DELMIA V5R19 - FACT SHEET

**DELMIA V5R19**
*DS DELMIA Release 19 further expands Digital Manufacturing and shop floor solutions by combining the power of DS PLM with the strengths of partnerships.*

- Introduction
- What’s New at a Glance
- Overview
- Detailed Description

**INTRODUCTION**

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

DELMIA PLM technology allows manufacturers to interact with factory processes early in the design stage and 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 allows any enterprise to facilitate higher quality and foster greater innovation. DELMIA also extends its PLM technology to smaller businesses within the supply chain to allow smaller companies to better connect and collaborate with larger manufacturers.
WHAT'S NEW AT A GLANCE

DELMIA V5R19:

- Introduction of DELMIA Work Instruction Composer
- DELMIA Automation - Control Design Exchange enables Virtual Control Programming in partnership with Rockwell Automation
- New General Assembly planning and simulation solutions for DELMIA PLM Express
- New capabilities drive new business in the Consumer Goods and Automotive domains
- Extends the DELMIA Automation into the PLM portfolio
- Introduction of DELMIA - ENOVIA X-BOM for Manufacturing Hub

OVERVIEW:

DELMIA V5R19’s products and features listed below bring value to the customer, reinforcing Dassault Systèmes’ and IBM’s DELMIA fundamentals:

Solutions Suited to Meet Your Needs – Role based solutions for companies of all sizes

- DS announces the availability of two new General Assembly solutions in the DELMIA PLM Express offering to support the needs of the small to medium manufacturing enterprise to quickly build, validate, and optimize General Assembly process plans and generate process documentation for the shop floor.
  - DELMIA – General Assembly Planning
  - DELMIA – General Assembly Simulation

Breakthrough Technologies – helping you gain productivity

- New in Release 19, DELMIA – Work Instruction Composer combines the strengths of the DELMIA – ENOVIA Manufacturing Hub and 3DVIA Composer for an unparalleled user experience in the creation and maintenance of shop floor work instructions.
- Joint development partnership between DS DELMIA and Rockwell Automation results in the release of DELMIA Automation – Control Design Exchange; a solution that enables a collaborative environment for mechanical designers and controls engineers using Rockwell Automations RSLogix 5000.

DELMIA PLM for Your Industry – Digital Manufacturing solutions built for you

- Enhancements to DELMIA – Process Engineer deliver Product Variant Matrix and Multiple Variant Line Balancing capabilities needed by the Consumer Goods and Automotive domains; domains that have a high number of product variants that require agile solutions for defining processes and balancing their complex assembly lines.
With the release of V5R19, DELMIA Automation solutions for controlled resource modeling and controlled system virtual commissioning are extended the PLM portfolio with DELMIA – ENOVIA Manufacturing Hub enabled solutions:

- DELMIA – Controlled Workcell Builder
- DELMIA – Controlled Workcell Validation

Easy, Open and Smart – Adaptable to you

New in V5R19 is the DELMIA – ENOVIA X-BOM for Manufacturing Hub delivers a highly collaborative environment with real-time synchronization between ENOVIA V6 and the DELMIA ENOVIA Manufacturing Hub.

DETAILED DESCRIPTION

Solutions Suited to Meet Your Needs – Role based solutions for companies of all sizes

Expanding the DELMIA PLM Express Offering with General Assembly solutions:

With the release of V5R19, DS DELMIA is expanding the DELMIA PLM Express offering to meet the needs of the small to medium manufacturing enterprise requiring general assembly planning, validation, optimization, and documentation solutions.

DELMIA – General Assembly Planning is a file based solution that allows the user to capture and re-use enterprise process knowledge and leverage that knowledge with product designers, down-stream planners, and shop floor technicians. Planning time is reduced through the use of capabilities such as Automatic Assignment Assistant; and automated tool that will automatically assign parts and sub-assemblies to the step in the proper step in the process plan.

Key capabilities include:

- Capitalize and reuse assembly processes
- Automatic assignment assistant will assign parts to the proper process step based on process precedence and the state of the assembly.
- Static 3D verification of assembly process sequence through process “shingling”
- Instant update of product design changes in the process plan
- Generation of process documentation and keep it up-to-date with product/process changes

When added to the DELMIA – General Assembly Planning seat, DELMIA – Assembly Simulation will allow the planner to validate and optimize their process plans with 4D simulation. Additionally, these simulations can be used to collaborate with design engineers when iterating on Design for Assembly issues as well as
communicating assembly concepts to planner, project managers, or even the shop floor technicians.

Key capabilities include:
- Simulation assembly process sequence in 3D
- Check for interferences and collisions that may prevent/hinder the assembly process
- Measure distances and clearances

Breakthrough Technologies – helping you gain productivity

DELMIA – Work Instruction Composer:
New in Release 19, DELMIA – Work Instruction Composer combines the strengths of the DELMIA – ENOVIA Manufacturing Hub and 3DVIA Composer for an unparalleled user experience in the creation and maintenance of shop floor work instructions. This combined solution delivers to the PLM user the ability to leverage variant and effectivity configured product and process data in the easy to use 3DVIA solution for work instruction authoring and viewing. Authored work instructions are saved in the Manufacturing Hub - assigned to the configured data - and can be delivered via the enterprise Manufacturing Execution System assuring that the right set of instructions is delivered to the shop floor at the right time. Note that 3DVIA Composer is purchased separately for this solution.

Key capabilities include:
- Utilizes the product/process configuration managed data stored in the DELMIA – ENOVIA Manufacturing Hub
- Configuration managed data is loaded into 3DVIA Composer for the creation/editing of 3D Work Instructions
- Intuitive, easy-to-use user interface of 3DVIA composer for authoring and viewing of work instructions.

Joint Development with Rockwell Automation:
Joint development partnership between DS DELMIA and Rockwell Automation results in the release of DELMIA Automation – Control Design Exchange; a solution that enables a collaborative environment for mechanical designers and controls engineers using Rockwell Automation’s RSLogix 5000.

Rockwell is the only PLC vendor that provides an object model for their programmable logic controllers. This object model allows DELMIA to synch the control logic model of DELMIA Automation with Rockwell’s physical PLC. As an example of the practical value of this; a controls engineer using DELMIA Automation is able to build a controlled workcell or line using 3D tools. This virtual model will include I/O devices along with the control logic. The Engineer will test and optimize the system early in the design cycle and validate through simulation. When ready, the engineer can then sync the virtual world with Rockwell Automation’s RSLogix5000. This synchronization includes the automatic setup of the I/O objects for the PLC insuring that the physical setup of the PLC is the same as the virtual controls environment used to test, validate, and commission the workcell or line.
This capability brings a solution to the controls engineering domain that is unparalleled in terms of streamlining the controls logic development, optimization, validation, and commissioning; a clear competitive advantage for the users of DELMIA Automation and Rockwell Automation.

In addition to increased efficiencies in capturing and preserving enterprise knowledge, users of this solution are able to minimize time between design and production implementation through bi-directional synchronization between mechanical design and controls engineers. Optimization of ramp-up time to production performance is realized through the reduction of time needed to commission the manufacturing system controls and operations. Likewise, the ability to test various “what-if” scenarios with accurate, real-time helps controls engineers optimize manufacturing operations.

**Key capabilities include:**

- Integration of Rockwell software RSLogix 5000 control programming and configuration software with DELMIA Automation PLM software
- Bi-directional synchronization between mechanical design and controls engineering

DELMIA PLM for Your Industry – Digital Manufacturing solutions built for you

**DELMIA – Process Engineer Enhancements:**

Enhancements to DELMIA – Process Engineer deliver Product Variant Matrix and Multiple Variant Line Balancing capabilities needed by the Consumer Goods and Automotive domains; domains that have a high number of product variants, requiring an agile solution for defining processes and balancing their complex assembly lines.

When products have multiple variants, planners will often write sub-process plans and then include these process when and where they are needed when planning process variants. For example, the process for installing heated seats in a car is only needed in the product variants that call for heated seats. Until now, when that process changed, it was up to the planner to evaluate what product variants would be impacted by this change – a task that could take a significant amount of research. The Variant Matrix allows the engineer to quickly identify which process variants include what processes. Additionally, planners can assign a sub-process to a process variant using this matrix.

Furthermore, enhancements to Line Balancing capabilities of Process Engineer support the balancing of lines that include multiple product variants. This includes process variants that will require a line worker to perform tasks at multiple stations and/or multiple resources within a station.

**Key capabilities include:**

- Support for multiple product and process variants
- Identify what process variants include which sub-processes using the Process Variant Matrix.
- Assign a sub-process to a process variant using the Process Variant Matrix.
- Balance product lines – including workers assigned to multiple stations and/or multiple resources within a station

Manufacturing Hub Enabled Solutions for DELMIA Automation:
With the release of V5R19, DELMIA Automation solutions for controlled resource modeling and controlled system virtual commissioning are extended the PLM portfolio with DELMIA – ENOVIA Manufacturing Hub enabled solutions’ DELMIA Controlled Workcell Builder and DELMIA – Controlled Workcell Validation.

DELMIA - Controlled Workcell Builder combines control logic creation with robotic simulation to provide a powerful tool to integrate automation into the workcell design environment. To begin, Controlled Workcell Builder allows the user to create and maintain libraries of SmartDevices—devices that use controls logic—complete with their control logic. Controlled workcell builder allows the authoring of nominal behaviors and the establishment of I/O connections. Users may also create controlled workcells, controlled work stations, and even complete controlled lines to create and validate the controls logic. The creation of SmartDevice libraries allows reuse of the devices and the controls logic reducing the time required to build virtual equipment.

Key capabilities include:
- Integrates logic based behavior into the workcell design environment
- Define the nominal behavior and establish I/O connections for SmartDevices
- Save these SmartDevices into libraries
- Build an accurate 3D mechanical models of controlled resources, workcells, work stations, and complete lines for the purpose of creating and validating controls logic.
- Provide the cell model to controls engineer for daily use
- Generate dimensional drawings to create the workcell

DELMIA – Controlled Workcell Validation provides the tools to simulate, debug, and validate a complete Programmable Logic Controller (PLC) program against virtual equipment even before any real equipment is built. With time and cost considerations putting pressure on new product introductions, PLC programming can no longer be seen as an isolated, independent function of moving a product forward on the shop floor. Controlled System Simulator allows the controls engineers to validate their work early in the development of the manufacturing process. Controlled System Simulator allows the user to simulate, debug, and validate a PLC program on a virtual PLC or a real PLC.

Key capabilities include:
- Collaboration between product, mechanical, and control designers is supported by the DELMIA – ENOVIA Manufacturing Hub
Simulate, debug, and validate PLM program in the virtual environment with either a Virtual Controller or the a real PLC.

- Simulate default and abnormal controls conditions
- Incorporate physical or virtual control panels to validate Man – Machine interfaces
- Save to library and leverage downstream

Easy, Open and Smart – Adaptable to you

DELMIA – ENOVIA X-BOM for Manufacturing Hub:
New in V5R19 is the DELMIA – ENOVIA X-BOM for Manufacturing Hub delivers a highly collaborative environment with real-time synchronization between ENOVIA V6 and the DELMIA ENOVIA Manufacturing Hub.

This product delivers Real-Time synchronization of ENOVIA V6 PLM of the “as-designed” product bill of material (BOM) to DELMIA – ENOVIA Manufacturing Hub by transferring Product Structure, Versions, Lifecycle States, Attachments, Effectivities, Positions, and Configuration variants. Both CATIA V5 and foreign CAD data models are supported.

DELMIA - ENOVIA X-BOM for Manufacturing Hub allows manufacturing engineers to define Process and Resource plans, using the latest Product information and configuration data and allows design and manufacturing engineers to collaborate via Change Management protocols.

Key capabilities include:

- ENOVIA X-BOM for Manufacturing Hub provides a highly collaborative, real time synchronization between ENOVIA V6 and ENOVIA Manufacturing Hub
- Instantaneous transfer of Engineering BOM from PDM to Manufacturing Hub
- Instantaneous transfer of Manufacturing Planning BOM from Manufacturing Hub to PDM
- Collaboration between design and manufacturing engineers via Change Management protocols

CAA Offering delivers TeamCenter integration with the DELMIA – ENOVIA Manufacturing Hub:
DS DELMIA CAA Partner Geometric, Ltd. delivers the same capability as DELMIA – ENOVIA X-BOM for Manufacturing Hub for integration between TeamCenter and the DELMIA ENOVIA Manufacturing Hub.

Their offering delivers Real-Time synchronization of TeamCenter’s “as-designed” product bill of material (BOM) to DELMIA – ENOVIA Manufacturing Hub by transferring Product Structure, Versions, Lifecycle States, Attachments, Effectivities, Positions, and Configuration variants.

This capability allows manufacturing engineers to define Process and Resource plans, using the latest Product information and configuration data and allows
design and manufacturing engineers to collaborate via Change Management protocols.

**Key capabilities include:**
- ENOVIA X-BOM for Manufacturing Hub provides a highly collaborative, real time synchronization between TeamCenter and ENOVIA Manufacturing Hub
- Instantaneous transfer of Engineering BOM from PDM to Manufacturing Hub
- Instantaneous transfer of Manufacturing Planning BOM from Manufacturing Hub to PDM
- Collaboration between design and manufacturing engineers via Change Management protocols

**Note:** *This is not sold by DELMIA, but is available through Geometric, Ltd.*