**IBS Manufacturing**

*IBS Manufacturing* software is specifically developed for the supply chain environment, where flow-oriented and demand-driven manufacturing meets customer demands in a dynamic market. Make the right decisions at every stage while you reduce lead-times, increase delivery reliability and improve customer service.

IBS Manufacturing is a comprehensive solution for companies that must meet exacting market demands with efficiency, accuracy and reliable operational control. The solution is designed to adapt to your manufacturing and business processes. IBS Manufacturing is a core component of IBS Enterprise supply chain software, which includes sales order management, distribution and warehousing.

**Production scheduling**

IBS Manufacturing provides a variety of planning methods to fit a variety of manufacturing requirements, with everything from pull-planning concepts for repetitive product manufacturing to MRPII planning. All these techniques can be used side by side as required.

**Pull-planning**

For repetitive manufacturing, two different methods can be used:

- **Shortage analysis** focuses on products and components subject to or risking shortage, within the defined planning horizon.

- **Priority analysis** is based on the coverage time (in days) that an actual product has within the planning horizon, taking into account the demand, order, stock situation and forecast. The design of the priority value (cover time) is user-defined, making it possible to create customer-defined planning methods.

**MRPII**

IBS Manufacturing also supports a traditional forward material and capacity planning method, which is sometimes more appropriate to use.

MRP order proposals are all prioritized from end-product down to the lowest component level. The highest prioritized demand (sales order) is then handled as the most important proposal, and the forecast is handled as a lower priority. This method focuses on fulfilling demand in the right order.

Because MRP also creates rescheduling proposals, it is possible to set a filter for the MRP to avoid unnecessary times on rescheduling proposals that differ by, for example, two days.

**Rough-cut disposal check on material and capacity at sales order entry**

When availability for material and/or capacity is checked, it is always checked against normal stock. If no such stock/capacity exists within the item’s planning time, the availability check is then performed on the product’s BOM and/or BOR, and ‘best delivery date’ is calculated.

**Manufacturing alternative products (co-products)**

Manufacturers are sometimes not sure what an end-product will be. A producer of porcelain, for example, might have an end result of either a first-class or a second-class product, or even a combination of the two. To resolve this issue, IBS Enterprise lets you produce alternative products or co-products as a result of a manufacturing order.

Alternative products are defined in the manufacturing structure file as possible items to be produced, as a specified percentage or quantity that can be produced as an alternative product in relation to the intended, real product.
The manufacturing reception function is used to define whether the product is the planned end-product or an alternative that should be received to stock.

Tools and fixtures
For improved planning production, IBS Manufacturing includes functionality that allocates tools in time for their use in manufacturing order operations. This tools and fixtures functionality also includes the ability to calibrate a tool when it has been used for a specified number of orders, produced pieces or hours.

Manufacturing orders
IBS Manufacturing provides several ways to create manufacturing orders, offering flexibility in set-up and operational performance.

Order entry
Orders can be entered manually, copied from existing orders, initiated by and connected to a customer order, or released from an order proposal. Manual entry lets you copy information from the bill of material and operations structure, and that information can then be complemented or changed.

Order proposals
Order proposals are generated at the requirements planning session, if MRP is used, and can be easily changed, cancelled and/or released into a production order.

When pull-planning is used, the order proposal will correspond to the material shortage and priority analyses. Such analyses show, in priority sequence (most critical first), actual material shortages and workloads for resources for a customer order and/or forecast-controlled products.

Lead-time calculation/availability check
The system provides two different lead-times for produced items, one for planning purposes and one for sales order availability check. This makes it possible to secure the sales availability even if the production lead-time is changing over time.

Operational planning
You have the option to use either forward or backward planning when booking resources. Material can be connected to operations, thus minimizing WIP cost for material used later in the production process.

In order to optimize machine resources and to minimize waste, it is possible to group manufacturing orders both on header and on operation level. Grouping of manufacturing orders will also reduce the set-up cost (time), thus extending the available machine capacity.

Order documents
The order document can be tailored by manufacturing order type and consists of:
- Operation list
- Pick list
- Operation cards
- Material cards
- Assembly report
- Material list / operation
- Product labels.

Some of the order documents can be complemented with bar codes to allow for easier reporting.

Batch number
If tracking and tracing products in certain batches is critical, it is possible – at the point of manufacturing order creation or product reception – to generate batch numbers automatically according to number series or using masks.

Reserving batches and booking material
For batch-controlled products, it might be necessary to reserve a certain batch before a pick list is printed. You can reserve batches for the included material in manufacturing order maintenance for the BOM.

Kitting list generation and re-creation
Once a kitting list has been printed, the allocation remains until the order is closed. The material is reallocated when the kitting list is refreshed, in case components were unavailable at original allocation time.

Manufacturing order pallet handling
IBS Manufacturing lets you create pallets
either at the shop floor (document printout and report on pallet), or at manufacturing order reception.

When IBS Warehouse Management is installed, it is possible to create and print pallet labels. You can then use the pallet identity when reporting products to stock, instead of reporting on manufacturing order. You can also create pallets when products are received to stock, through the normal product reception function.

Subcontract operations

IBS Manufacturing supports external production processes within internal processes. An operation can be defined as a subcontract, and a purchase order is connected to it from the subcontract operations. When the purchase order is received, the manufacturing order operation will also be reported.

Internal order replenishment

The solution easily handles internal order replenishment. Instead of letting the manufacturing warehouse control the distribution warehouse, the distribution warehouse can create purchase orders as for a normal external supplier. From these purchase orders, sales orders can be created in the manufacturing warehouse.

Manufacturing order reporting

IBS Manufacturing includes a variety of reporting options, such as PC, workshop terminals or barcode readers. Shop floor reporting includes information such as used, produced and scrapped quantities, reason codes, person-time used, machine and other cost elements and personal identity.

The solution includes facilities for automatically ‘un-booking’ any marked materials and/or operations, whereby pre-calculated values will be used.

Immediately after any reporting, WIP can be analyzed online. Analyses include material, time used and other costs, giving you a simple method of quickly and easily discovering major deviations between pre-calculated and actual values, and allowing you to take appropriate action.

Backflushing

The system supports backflushing of material with a number of setup options. Backflushing material at operation reporting means that materials that are connected to a specific operation will be issued from stock during the report of operations. Backflushing at product reception means that material will be issued from stock at the same time that the manufactured products are reported to stock. If the backflushing routine isn’t accepted (the final reporting step), the update will be rolled back.

Operations reporting

Operations reporting can be set up to calculate the run labor time and machine time based on reported quantity (approved and scrapped). The run labor time and machine time can be calculated based either on approved and scrapped quantity, or no calculation can be chosen. How the calculation should be made is defined on a work center level.

Operations reporting also supports milestone reporting, which means that previously completed operations in a process will automatically be updated.

Manufacturing order material allocations

The system facilitates status handling on materials. It allows you to open/close manufacturing order material reservations for not fully issued components.

Quality control reporting

With IBS Manufacturing, you can obtain quality control reports for products either in the manufacturing process, at manufacturing reception or for items that are already available in stock.

The quality reporting set-up is based on the conformity group that is connected to one or many products. It consists of a number of criteria that are used to define the values to be used for reporting different processes, such as manufacturing operation reporting. The quality control results are stored in a history file, which can be queried for analysis. The reporting process can also create non-conformity certificates for quantity reported, for example outside a criteria interval.
Closed manufacturing order analysis
IBS Manufacturing includes functionality for analyzing completed manufacturing orders, which gives you the ability to find orders with high deviation. You can reopen the order and do reporting adjustments, with the possibility to adjust reported values.

Integration to IBS Planner View
Manufacturing planning and detail planning are accessible via the IBS Planner View module, and have a number of updating functions that include:
- Refresh pull-planning proposal
- Change proposal
- Create order (manufacturing and/or purchase order)
- Change manufacturing order quantity, start/completion date, order priority/sequence
- Open a closed manufacturing order
- Change manufacturing order operation priority, sequence or work centre
- Print manufacturing order operation cards
- Reschedule operation
- Reset operation
- Manufacturing operation reporting
- Manufacturing order reception
- Change work center capacity
- Change proposal.

Manufacturing order block order handling
You can use this function as a type of ‘contract’ or ‘repetitive manufacturing flow’. It gives you an easy way to create a daily, weekly or monthly manufacturing order with some default values, and also lets you make a simple reception reporting with backflushing for both material and operations.

Preventive maintenance and integration to IBS Service
IBS Service can be used as a fully integrated solution for internal maintenance, and preventive service on machines (work centers) and tools.

The system allows you to connect a service object to a work center or tool. When planning preventive service for a machine (work center), you can reduce the capacity for this work center. When using the calibration functionality for a tool, the system automatically creates a service order when the calibration point is reached.

Activity-oriented product costing
IBS Manufacturing gives efficient cost control and follow-up, while providing a wide variety of options to meet demands posed by different manufacturing environments.

Cost price simulation functions compute variations of material, machines, labor and overheads. Alternative manufacturing routes or material structures can be used for the same product, while still achieving accurate product cost calculation and follow-up.

For each element of the cost calculation, it is possible to use either manually entered values, values calculated by individual algorithms or values from cost tables. Cost simulations can also be performed online, enabling ‘what-if’ costing.

The solution handles entry and calculations for extremely low-cost products. Cost calculations can be based on the standard quantity for product costing on produced items, which gives better accuracy.

The product costing value saved includes the total bill of material, bill of routing and the overview presentation. This lets you follow how the calculation has been constructed, for current and previous product costings and simulations.

Users can update BOM/BOR (quantities and times) from actual manufacturing, based on manufacturing order statistics (average values). The system comes with a log file for all BOM/BOR changes.