

Module 4

Section A: Creating and Validating the Master Schedule

Term
Batch

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Bill of labor

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Capacity planning using overall factors (CPOF)

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Common parts bill of material

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Feature

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Lot

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Master production schedule (MPS)

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Master schedule

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A structured listing of all labor requirements for the fabrication, assembly, and testing of a parent item. See: bill of resources, capacity bill procedure, routing.

1) A quantity scheduled to be produced or in production. 2) For discrete products, the batch is planned to be the standard batch quantity, but during production, the standard batch quantity may be broken into smaller lots. 3) In nondiscrete products, the batch is a quantity that is planned to be produced in a given time period based on a formula or recipe that often is developed to produce a given number of end items. 4) A type of manufacturing process used to produce items with similar designs. It also may cover a wide range of order volumes. Typically, items ordered are of a repeat nature, and production may be for a specific customer order or for stock replenishment.

A type of planning bill that groups common components for a product or family of products into one bill of material, structured to a pseudoparent item number. Syn.: common parts bill.

A rough-cut capacity planning technique. The master schedule items and quantities are multiplied by the total time required to build each item to provide the total number of hours to produce the schedule. Historical work center percentages are then applied to the total number of hours to provide an estimate of the hours per work center to support the master schedule. This technique eliminates the need for engineered time standards. Syn.: overall factors. See: bill of resources, capacity planning, resource profile, rough-cut capacity planning.

A quantity produced together and sharing the same production costs and specifications. See: batch.

A distinctive characteristic of a good or service. The characteristic is provided by an option, accessory, or attachment. For example, in ordering a new car, the customer must specify an engine type and size (option), but need not necessarily select an air conditioner (attachment). See: accessory, attachment, option.

A format that includes time periods (dates), the forecast, customer orders, projected available balance, available-to-promise, and the master production schedule. It takes into account the forecast; the production plan; and other important considerations such as backlog, availability of material, availability of capacity, and management policies and goals. See: master production schedule.

A line on the master schedule grid that reflects the anticipated build schedule for those items assigned to the master scheduler. The master scheduler maintains this schedule, and in turn, it becomes a set of planning numbers that drives material requirements planning. It represents what the company plans to produce, expressed in specific configurations, quantities, and dates. [This] is not a sales item forecast that represents a statement of demand. It must take into account the forecast, the production plan, and other important considerations such as backlog, availability of material, availability of capacity, and management policies and goals. See: master schedule.

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Master schedule item

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Master scheduler

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Master scheduling

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Materials management

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Modular bill of material

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Multilevel master schedule

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Option overplanning

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Overstated master production schedule

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Often the job title of the person charged with the responsibility of managing, establishing, reviewing, and maintaining a master schedule for select items. Ideally, the person should have substantial product, plant, process, and market knowledge because the consequences of this individual's actions often have a great impact on customer service, material, and capacity planning. See: master production schedule.

A part number selected to be planned by the master scheduler. [It] is deemed critical in its impact on lower-level components or resources such as skilled labor, key machines, or dollars. Therefore, the master scheduler, not the computer, maintains the plan for these items. [This] may be an end item, a component, a pseudo number, or a planning bill of material.

The grouping of management functions supporting the complete cycle of material flow, from the purchase and internal control of production materials to the planning and control of work in process to the warehousing, shipping, and distribution of the finished product.

The process where the master schedule is generated and reviewed and adjustments are made to the master production schedule to ensure consistency with the production plan. The master production schedule (the line on the grid) is the primary input to the material requirements plan. The sum of the master production schedules for the items within the product family must equal the production plan for that family.

A master scheduling technique that allows any level in an end item's bill of material to be master scheduled. To accomplish this, MPS items must receive requirements from independent and dependent demand sources. See: two-level master schedule.

A type of planning bill that is arranged in product modules or options. It is often used in companies where the product has many optional features (e.g., assemble-to-order companies such as automobile manufacturers). See: pseudo bill of material.

A schedule that includes either past due quantities or quantities that are greater than the ability to produce, given current capacity and material availability. [This] should be made feasible before MRP is run.

Typically, scheduling extra quantities of a master schedule option greater than the expected sales for that option to protect against unanticipated demand. This schedule quantity may be planned only in the period where new customer orders are currently being accepted, typically just after the demand time fence. This technique is usually used on the second level of a two-level master scheduling approach to create a situation where more of the individual options than of the overall family are available. The historical average of demand for an item is quantified in a planning bill of [material. This concept] is accomplished by increasing this percentage to allow for demands greater than forecast. See: demand time fence, hedge, planning bill of material.

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Pegging

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Planning bill of material

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Priority

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Product configuration catalog

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Product load profile

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Product structure

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Production forecast

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Projected available balance (PAB)

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An artificial grouping of items or events in bill-of-material format used to facilitate master scheduling and material planning. It may include the historical average of demand expressed as a percentage of total demand for all options within a feature or for a specific end item within a product [family...] Syn.: planning bill. See: hedge, option overplanning, production forecast, pseudo bill of material.

In MRP and MPS, the ability to identify for a given item the sources of its gross requirements and/or allocations. [This] can be thought of as active where-used information. See: requirements traceability.

A listing of all upper-level configurations contained in an end-item product family. Its application is most useful when there are multiple end-item configurations in the same product family. Used to provide a transition linkage between the end-item level and a two-level master production schedule. Also provides a correlation between the various units of upper level product definition.

In a general sense, the relative importance of jobs (i.e., the sequence in which jobs should be worked on). It is a separate concept from capacity.

The sequence of operations that components follow during their manufacture into a product. A typical product structure shows raw material converted into fabricated components, components put together to make subassemblies, subassemblies going into assemblies, and so forth.

A listing of the required capacity and key resources needed to manufacture one unit of a selected item or family. The resource requirements are further defined by a lead-time offset to predict the impact of the product on the load of the key resources by specific time period. [This] can be used for rough-cut capacity planning to calculate the approximate capacity requirements of the master production schedule. See: bill of resources, resource profile, rough-cut capacity planning.

An inventory balance projected into the future. It is the running sum of on-hand inventory minus requirements plus scheduled receipts and planned orders. Syn.: projected available inventory.

A projected level of customer demand for a feature (option, accessory, etc.) of a make-to-order or an assemble-to-order product. Used in two-level master scheduling, it is calculated by netting customer backlog against an overall family or product line master production schedule and then factoring this product's available-to-promise by the option percentage in a planning bill of material. See: assemble-to-order, planning bill of material, two-level master schedule.

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Resource profile

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Rough-cut capacity planning (RCCP)

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Scheduling

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Super bill of material

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Two-level master schedule

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Work center

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The process of converting the master production schedule into requirements for key resources often including labor, machinery, warehouse space, suppliers' capabilities, and, in some cases, money. Comparison to available or demonstrated capacity is usually done for each key resource. This comparison assists the master scheduler in establishing a feasible master production schedule. Three approaches to performing [this] are the bill of labor (resources, capacity) approach, the capacity planning using overall factors approach, and the resource profile approach. See: bill of resources, capacity planning, capacity planning using overall factors, product load profile, resource profile.

The standard hours of load placed on a resource by time period. Production lead-time data is taken into account to provide time-phased projections of the capacity requirements for individual production facilities. See: bill of resources, capacity planning using overall factors, product load profile, rough-cut capacity planning.

A type of planning bill, located at the top level in the structure, that ties together various modular bills (and possibly a common parts bill) to define an entire product or product family. The quantity per relationship of [this bill] to its modules represents the forecasted percentage of demand of each module. The master-scheduled quantities of [this bill] explode to create requirements for the modules that also are master scheduled. See: pseudo bill of material.

The act of creating a schedule, such as a shipping schedule, master production schedule, maintenance schedule, or supplier schedule.

A specific production area, consisting of one or more people and/or machines with similar capabilities, that can be considered as one unit for purposes of capacity requirements planning and detailed scheduling. Syn.: load center.

A master-scheduling approach in which a planning bill of material is used to master schedule an end product or family, along with selected key features (options and accessories). See: hedge, multilevel master schedule, production forecast.