring foundation to build work preparation documentation for the shop with the flexibility and power of the manufacturing hub. DELMIA DPM Process Definition 2 allows authoring of process plans using products and resources, creation, management and verification of precedence constraints between processes in 3D, and the production of HTML based work documentation for the shop. Products and Resources may be inserted from the manufacturing hub or from flat file systems. This solution provides a path for users to grow into full digital process planning and simulation.



A. DPM Process Definition 2 (PD2)

B. DELMIA Process & Resource

Definition 2 (XP2)

DELMIA DPM Process & Resource Definition 2 enables organizations to author process and resource data in the context of product data. It allows users to associate resources and products to processes, and to define and verify the sequence of processes in a full 3D environment. This configuration can be sold as a stand alone, file-based V5 solution or combined with other DELMIA file-based solutions for process planning, verification and simulation tools to create a client specific solution. It can also be combined with the manufacturing hub to create an integrated enterprise-wide client-specific solution. The file based solution can also be enhanced by adding DELMIA Multi-CAX products, providing integration with the customer's CAD design systems.

C. DELMIA Process & Resource Planner (ERC)

DELMIA Process & Resource Planner enables users to access and administrate the hub, enabling them to create, manipulate and navigate any item of information that is of significance within the context of integrated process engineering. It also allows users to efficiently and reliably determine the time required to perform a specific job sequence based on commonly used time measurement methods or company-proprietary time standards. Its intuitive user interface allows multiple users to work efficiently after only a brief familiarization period. It supports the step-by-step detailing and systematic preliminary planning of a manufacturing process based on the process graph and the manufacturing concept graph.

With capacity and cost analysis that can be activated at any time, the planner has an effective instrument for quickly and accurately determining the optimal manufacturing process for a new product from both a technical and economic standpoint, without any detours or guessing games. DELMIA Process and Resource Planner enables the creation, management and comparison of planning alternatives and variants in all phases of planning.

D. DELMIA Process Engineer (EEC)

DELMIA Process Engineer provides users with early recognition of process risks, re-use of proven processes, traceable changes and evidence of the decision making process, as well as access to process knowledge scattered across the enterprise. This comprehensive treatment of the relationships between product, process and manufacturing resource data, that also includes layout, empowers users to avoid planning mistakes, paving the way for a precise overview of the entire process early in the planning stages. This clear-cut overview details investment costs, production space and manpower resources required.

DELMIA Process Engineer provides a structured planning methodology that systematically leads to an optimal solution by considering all process-related costs and analyzing alternatives early in the planning stage. Risks are drastically reduced because DELMIA Process Engineer allows for the re-use of proven processes. Since DELMIA Process Engineer supports multiple users and allows for collaborative planning, planning time is shortened. In addition, DELMIA Process Engineer organizes each project based on the unique structure of the product, processes, resources and plant layout involved. This solution customizes the user interface and reporting formats to meet individual requirements and promotes an identical planning environment for all projects, provides built-in documentation of planning history, and reflects any data change immediately across the entire project.

Manufacturing Review

A. DELMIA DPM Review 2 (PR2)

DELMIA DPM Review 2 provides tools for the Design engineer to review product and process issues in the same context as they were first identified, saving time and easing communication between the production and design departments. Production engineers can easily create and annotate Process Scenes to detail production issues and automatically report the issue to the design department. Design and Tooling engineers can click on the link provided which jumps to the target state of process simulation demonstrating the issue exactly as it was reported and annotated by the production engineer. This review capability speeds identification and communication of design and tooling issues from the production department to the design department and enables rapid response to production issues. The addition of the optional DELMIA Space analysis provides process analysis tools including Clash, Measure Inertia, Sectioning, Distance and Band analysis, measure between, and measure item.

Addition of the optional DELMIA Human Review provides resource analysis including Data Readout for Devices, Human Analysis with window, coloring, and display.

Process Detailing and Validation

A. DELMIA DPM Assembly 2 (AP2)

DELMIA DPM Assembly 2 sets a new standard for assembly process planning and verification software for developing manufacturing and maintenance processes. DELMIA DPM Assembly leverages and contributes to the concurrent engineering capabilities of the PLM solutions, providing an end-to-end solution incorporating a single, unified interface for pre-planning, detail planning, and assembly process verification.



A. DELMIA DPM Assembly 2 (AP2)

B. DELMIA DPM Envision Assembly 2 (EA2)

DELMIA DPM Envision Assembly 2 sets a new standard for end-to-end assembly process planning, detailing, resource modification, mechanism creation, simulation, and verification software for developing manufacturing and maintenance processes.

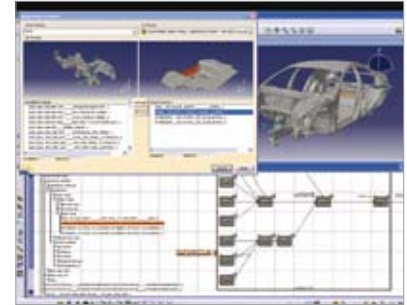
DELMIA DPM Envision Assembly 2 leverages and contributes to the concurrent engineering capabilities of the PLM solutions, providing an end-to-end solution incorporating a single, unified interface for pre-planning, detail planning, inverse kinematics application and assembly process verification.



C. DELMIA DPM Body in White 2 (BP2)

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DELMIA DPM Body in White 2 (BP2) provides a scalable, collaborative, resource-centric solution that leverages the manufacturing hub for the process planning domain and allows engineers to create, modify, and design body in white assembly processes, including the design of body assembly processes, management of fasteners (such as spot welds), selection of resources and validation of the resulting process plan in an interactive 3D environment.



D. DELMIA DPM Body in White XT 2 (BX2)

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DELMIA DPM Body in White XT 2 provides a scalable, collaborative, end-to-end capable, resource-centric solution that leverages the manufacturing hub for the process planning domain and allows engineers to plan body assembly processes, manage fasteners, perform resource planning, select resources, modify resources with CAD tools, complete assembly sequence and robot feasibility studies and validate the process plan in an interactive 3D environment.



E. DELMIA DPM Machining 2 (PP2)

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DELMIA DPM Machining 2 offers a powerful machining process planning solution for process planners and manufacturing engineers. DELMIA DPM Machining 2 incorporates a single unified interface for reviewing the results of sequenced machining operations in the process plan, producing process sheets and generating NC programs. DELMIA DPM Machining 2 offers the first truly collaborative environment for designing, planning, verifying, managing, and documenting machining processes within a single application framework. It is designed to seamlessly integrate product engineering and process planning through the manufacturing hub, thereby reducing the lead-time from concept to production. DELMIA DPM Machining 2 addresses the needs of machining process planning and documentation for prismatic and turned parts.

F. DELMIA Industrial Engineer (EIC)

DELMIA Industrial Engineer Configuration enables the user to access and administrate the hub, allowing them to create, manipulate and navigate any piece of information that is of significance within the context of integrated process engineering. It also allows users to efficiently and reliably determine the time required to perform a specific job sequence based on commonly used time measurement methods or company-proprietary time standards. Its intuitive user interface allows diverse groups of users to work efficiently after only a brief familiarization period.

G. DELMIA DPM Structure 2 (DS2)

DELMIA DPM Structure 2 is a powerful solution for process planning and lofting in the 3D environment. DELMIA DPM Structure 2 takes the Manufacturing Bill of Materials (MBOM) output from DELMIA Assembly Process Planner as its input and allows users to complete the lofting job starting from automatic generation of lofting processes, creation of manufacturing features, creation of In Process Models, and automated generation of workshop documents. Manufacturing data is then stored in the manufacturing hub to allow concurrent engineering and downstream re-use of the data.

H. DELMIA DPM Structure

Manufacturing 2 (SP2)

DELMIA DPM Structure Manufacturing 2 delivers entry-level structure manufacturing and workshop document generation functions for lofting heavy structure parts directly from 3D design data in a 3D environment. This file-based solution can be used to generate an MBOM driven by the lofting process. Its powerful lofting capabilities, including the generation of manufacturing features and plate/profile flattening, along with its ability to generate workshop documentation, make this solution a powerful tool for the manufacture of heavy structure parts, such as those used in shipbuilding.

DELMIA DPM Structure Manufacturing 2 offers a smooth introduction to the process modeling approach, preparing the path to full-scale digital manufacturing.

Resource Modeling & Simulation

A. DELMIA Robotics 2 (WL2)

DELMIA Robotics 2 is a powerful, integrated solution that enables manufacturing organizations to design, simulate, optimize and program robotic workcells in a 3D digital factory environment. It 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. It can capture the underlying philosophy of intent of the robot programmer, allowing the company to capture and reuse best practices, leverage programming knowledge and automate the repetitive work of robot programming. It is ideally suited for work in the Automotive Body in White industry, particularly robot spot welding and material handling operations. It can also be extended for use in other domains.



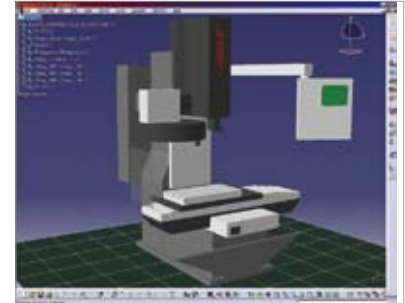
A. DELMIA Robotics 2 (WL2)



B. DELMIA NC Machine Tool Path Simulation 2 (VT2)

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DELMIA NC Machine Tool Path Simulation 2 enables NC programmers to verify, modify and validate tool paths and material removal based on tool paths or ISO code to eliminate potential machine tool collisions upfront, during programming, thus reducing lead time. It provides a unique NC machining definition configuration that enables organizations to optimize machining operation definition. Through the integrated product environment, users have a seamless solution to address all their manufacturing environment needs. It easily validates the machining setup for selected machine tools and tool paths or ISO code upfront, during machining operation definition. An intuitive user interface enables the NC programmer to assign a complete machine to a part operation and to simulate selected tool paths or ISO code with the machine, determine interferences, and redirect the tool path before creating the NC program.



C. DELMIA NC Machine Tool Builder 2 (MB2)

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DELMIA NC Machine Tool Builder 2 easily models resources with kinematics, such as NC machines, tools, tool changers, pallet changers and other peripheral devices for use and reuse in the entire machining process. DELMIA NC Machine Tool Builder 2 provides a comprehensive NC machine definition including geometry, kinematics, and controller and technological information. The unique resources created with DELMIA NC Machine Tool Builder 2 may be saved to the manufacturing hub and used by process planners, inspection engineers, NC programmers and NC operators to create machining process plans, validate machining setups, detail machining operations, create simulations, validate and optimize tool paths, perform post processing and emulate controllers. The DELMIA NC Machine Tool Builder 2 solution can also import NC machines created in DELMIA D5 VNC for use in V5 machining applications.

Human Factors for Manufacturing

Human factors for manufacturing provides a full-featured suite of human modeling products for defining, validating, and optimizing the human “workers” in the manufacturing environment. Advanced, user-defined digital human manikins can be created and manipulated in a DELMIA DPM V5 environment for human-product interaction and worker process analysis early in the product life cycle. These products give user organizations a suite of human simulation and human factors (HF) tools specifically geared toward understanding and optimizing the relationship between humans and the products they manufacture, install, operate, and maintain. This release also includes four new pre-configured human catalogs to further enhance your efficiency and time to market.

A. DELMIA Human Builder 2 (MHB)

DELMIA Human Builder 2 creates and manipulates accurate standard digital humans in the DMU environment for early human-product interaction analysis. Tools provided include manikin generation, gender, and percentile specifications, manikin manipulation techniques, animation generation, and advanced vision simulation. A user-friendly interface ensures that first-level human factors studies can be undertaken by nonhuman factors specialists.

Human Builder 2 addresses the needs of design engineers, managers, maintainability engineers and concept designers from the aerospace, automotive, plant design, heavy engineering, ship building and electrical goods industries. This product is used in conjunction with Human Measurements Editor 2 (MHM), Human Posture Analysis

2 (MHP), and Human Activity Analysis 2 (MHA) for advanced detailed digital human creation and analysis and improved human comfort, performance and safety.

B. DELMIA Human Activity Analysis 2 (MHA)

DELMIA Human Activity Analysis 2 is an extension to Human Builder 2 (MHB). It allows users to maximize human comfort, safety and performance through a wide range of advanced ergonomic analysis tools that comprehensively evaluate all elements of human interactions with a product and specifically analyze how a manikin will interact with objects in its virtual environment.

Human Activity Analysis 2 addresses the needs of human factors engineers, assembly and decommissioning planners, maintainability engineers, packaging engineers and manufacturing engineers from industries as diverse as aerospace, automotive, plant design, shipbuilding, and electrical goods. It can

be used effectively in conjunction with Human Measurements Editor (MHM) and Human Posture Analysis (MHP). These products can be combined to create a fully-integrated Human Engineering Design solution.

- *Analyzes lifting, lowering and carrying tasks using the NIOSH 81 and 91 standard equations*
- *Allows rapid upper limb assessment (RULA) for quick and intuitive analysis of arm position*
- *Analyzes pushing and pulling tasks using the SNOOK and CIRELLO standard equations.*

C. DELMIA Human Posture Analysis 2 (MHP)

DELMIA Human Posture Analysis 2 is an extension to Human Builder 2 (MHB) that allows users to analyze all quantitative and qualitative aspects of manikin posture. Whole body and localized postures can be examined, scored and iterated to determine operator comfort and performance when interacting with the product in accordance with published

comfort databases. User-friendly dialogue panels provide postural information for all segments of the manikin. Color-coding techniques ensure that problem areas can be quickly identified and iterated to optimize posture.

Human Posture Analysis 2 allows users to create their own specific comfort and strength library for the needs of each individual application. It addresses the needs of human factors engineers, assembly and decommissioning planners, maintainability engineers, packaging engineers and manufacturing engineers in industries as diverse as aerospace, automotive, plant design, heavy engineering, shipbuilding and electrical goods.

D. DELMIA Human Measurements Editor 2 (MHM)

DELMIA Human Measurements Editor 2, an extension to Human Builder 2 (MHB), allows users to create advanced, user-defined manikins employing a number of advanced anthropometry tools.

The manikins can then be used to assess the suitability of a product against its intended target audience.

Human Measurements Editor 2 addresses the needs of human factors engineers, maintainability engineers, and packaging engineers in the aerospace, automotive, heavy engineering, plant design, shipbuilding, white goods and electrical industries. It can be used effectively in conjunction with Human Builder 2 (MHB), Human Posture Analysis 2 (MHP) and Human Activity Analysis 2 (MHA). These products can be combined to create a fully-integrated Human Engineering Design solution.

E. DELMIA Human Task Simulation 2 (MHT)

DELMIA Human Task Simulation 2 is a powerful human modeling tool for creating, validating, and simulating activities for workers using the DPM planning and simulation infrastructure. Workers, as represented by manikins, perform these activities within the PPR environment where they can walk to

a specific location (across floors, up ladders, down stairs) based on time parameters defined by the user, move from one target posture to another, and pick and place parts in the work area by following the movements and paths of objects.

These activities can be combined with DPM assembly activities to analyze the relationship between workers and other entities within the simulation. They can be simulated and validated using the powerful process simulation capabilities within DPM, allowing the user to test multiple alternatives for the work humans must accomplish in a specific manufacturing, maintainability or assembly environment.

Production Flow Simulation

A. DELMIA QUEST®

DELMIA QUEST® is a complete 3D digital factory environment for process flow simulation and analysis, accuracy, and profitability. QUEST's flexible, object-based, discrete event simulation

environment, combined with powerful visualization and robust import/export capabilities, makes it the engineering and management solution of choice for process flow simulation and analysis.

Manufacturing Execution

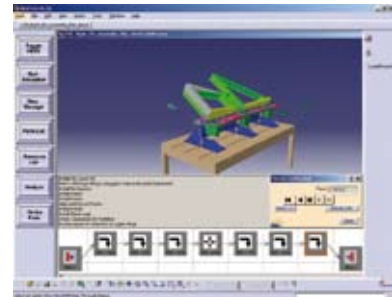
A. DELMIA DPM Shop 2 (SF2)

DELMIA DPM Shop 2 is an interactive 3D product and process information resource tool to enhance your workers' performance. DELMIA DPM Shop 2 uses visually intuitive, graphically intensive, easy-to-use engineering product and manufacturing process data and delivers work instructions directly to the shop floor to replace 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, DELMIA DPM Shop 2 gives workers a simple, mouse-driven or touch-screen compatible interface to perform their work. It can be integrated with third party tools, such as MES systems or ERP, to access legacy data using standard

interfaces, and can fully access data available within the manufacturing hub. It is always current and reflects the latest engineering and process changes.

B. DELMIA DPM Shop Order Release 2 (SR2)

DELMIA Shop Order Release 2 provides tools for the manual and automatic extraction of Shop Order Instance (SOI) information based on configurations for consumption by internal and external systems. It 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 MES, in preparation for the production launch. DELMIA Shop Order Release 2 also accepts work execution status from MES and updates the status of the as-planned data.



B. DELMIA DPM Shop Order Release 2 (SR2)

DELMIA R18 Configurations

DELMIA is packaged for easy building of the optimal solution according to usage profiles and process requirements.

Predefined configurations provide product sets that target specific tasks, processes or industries.

DELMIA R18 Process Detailing & Validation Solutions		Configuration Names																
		DELMIA – DPM Assembly 2	DELMIA – DPM Body In White 2	DELMIA – DPM Body In White XT 2	DELMIA – DPM Structure 2	DELMIA – ENVISION Assembly 2	DELMIA – NC Machine Tool Builder 2	DELMIA – Manufacturing Simulation Foundation 2	DELMIA – Machining Foundation 2	DELMIA – DPM Process Definition 2	DELMIA – DPM Machining 2	DELMIA – DPM Review 2	DELMIA – DPM Shop 2	DELMIA – Structure Manufacturing Preparation 2	DELMIA – Shop Order Release 2	DELMIA – NC Machine Tool Simulation 2	DELMIA – Robotics Simulation 2	DELMIA – DPM Process & Resource Definition 2
Product Names		AP2	BP2	BX2	DS2	EA2	MB2	MF2	MP2	PD2	PP2	PR2	SF2	SP2	SR2	VT2	WL2	XP2
APN	DELMIA – DPM Assembly Process Simulation 2	•		•		•												
BWP	DELMIA – DPM Fastening Process Planner 2		•	•														
CSM	DELMIA Automation – CSM Object Modeler 1			•				•									•	
D5I	DELMIA – D5 Integration 2	•	•	•	•	•	•	•	•		•		•			•	•	•
DBG	DELMIA – Device Building 2			•		•											•	
DMR	DELMIA – 3D Simulation for Manufacturing 2	•	•	•		•		•	•		•		•		•	•		
DOM	DELMIA – Object Manager 2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
DST	DELMIA – DPM Structure Lofting 2				•													
LM1	DELMIA Automation – CLM Object Modeler 1			•				•									•	
MAS	DELMIA – Assembly Design 1			•		•	•											
MCP	DELMIA – MultiCAX CATIA Plug-in	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
MFT	DELMIA 3D Functional Tolerancing & Annotation 2 (FTA)					•					•							
MG1	DELMIA – Generative Drafting 1			•	•	•	•				•							
MID	DELMIA – Interactive Drafting 1			•	•	•	•											
MIG	DELMIA – IGES Interface 1					•	•											
MK1	DELMIA – Product Knowledge Template 1				•								•					
MLM	DELMIA – Lathe Machining 2										•							
MNC	DELMIA – NC Manufacturing Review 2						•		•		•				•			
MNV	DELMIA – DMU Navigator 2	•			•	•												
MPD	DELMIA – Part Design 1			•		•	•											
MPM	DELMIA – Prismatic Machining 2										•							
MPS	DELMIA – NC Machine Tool Simulation 2															•		
MRL	DELMIA – Resource Layout 2	•	•	•		•											•	
MRT	DELMIA – Real Time Rendering 1			•		•	•											
MSA	DELMIA – DMU Space Analysis 2	•	•	•		•										•	•	
MSD	DELMIA – Manufacturing System Definition 2		•	•													•	
MTB	DELMIA – NC Machine Builder 2						•											
MWS	DELMIA – Wireframe & Surface 1			•	•	•	•											
PRD	DELMIA – DPM Process Definition 1									•								
PRM	DELMIA – PPR Manufacturing Hub Navigator 2	•	•	•	•	•	•			•	•	•	•		•	•	•	•
PRP	DELMIA – DPM Process & Resource Definition 2	•	•	•	•	•	•	•	•		•						•	•

DELMIA R18 Process Detailing & Validation Solutions		Configuration Names																
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Product Names		AP2	BP2	BX2	DS2	EA2	MB2	MF2	MP2	PD2	PP2	PR2	SF2	SP2	SR2	VT2	WL2	XP2
PRR	DELMIA – PPR Editor 2			•		•												
PTP	DELMIA – DPM Machining Process Planner 2										•							
SHF	DELMIA – DPM Shop Floor Viewer 2												•					
SMP	DELMIA – Structure Manufacturing Preparation 1													•				
SOR	DELMIA – Shop Order Release 2														•			
SRL	DELMIA – Standard Robot Library 2		•	•														•
TSA	DELMIA – Tool Selection Assistant 2		•	•														•
WSQ	DELMIA – Workcell Sequencing 2			•		•												•
WSU	DELMIA – Device Task Definition 2			•		•												•

DELMIA R18 Process Planning Solutions		Configuration Names				
		DELMIA – ENOVIA Manufacturing Hub Access	DELMIA – Process Engineer	DELMIA – Industrial Engineer	DELMIA – PPR Navigator for Manufacturing Hub	DELMIA – Process & Resource Planner
Product Names		EAC	EEC	EIC	EPC	ERC
CEF	DELMIA – Configuration & Effectivity	•	•			
EMH	DELMIA – ENOVIA Manufacturing Hub Client	•	•	•	•	•
EMS	DELMIA – ENOVIA Manufacturing Hub Server	•	•	•	•	•
EPR	DELMIA – Process & Resource Planning		•			•
L2P	DELMIA – 2D Layout Planning		•			•
L3P	DELMIA – 3D Layout Planning		•	•	•	•
MCM	DELMIA – Manufacturing Change Management	•				
OCU	DELMIA – Object Customization		•	•	•	•
PRN	DELMIA – PPR Navigator & Editor		•	•	•	•
PTE	DELMIA – Plantype Editor		•	•	•	•
PVW	DELMIA – Product Viewing		•			
RPD	DELMIA – Report Designer		•	•	•	•
STM	DELMIA – Standard Time Measurement		•	•		
TGT	DELMIA – Target Tracking		•			

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