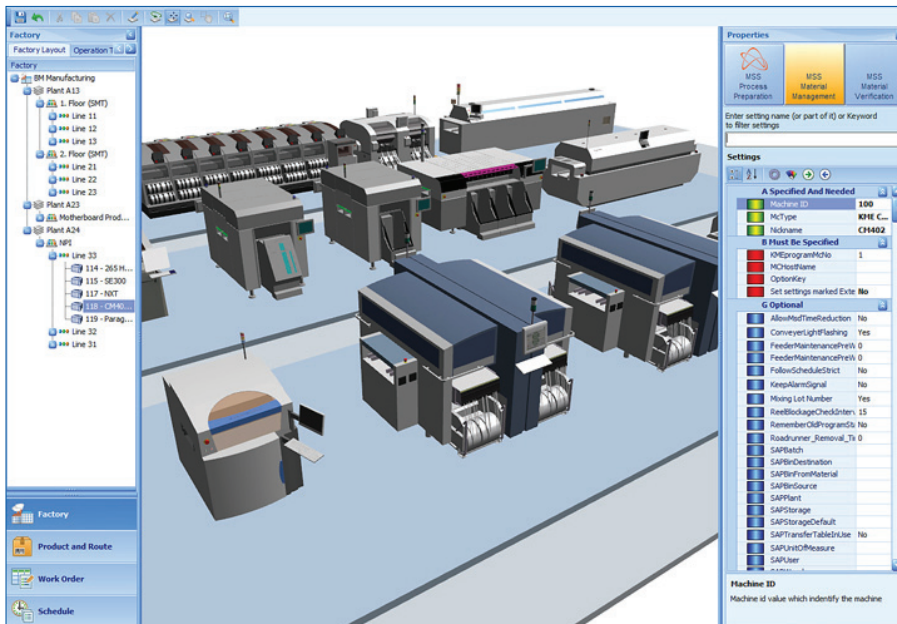


Valor MSS Foundation

Centralized Data Management for the Valor MSS Solution

Manufacturing

D A T A S H E E T



The MSS Foundation is the data management engine for the MSS platform. Foundational data, such as factory layout and equipment details, BOM information, work-order details, and process routing definitions are initiated and edited here. This core module also provides infrastructure for managing the storage of real time information collected from manufacturing operations on the shop floor.

MAJOR BENEFITS:

- Common infrastructure leverages information between applications
- Reduce redundancy and configuration errors with centralized data management
- Work Order management improves on-time delivery
- Centralized compliance of Build Records for all products
- Lower cost of process traceability and device history
- Seamless integration with 3rd party solutions
- Powers the investment in ERP

Overview

The Valor MSS Foundation provides a single view of the truth in resolving many of today's operational challenges in electronics manufacturing. MSS Foundation is the central environment for Master Data Management within the Valor MSS suite. Centralization of data prevents redundancy and reduces configuration errors. This module is the single point for creating the detailed factory configuration and the master schedule with full visualization of the work orders released to operators in the factory. The common infrastructure creates information leverage between the Valor MSS applications, and the API interface provides seamless integration to 3rd party solutions. Valor MSS Foundation is designed to power the investment in ERP by updating ERP data for more accurate inventory management, power the marketability of products and services by maintaining a detailed electronics build record for all units produced, and to improve competitiveness by increasing the on time delivery performance of the factory. Valor MSS Foundation is organized into two primary functions- Master Data Management and Scheduling.

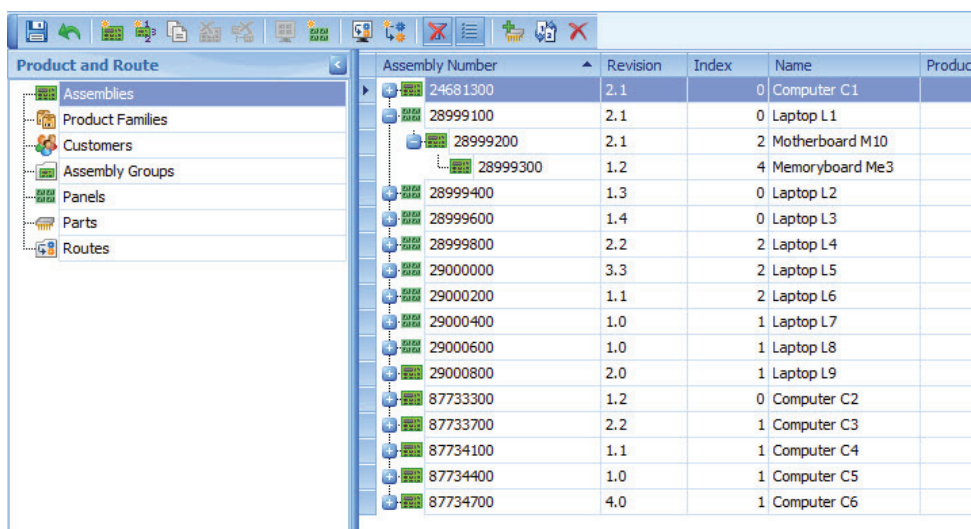
Master Data Management

The Valor MSS Foundation is a master data management system of factory, product and material attributes in relation to quality and operations data. The data manager is used for the factory definition/configuration, product definitions and Routing and Work Orders

KEY FEATURES

Factory Configuration

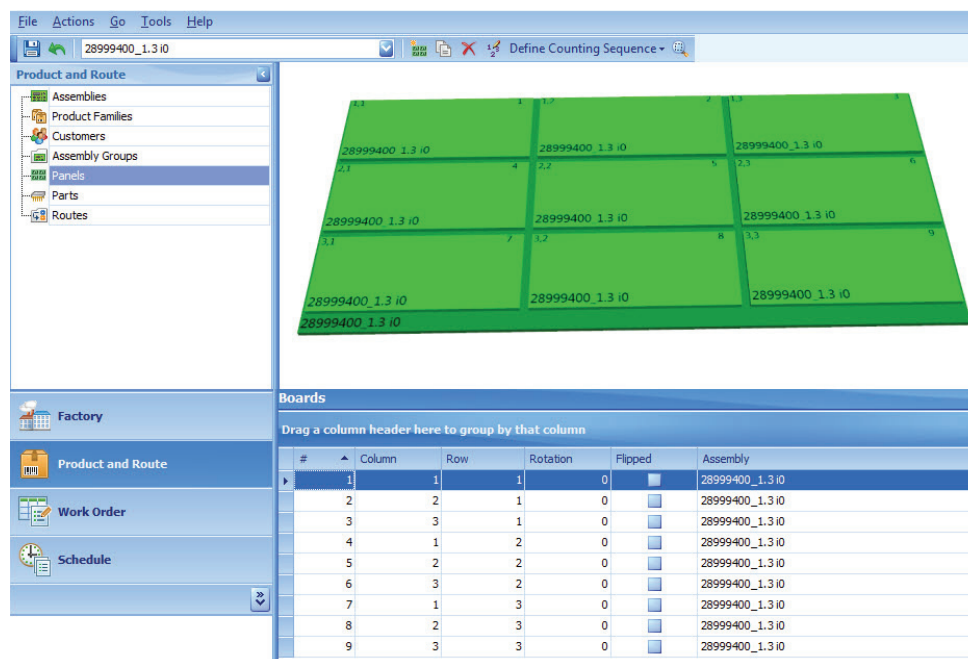
The configuration of the factory is managed in layers, i.e. Plant, Floor, Line and Equipment. The Plant can have many shop floors, each Floor can have many lines, each Line can have many machines, and each machine is configured as a unique asset or Equipment item. The plant/floor/line configurations are managed in a 3D environment for clear and accurate visualization of the entire factory. The software includes an extensive library of 3D equipment models, many are exact replicas of the actual the most popular machines used in today's



Product and Route	Assembly Number	Revision	Index	Name	Product
Assemblies	24681300	2.1	0	Computer C1	
Product Families	28999100	2.1	0	Laptop L1	
Customers	28999200	2.1	2	Motherboard M10	
Assembly Groups	28999300	1.2	4	Memoryboard Me3	
Panels	28999400	1.3	0	Laptop L2	
Parts	28999600	1.4	0	Laptop L3	
Routes	28999800	2.2	2	Laptop L4	
	29000000	3.3	2	Laptop L5	
	29000200	1.1	2	Laptop L6	
	29000400	1.0	1	Laptop L7	
	29000600	1.0	1	Laptop L8	
	29000800	2.0	1	Laptop L9	
	87733300	1.2	0	Computer C2	
	87733700	2.2	1	Computer C3	
	87734100	1.1	1	Computer C4	
	87734400	1.0	1	Computer C5	
	87734700	4.0	1	Computer C6	

Master Data Management centralized the product structure and essential product attributes so that there are no redundant data actions and many errors are therefore eliminated. Product configuration includes Assemblies, Product Families, Customers, Assembly Groups, Panels, Parts and Routes.

factories. In cases where a model is not available there are generic "equipment" models that can be used for visualization purposes. The resource settings and configuration are an integral part of the whole Valor MSS suite for shop floor applications to control and manage the manufacturing process.



#	Column	Row	Rotation	Flipped	Assembly
1	1	1	0	<input type="checkbox"/>	28999400_1.3 i0
2	2	1	0	<input type="checkbox"/>	28999400_1.3 i0
3	3	1	0	<input type="checkbox"/>	28999400_1.3 i0
4	1	2	0	<input type="checkbox"/>	28999400_1.3 i0
5	2	2	0	<input type="checkbox"/>	28999400_1.3 i0
6	3	2	0	<input type="checkbox"/>	28999400_1.3 i0
7	1	3	0	<input type="checkbox"/>	28999400_1.3 i0
8	2	3	0	<input type="checkbox"/>	28999400_1.3 i0
9	3	3	0	<input type="checkbox"/>	28999400_1.3 i0

Many SMT factories work on complex panels rather than single PCB. Valor MSS Foundation allows the user to configure the product panel in the way that best suites production requirements.

Hierarchical Product Structure

The Valor MSS Foundation creates and maintain and the hierarchical product structure (normally imported from ERP/PLM). This product structure defines the parent child hierarchy of a multilevel Bill of Materials (BOM) and is used to perform the following tasks:

- Assign Process related properties required to control the manufacturing process
- Assign default route with Scheduling and Enforced Routing definitions
- Define panel structure per Assembly
- Link Assemblies to Product Families, Assembly Groups and Customers

Each part number is managed within a Centralized Parts Library where the essential Parts Attributes are defined and subsequently used by the Valor MSS shop floor solutions to control processes.

Process Routing

The Valor MSS Foundation maintains process routings for scheduling and enforced routing logic. Here the routes are created and assigned to valid and default resources per each operation in the Route.

Work Orders

The Valor MSS Foundation creates, maintains and releases Work Orders (normally imported from ERP) with assigned resources. Here we can also create Rush Orders, use default Route assigned to the Assembly, or modify the Route according to the needs of the Work Order and define exact Resources to use for the Work Order.

Scheduling

Valor MSS Foundation stores the released Master Schedule used by the shop floor applications and Engineering solutions. The scheduling capabilities include interfacing to 3rd party solutions to get the rough schedule from e.g. ERP, managing the orders with connection to routes, assemblies and machine programs (recipes), as well as delivering the released schedule to operators and MSS shop floor clients. The MSS scheduling solution supports all discrete operations in the factory environment, including material preparation, SMT, test, manual & system assembly, packing etc.

KEY FEATURES

Import from ERP

The raw schedule is imported from ERP. The software also supports loading Hierarchical BOM structure and Route definitions from ERP as well.

Product and Schedule Definitions

Product related scheduling definitions are maintained as follows. Each Assembly is related to scheduling properties. The defined Route is linked to the Assembly with the ability to limit the allowed resources to be used for a given assembly. The Recipes, such as SMT programs created in the Valor MSS Process Preparation module and assigned and required by the resources to produce the Assembly. Also specific Material Attributes required for a given Assembly are defined.

Work Order Management

The Work Order tool assigns exact resources to be used for each Work Order Operation. When needed, Rush Orders can be created, or the Work Order Routes can be modified. When everything is ready, the Work Order is released for production.

Schedule Management

Visual schedule management allows the user to see the sequence and status of each job by work order operations, per resource. The Schedule can be managed by changing the priority of jobs for a given resource, move jobs to other resources, or changing the status on jobs (i.e. start, pause, stop).

Schedule	Order Number	Operation	Status	Part Number	Revision	Assembly	Quantity	Planned Start
Sequencing	Resource: 1. Floor (SMT) / Line 12 / 1009 - FCM2							
	97	67 - Schedule	Planned	24681300	2.1	Computer C1	0	11-10-2011 07:52:47
	Resource: Motherboard Production / Line 1							
	1111	64 - SMT Top	Planned	24681300	2.1	Computer C1	7000	01-01-1980 00:00:00
	97	64 - SMT Top	Planned	24681300	2.1	Computer C1	0	11-10-2011 07:52:47
	Resource: Motherboard Production / Line 2							
	97	65 - SMT Bottom	Planned	24681300	2.1	Computer C1	0	11-10-2011 07:52:47
	Resource: Motherboard Production / Line 3							
	2222	64 - SMT Top	Planned	87733300	1.2	Computer C2	5000	01-01-1980 00:00:00
	2222	65 - SMT Bottom	Planned	87733300	1.2	Computer C2	5000	01-01-1980 00:00:00

Valor MSS Foundation provides production scheduling with tight integration to the other MSS shop floor applications.

Shop Floor Integration

The Shop Floor Operator tool is used to visualize the schedule for a given resource. Integration to shop floor control applications is used to automatically change job and job status based on the released schedule, and to pick material from stores based on the released schedule, and to stop material picking when Job is near completion.

Key Administration Functions

Material Registration and Administration

The MSS Foundation provides a set of applications that are used when managing the details of the master data associated with materials that will be used in the operation. This includes solutions for the registration of all materials into the system and the printing of barcode labels when required, as well as solutions for managing the storage of materials in stock areas, and dry stock / ovens. Additionally the solution provides the capabilities to administer the detailed rules associated with the management and picking of materials for those customers taking advantage of the MSS Material Management module.

For the latest product information, call us or visit: www.mentor.com/valor

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Corporate Headquarters
Mentor Graphics Corporation
8005 SW Boeckman Road
Wilsonville, OR 97070-7777
Phone: 503.685.7000
Fax: 503.685.1204

Sales and Product Information
Phone: 800.547.3000
sales_info@mentor.com

Silicon Valley
Mentor Graphics Corporation
46871 Bayside Parkway
Fremont, CA 94538 USA
Phone: 510.354.7400
Fax: 510.354.7467

North American Support Center
Phone: 800.547.4303

Europe
Mentor Graphics
Deutschland GmbH
Arnulfstrasse 201
80634 Munich
Germany
Phone: +49.89.57096.0
Fax: +49.89.57096.400

Pacific Rim
Mentor Graphics (Taiwan)
Room 1001, 10F
International Trade Building
No. 333, Section 1, Keelung Road
Taipei, Taiwan, ROC
Phone: 886.2.87252000
Fax: 886.2.27576027

Japan
Mentor Graphics Japan Co., Ltd.
Gotenyama Garden
7-35, Kita-Shinagawa 4-chome
Shinagawa-Ku, Tokyo 140-0001
Japan
Phone: +81.3.5488.3033
Fax: +81.3.5488.3004



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