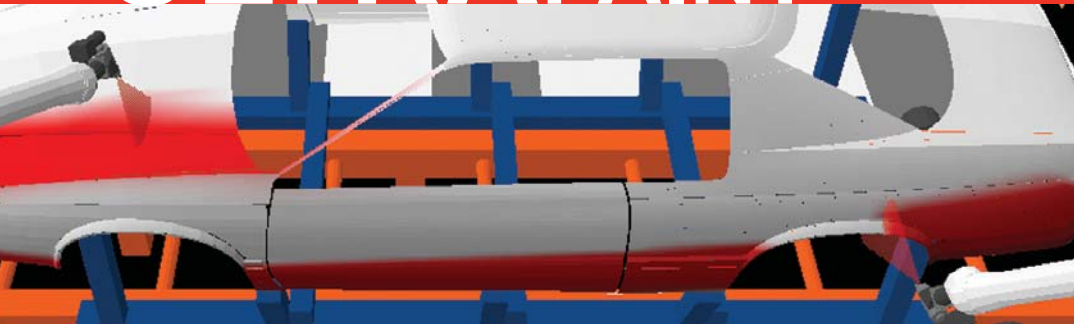




DELMIA

ULTRAPAIN[®]



*The Paint Process
Verification, Simulation
and Robot Offline
Programming Solution*

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DELMIA UltraPaint[®] is a physics based, scalable robotic paint simulation and offline programming solution. Use UltraPaint to quickly verify the paint booth layout and painting process, and then graphically program complex robotic paint systems – from single robot paint systems to multi-robot, rail tracking applications.

The UltraPaint Advantage

UltraPaint's comprehensive built-in robot libraries, automatic collision detection functionality and superior device building capabilities deliver unprecedented reductions in man-hours and process engineering lead time while greatly improving program accuracy.

- **Reduce Man-hours**
- **Eliminate Collisions**
- **Accurately Program Robots Off-line**
- **Minimize Paint Consumption**
- **Save Time and Start-up Costs**
- **Rapidly Develop Models**
- **Extensive Application-Specific Functionality**

Maximize Paint Booth Applications to Minimize Waste

DELMIA UltraPaint offers the most comprehensive array of paint process specific tools available. Stop station, line tracking, and rail tracking applications can be simulated and accurate robot programs can be downloaded to the robot systems.

Simulate and analyze complex rail tracking applications to ensure that paint application is balanced evenly between all robot systems. Use UltraPaint's built-in rail motion programming tools to ensure smooth and consistent rail utilization. Program paint systems offline thus ensuring maximized production efficiencies.

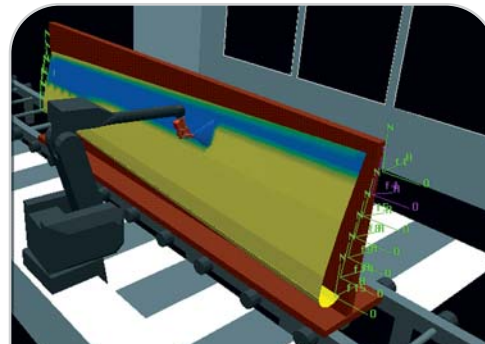
Eliminate Damage and Reduce Risk

UltraPaint's standard collision detection functionality allows the user to verify collision-free trajectories. The user can define groups (collision/near-miss queues) of objects to check for collisions and ensure safe robot trajectories.

Generate Off-line Programs with Confidence

UltraPaint's optional of calibration and off-line programming and post-processing tools allow users to accurately program robotic systems off-line and download them to robots in the paint booth, thus minimizing the impact on production schedules. Calibration tools let users adjust the simulation model to accurately reflect real world

device relationships, while the signature interface enables programmers to easily modify robot devices to gain accurate robot motion. Finally, users download the optimized simulation programs using UltraPaint's post-processors.

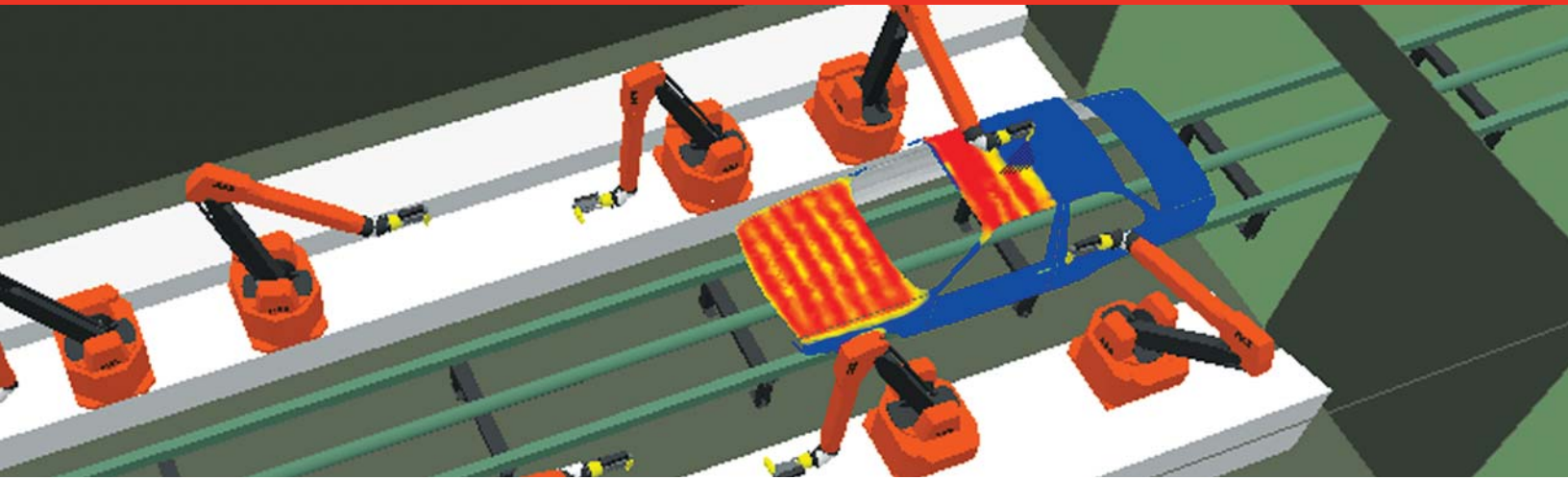


UltraPaint provides the tools to analyze paint deposition parameters, such as atomization air pressure, fan width, fluid delivery, and TCP speed.

Rapidly Develop Workcells

UltraPaint includes the most comprehensive library of Paint robot

models available. Including the latest robots from ABB and FANUC. A library of paint equipment models is also available including paint guns, door openers and work piece fixturing hardware.



Analyze Real Time Performance

Simulation cycle times can be displayed and charted. The user can monitor such paint application parameters as material utilization, fluid flow rates, gun on/off times, and TCP speeds. 3D graphical traces of the robot trajectory can be plotted with interval cycle times. Use the RRS (Realistic Robot Simulation) option to obtain extremely accurate cycle time predictions using native robot controller algorithms. UltraPaint also provides complete paint deposition simulation and analysis tools including multi-color contour mapping of deposited material and film gauging to measure paint thickness. Thus making it easier to identify film build that is outside desired tolerances. Detailed reports can be generated and are available for printer output.

Graphical Programming

Create complex simulation programs using UltraPaint's simple graphical programming interface. Use one interface to program an entire simulation, including multiple robots, fixtures and material handling devices. UltraPaint's teach pendant interface offers an alternative programming interface for those more comfortable using robot teach pendants.

Rail Programming

UltraPaint supports stop station, line tracking and rail tracking applications. UltraPaint accurately simulates real robot motion and automatically adjusts the taught rail values to compensate for the location of the moving part. This allows the programmer to create a program while the part is stationary. After the path is taught the programmer can signal the robot motion planner to "play" that path no matter where the part is or how fast it is moving through the booth. Also, robot rail travel can be automatically optimized to smooth out motion and minimize rail movement.

FANUC Line Tracking (FLT) Support

UltraPaint includes a unique visual interface that completely mimics the FANUC Line Tracking interface for line tracking and rail tracking applications. All key values, distances, and error trapping logic are available in the simulation to allow FANUC robot programmers the ability to off-line program using the same settings and logic that are used on the real robot. In addition, visual boundary planes can be rendered where the FANUC in-bound and out-planes would be on the real robots.

Eliminate Costly Prototyping

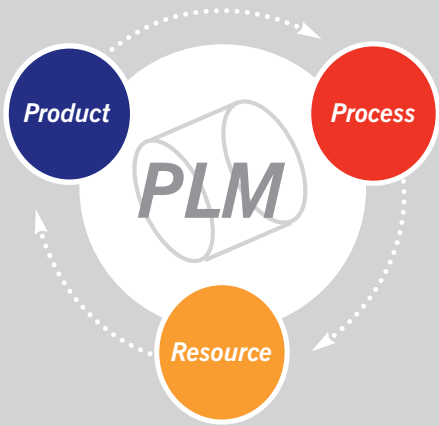


By evaluating the various robot movements and paint parameters in the digital environment, programmers can search for the optimal result without costly prototypes.

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UltraPaint & the Manufacturing Hub

DELMIA's entire solution portfolio work on top a unique data model called the Manufacturing Hub, which allow manufacturers to store, manage and reuse all product, process, and resource information required throughout the product lifecycle.

The Manufacturing Hub is part of a collaborative, PPR data system that supports Dassault Systemes' Product Lifecycle Management solution. This PPR data system ensures the seamless integration between CATIA, ENOVIA, SMARTEAM and DELMIA. CATIA provides the product design solution; DELMIA provides the manufacturing engineering solution; and ENOVIA & SMARTEAM provide the lifecycle applications and decision support tools.

With DELMIA digital manufacturing solutions, companies have the power to capture, manage and share their best practices and ensure everyone has access to the right information, at the right time.

The DELMIA Digital Manufacturing Solution

DELMIA's portfolio of digital manufacturing solutions are categorized in three distinct domain suites, based on how the impact the flow of the manufacturing process. Each domain employs a set of tools that steps through the entire manufacturing process from concept to implementation.



Process Planning

Provides 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.

- Layout Planning
- Time Measurement
- Process & Resource Planning
- Product Evaluation
- Cost Analysis
- Line Balancing



Process Detailing & Validation

Employs the structure and diagrams of the Process Planning solutions into the application specific disciplines of manufacturing. Verify process methodologies with actual product geometry and define processes to a greater level of detail within a 3D environment.

- Manufacturing and Maintenance
- Assembly Sequences
- Factory/Cell Layouts
- Machining Operations
- Workforce Performance and Interactivity
- ShopFloor Instructions



Resource Modeling & Simulation

Provides 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.

- Factory Flow Simulations
- Robotic Workcell Setup and OLP
- NC Machining
- Virtual Reality Scenarios
- Ergonomic Analysis
- Inspection



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