



World Class
Advanced Planning & Scheduling
(APS)
Locally Delivered



PLANNING AHEAD WITH PREACTOR & SAGE

If you can answer “Yes” to any of the following then we can help:

- ◆ Our production plan is in a spreadsheet and it won't cope with the complexity of our processes or the increasing size of the company.
- ◆ We'd like to save time by automatically creating Works Orders.
- ◆ Customer delivery performance is suffering because we can't accurately predict when sales orders will be ready.
- ◆ Our purchasing department know how much material we need, but don't really know WHEN it is needed. So we tend to have either too much stock or sometimes shortages.
- ◆ Our MRP keeps telling us to “Bring PO Forward” but we know we can't. So really we need to move the production jobs back to later dates.
- ◆ It takes hours to re-plan when a change is forced upon us by any of:
 - > Machines breaking down
 - > Suppliers late with deliveries
 - > Customers changing quantities or dates

Preactor is a planning tool in which we can model your processes and capacity and then work out the best sequence in which to run the jobs. Enabling you to **predict material shortages and late deliveries** to customers whilst there is still time to do something about it. Then run “What-If” scenarios to test the effects of adding more resources or changing shift patterns..

Read on for more details on the potential benefits of using Preactor and information on how we integrate it with Sage Line 500 and ERP 1000.

"What would happen if someone took away Preactor?"



For a start we would have to go back to holding high buffer stocks because purchasing would not have an accurate plan to work to.

Previously we just had a spreadsheet list of jobs that needed doing, now we have a colour coded Gantt chart view that is so easy to use when reacting to changes in the production environment or delays from suppliers.

Preactor ensures that we have a valid sequence of running the related works orders, with "Work-To" lists for each resource.

Shop-floor has visibility of the plan and they trust it because they know from experience that it works.

Our Production Director knows that he can make decisions based on the capacity graphs because nothing is planned in the past, which is vital because we frequently use temporary production staff.

And visibility for UPL means we can give visibility to our customers of the planned delivery dates."

Steve Snelson - Planning & Warehouse Manager
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Preactor is the world leader in production planning and scheduling software used by a wide range of businesses. These are a mixture of small, medium and large companies located in more than 60 countries.

BENEFITS

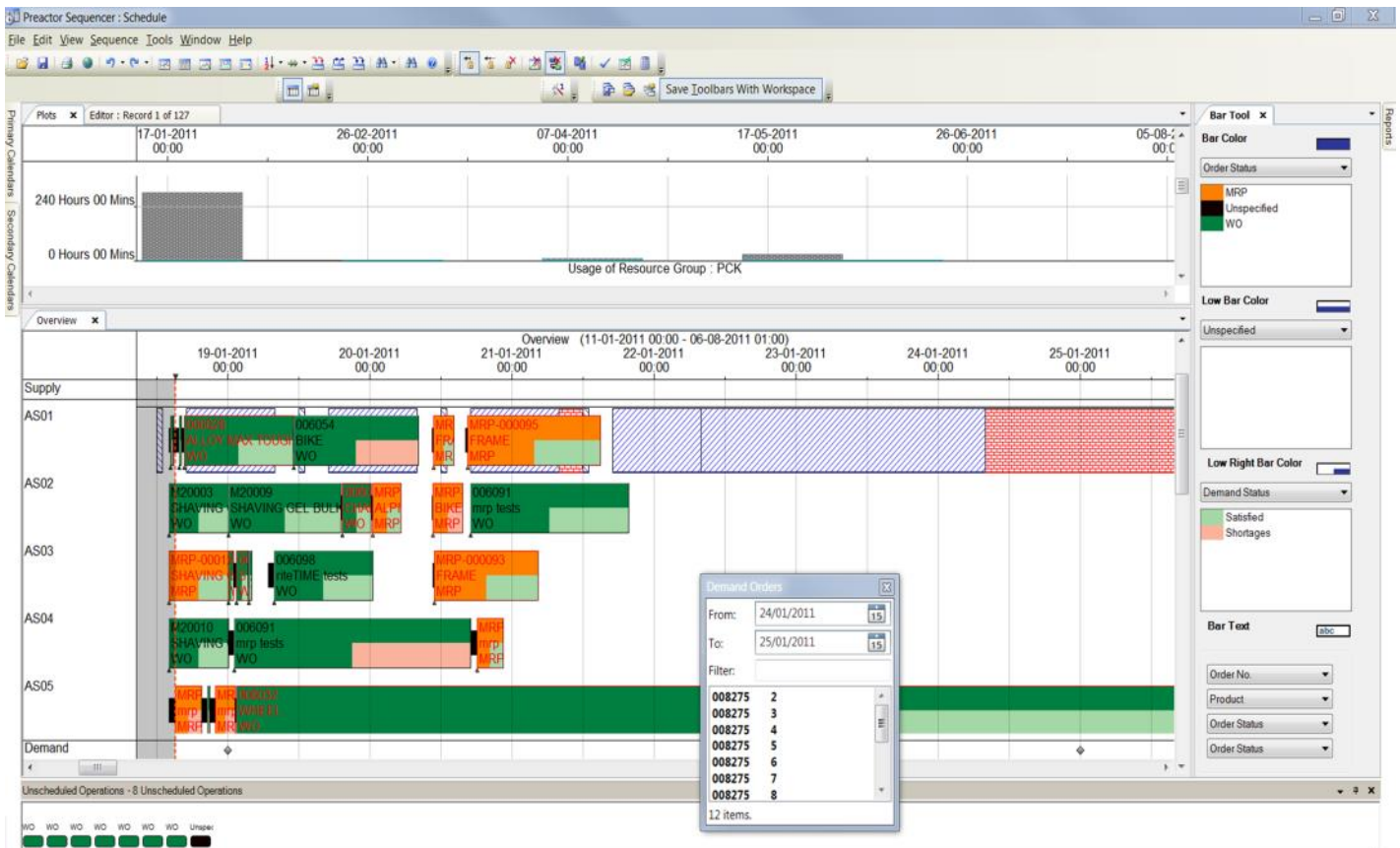
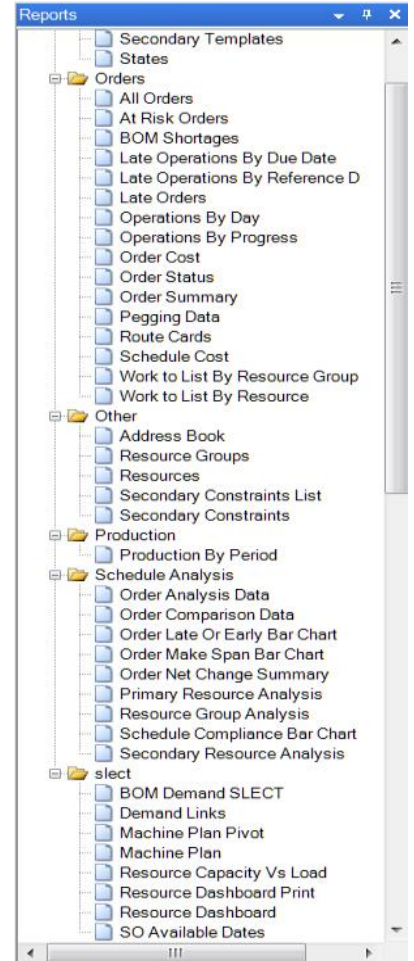
Preactor has a proven return on investment.

- ◆ **Improvement in productivity:** get more from what you already have. Eg. reducing the number of set-ups required.
- ◆ **Reduction in raw materials inventory:** synchronize the purchasing MRP with an achievable schedule.
- ◆ **Reduction in make-span time:** reduce WIP that slows down production flow.
- ◆ **Improvement in customer service:** increase on-time deliveries with better promises and early warning of potential lateness.
- ◆ **Planning agility:** react quickly to changes in materials supply, customer demand or the availability of resources.

Over 100 case studies available at www.preactor.com/proof.aspx

WHERE DOES IT FIT IN?

Preactor needs you to tell it the products, quantities and target dates of your intended production. Which you do using Works Orders (WO) or MRP/MPS Recommendations for the raising of new WO. These recommendations can then be selectively released to allow the automatic creation of WO. New from 2013 is the ability to quickly create multiple “PRO” orders that can later be converted to WO in Sage. So Preactor is complimentary to the Sage MRP system rather than a replacement for it. However it can be used as a alternative to the purchasing MRP if you are happy to work with manual entry of new purchase orders, based on easy to use shortage reports from Preactor (which will be based on the plan dates).



Gantt Chart view of the production schedule

HOW DOES IT WORK?

Typically you will first create a model of the production process by creating **Resources** and adding a calendar of **Shift Patterns** to represent the available capacity.

- Primary resources are machines.
- Secondary resources/constraints are people, teams, warehouse space, tooling, power consumption etc.

Primary resources belong to one or more **Resource Group**. The routing holds the required group using the Work Centre field (later Preactor will select the earliest available resource from the group during automatic scheduling).

Then Preactor will import **Works Orders** and/or **MRP Recommendations** for the raising of new **WO**, to represent the loading on resources.

Sales Orders and **Forecasts** can be imported to represent top level demand.

If the plan depends on the future supply of **Purchase Orders** and on **Current Stock** then you can import those too.

Static Material Control (SMC) can then run pegging rules to link together the producing and consuming orders to ensure a valid plan.

This includes a facility to deal with **multi-level BOMs** that represent both demand and supply of the relevant parts.

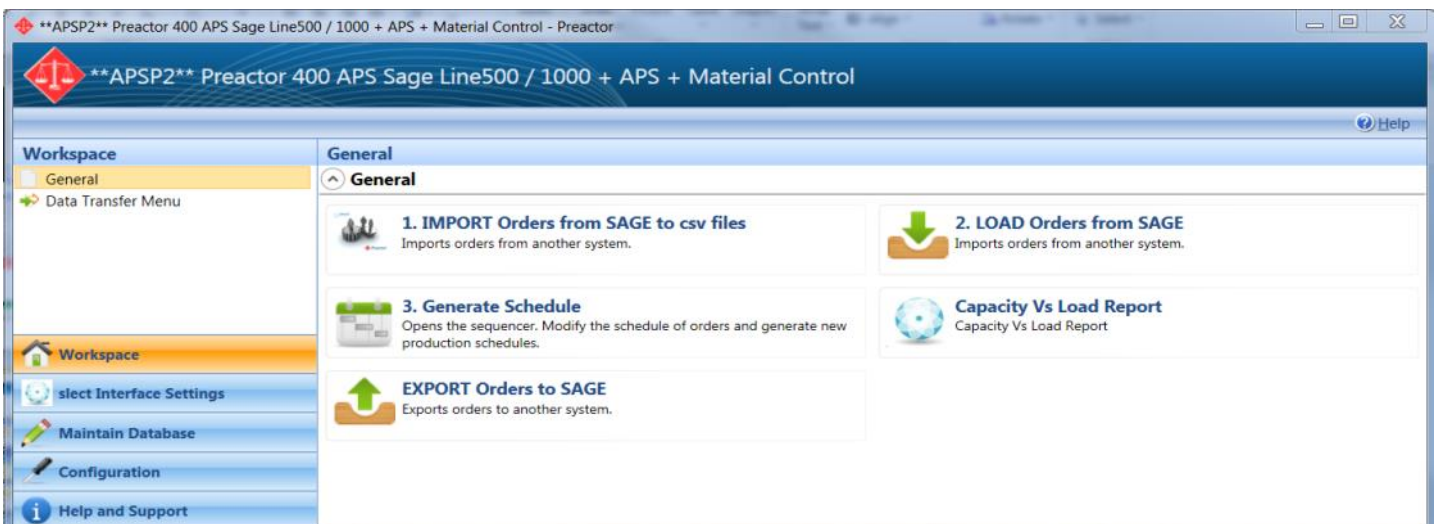
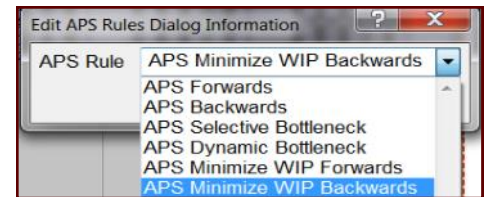
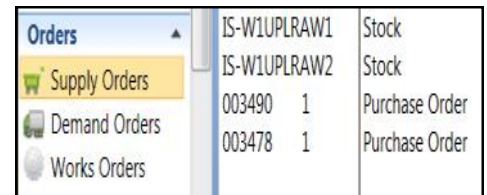
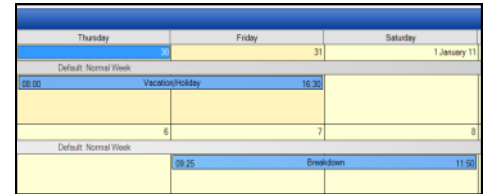
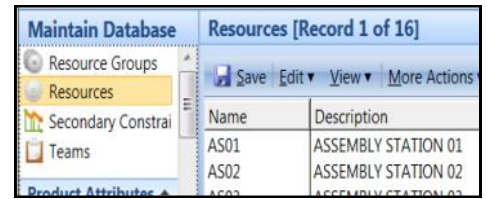
Then complex rules or **manual drag and drop** methods allow the planner to create the best sequence in which to run the jobs. And important **jobs can be locked** to a fixed machine and time.

Resulting in a **valid, achievable production plan** where you have tried to reduce setup times, reduce WIP or increase the number of on-time jobs.

Customer Services can now see when sales orders are to be expected, highlighting any that will be late unless action is taken. Or for new sales orders **the expected date can be used to make an educated promise date**, giving you the best chance of being on time!

MRP recommendations planned on or before a date horizon can be **automatically converted to Works Orders**, saving time over the manual creation methods.

And lastly you will want to run **MRP in Purchasing**, so that the supply of materials is driven from the new plan, rather than from fixed manufacturing lead times on the products.



MATERIAL EXPLORER

These images show Preactor Material Explorer displaying related (pegged) jobs and highlighting stock shortages. This is available from Preactor V11 onwards, but only with Preactor 400 or 500 systems.

WO 006032 makes a batch of 280 wheels on Jan 27th. Look closely and you'll see that this is also a Trial Kitting screen – the job could start now because AXLE, RIM and SPOKES are all supplied from **IS** initial stock. The made wheels then go off to be used at various times in many other WO. In particular 4 are used in WO 006069 which starts on Feb 27th and makes R2 BIKE2.

WO 006069 itself has many components. Brakes are supplied from a PO 003485, frames from a MRP recommendation to raise a new WO, pedals from initial stock. But there is a problem with handle bars which have no stock or PO cover, so these appear on the shortage reports for purchasing to action, the date required being driven by the plan.

Finally the 2x BIKE2 are linked to a Sales Order 008294, which is required to ship on May 12th.

Available from V11 onwards, with P400 APS systems

The interface displays a network of jobs and materials. Job 006032 (Op 1 and Op 9999) produces BBWHEEL, which is consumed by jobs 006070, 006093, MRP-000010, and 006069. Job 006069 (Op 8888) produces R2BIKE2, which is consumed by Sales Order 008294. Job 006069 also consumes BBFRAME, BBBRAKE, BBFRAME, BBPEDAL, BBWHEEL, R2SADDLE, RDGEARSHIM, and BBH-BARS. BBFRAME is supplied by MRP-000093, IS-BBPEDAL, 006032, IS-R2SADDLE, and IS-RDGEARSHIM. BBBRAKE is supplied by PO 003485. BBWHEEL is supplied by IS-BBAXLE, IS-BBRIM, and IS-BBSPOKES.

Shortage Report (117):

Order#	Material	Shortage
006075	BBBRAKE	10
006075	BBH-BARS	5
006075	BBPEDAL	10
006085	W1MRPRAW1	30
P20010	W1UPLPACK1	30000

Unused Materials (165):

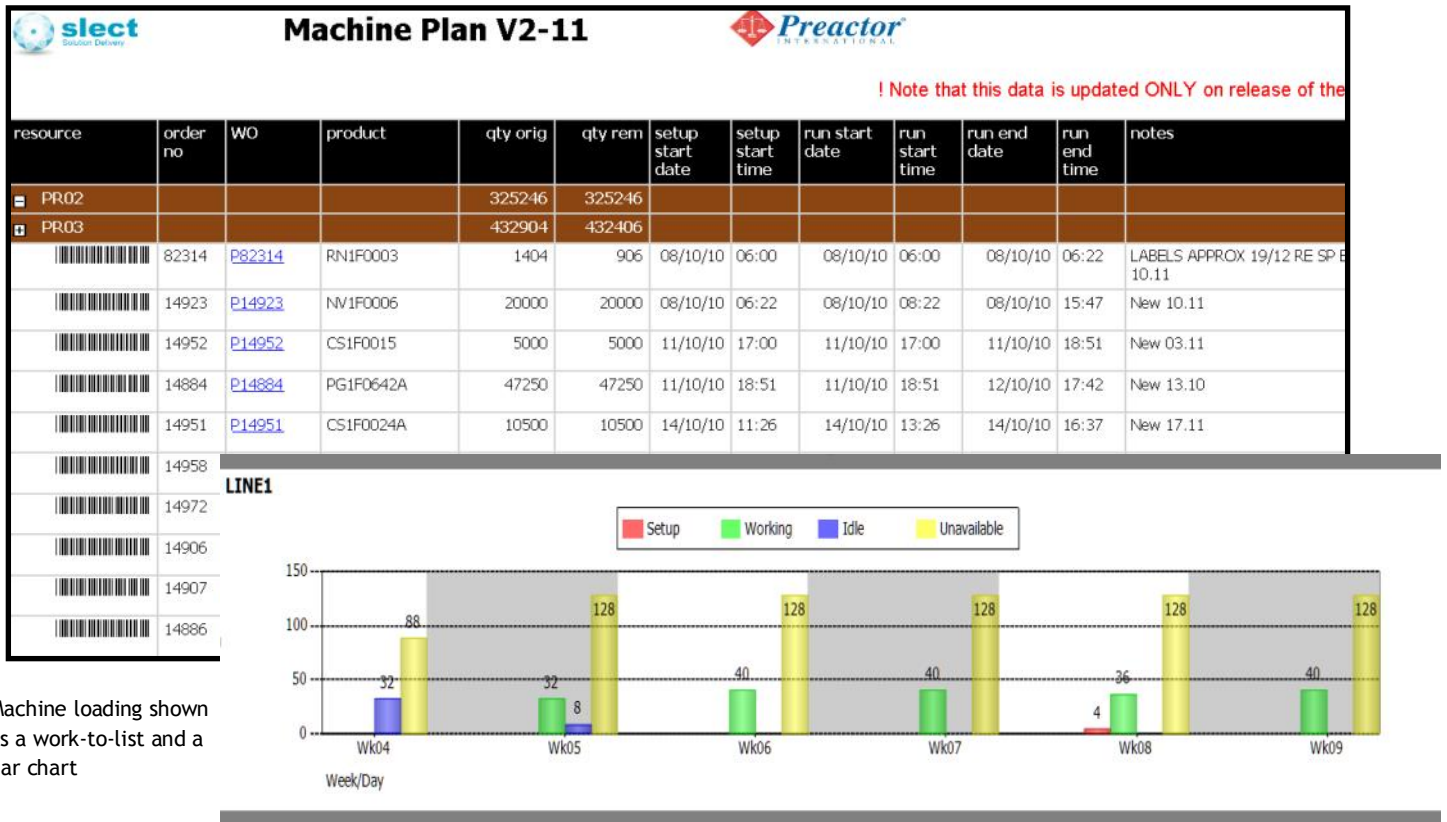
Order#	Material	Unusec
006070	W1BIKE2	1
006075	W1BIKE-STANC	5
006085	W1MRPBULK	30
006078	W1BIKE	5
P20010	W1UPLFIN	30000

Stock History Chart for BBFRAME:

Date	Stock Level
01/02 00:00	0
01/02 00:00	300
01/02 00:00	250
01/02 00:00	200
01/02 00:00	150
01/02 00:00	100
01/02 00:00	50
01/02 00:00	0
01/02 00:00	-50
01/02 00:00	-100
01/02 00:00	-150
01/02 00:00	-200
01/02 00:00	-250
01/02 00:00	-300
01/02 00:00	-350
01/02 00:00	-400

WHAT ARE THE MAIN OUTPUTS?

As well as the Gantt view of the schedule and the Material Explorer, Preactor presents the output of the plan in many other ways, including the following:



Machine loading shown as a work-to-list and a bar chart

MATERIAL SHORTAGES

Tue 18/01/11 19:31

Product / Yr+Month	Unplanned	2011 01	2011 02	2011 03	2011 04	2011 05	2011 06	2011 07
BBAXLE		3284	337	17	17		66	29
BBBIKE		192			81			
BBBRAKE		124		20	174	600	40	
BBFRAME	R2BIKE	20						
	BBBIKE					34		
		20				34		
BBGREASE								73
BBH-BARS		61	2	10	92	321	20	
BBLIGHT_SET			339					
BBPAINT								
BBPEDAL								
BBPUMP								
BBSADDLE								
BBTUBING/SUP								
BBWHEEL								
R1BIKE2								
R2ALPINE-L-12								
R2BIKE2								

Material Shortages per Period

Sales Order Available Dates V1-06

Tue 18/01/11 03:19

Grouped by Order No. and Demand Date

Demand Order No	Demand Date	Dem and Order Line	Demand Part No	Demand Qty	Supply Type	Links Part No (IS=Initial Stock)	Links Qty	Links Order No	Links Available Date	Late?	Demand Desc
008276	Wed 01/06/11 12:00								Tue 07/06/11 11:55	Late	FORWARD Brooker's Status:SO
	Wed 01/06/11 12:00	2	BBBIKE2	20	WO	BBBIKE2	8	MRP-000013	Thu 10/03/11 02:07	OnTime	FORWARD Brooker's Status:SO consumed = 0 Cust:DE002 BIKE
	Wed 01/06/11 12:00	2	BBBIKE2	20	WO	BBBIKE2	12	MRP-000012	Tue 07/06/11 11:55	Late	FORWARD Brooker's Status:SO consumed = 0 Cust:DE002 BIKE
008276	Sat 04/06/11 12:00								Sun 05/06/11 12:00	Short/Unplanned	FORWARD Brooker's Status:SO
008277	Wed 01/06/11 12:00								Tue 18/01/11 12:00	OnTime	FORWARD ORDER Brecon O
008278	Mon 04/07/11 12:00								Tue 18/01/11 12:00	OnTime	EURO ALICANTE ADVENTUR
008279	Sat 29/01/11 12:00								Tue 18/01/11 12:00	OnTime	Tour De Skegness Status:SO

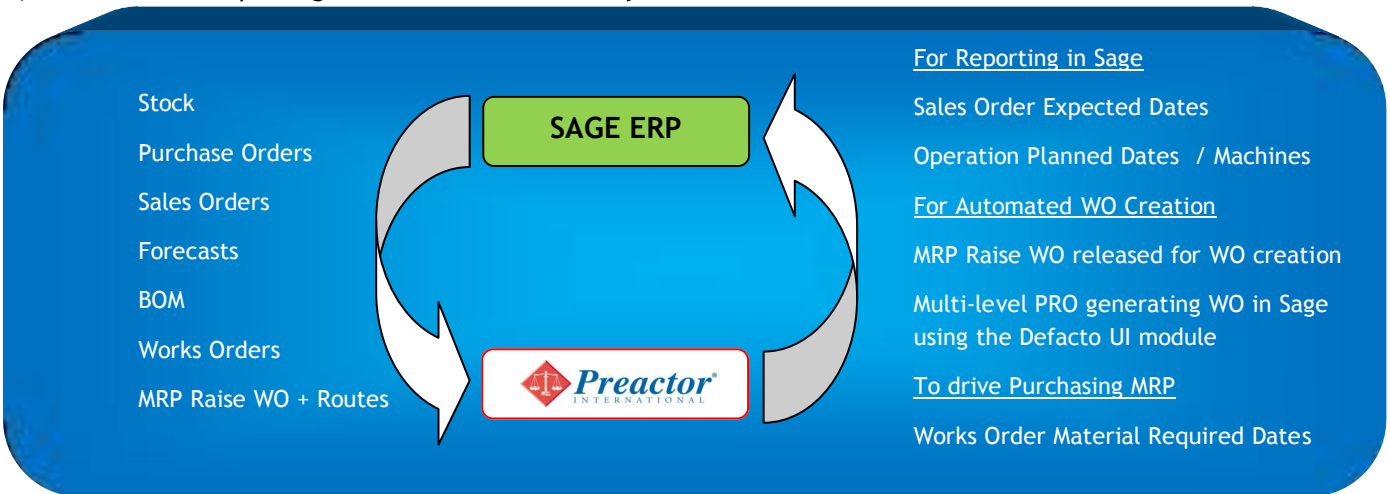
Sales Order no. 008276 line 2 for 20 units on June 1st is expected to be 6 days late. The first 8 will be available early on March 10th, but the last 12 won't be ready until June 7th.

INTEGRATION WITH SAGE

On its own the Preactor software is a modeling tool. The tool needs to understand the characteristics of your factory.

So Preactor needs 2 things to be able to function:

- 1) A **configuration** for Preactor:
 - Data table description of fields and their Preactor properties.
 - Definition of the menu system and the initial settings (similar to Sage system keys).
- 2) An **interface** for passing data from / to the ERP system:



sl-ect has designed a “configuration” that is ready to accept the available fields from Sage and which utilises all the main features of Preactor. Including the new Material Explorer functionality.

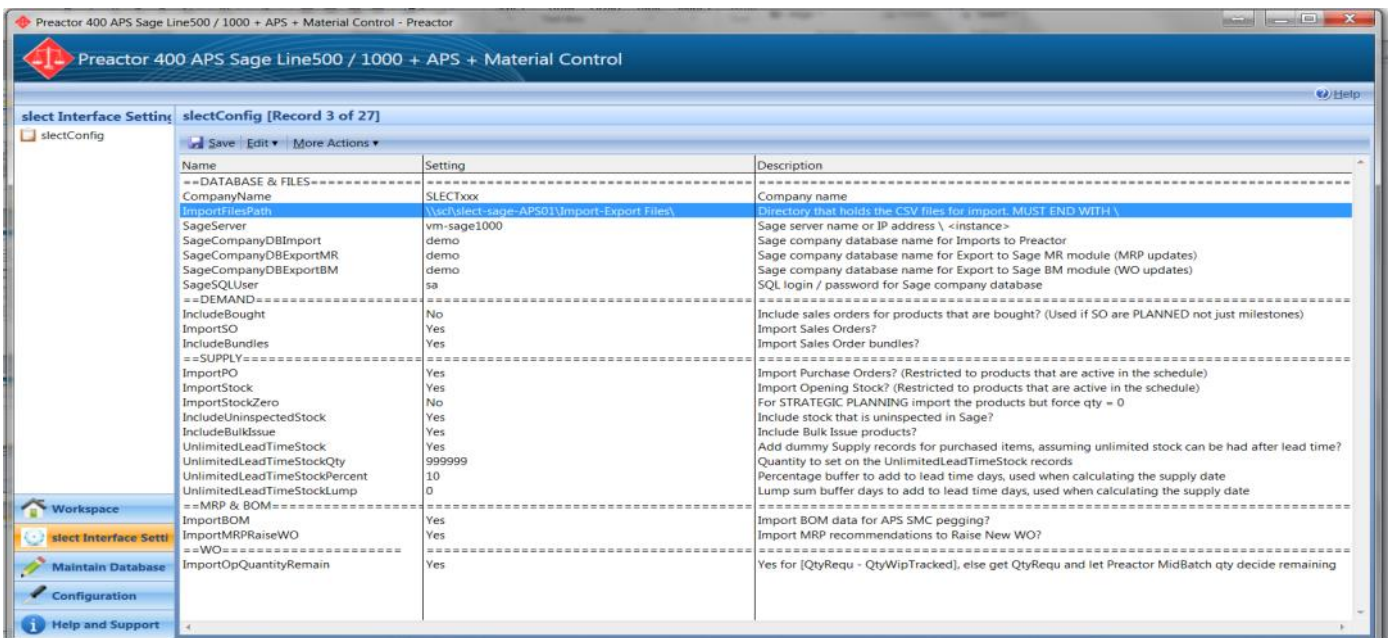
To support this we’ve re-designed our “interface” to deliver a fast, flexible way of moving data between Sage and Preactor.

This is currently available for all versions of Sage Line 500 and Sage ERP 1000.

Also some updates take place in the reverse direction, after the plan is published. Sage is updated from Preactor to set various dates on WO.

And Preactor “PRO” orders and selected MRP recommendations are released for automated WO creation.

Note: The PRO system and any data imported for use in Preactor Material Control are only used by Preactor 400 & 500 systems.



Interface configuration options

INTEGRATION WITH SAGE

PRO System (available for use with Preactor 400 or 500)

New from 2013 is the ability to create “Preactor Orders” (PRO) to represent production that you want to make. Previously you had to create Works Orders in Sage and import to Preactor to get a schedule for a new order. The idea behind PRO is that when you have new customer demand we’ll let you quickly create PRO orders directly in Preactor, fetching the BoM and Routing on the fly from Sage.

So that you can speed up the time it takes to get back to the customer with an accurate promise date.

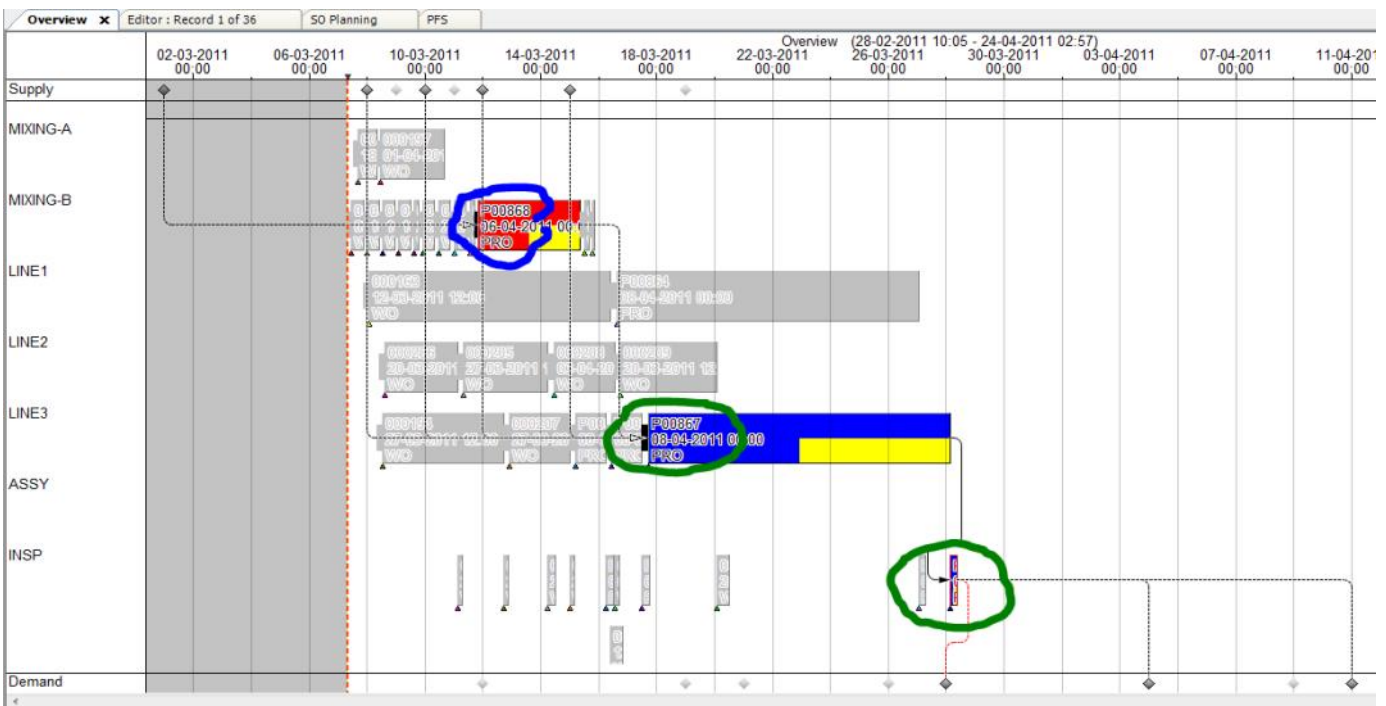
A great new feature is that PRO will look down **all levels of BoM** for the product entered. When it finds “Make” items with shortages it will generate PRO at this level, continuing down until all BoM items have been dealt with. “Buy” items that can’t be satisfied from stock or due in purchase orders will generate “PSUG” purchase suggestions on today + supplier lead time, in order to dynamically calculate the earliest start date for the PRO orders.

Then you can convert the PRO to WO as part of an export back to Sage (requires the Defacto UI module). Or just discard them if you were dealing with a speculative enquiry. The choice is yours.

There are 3 starting points for PRO:

1) Single Product: Enter a product, quantity and date

This generated 2 PRO orders, one for mixing bulk liquid and one for the filling / inspection operations:



This technique can be re-used to create one or many PRO order networks when planning a Sales Order or Product.....

INTEGRATION WITH SAGE - PRO System

2) SO Planning: Take a new Quotation or Sales Order and plan it by generating PRO for each product line

Choose the order and automatically create PRO, schedule them and calculate the latest end date:

The screenshot shows the SAGE SO Planning interface. On the left is a Gantt chart showing supply and planning stages. The main window displays a list of orders with columns for Order, SI, Name, Entered, Required, Cust Order, Planned?, Analysis1, and Analysis2. Order 111111 for Albany Products PLC is highlighted. A detailed view on the right shows the order summary and a table of lines with columns for Lin, W, Product, Qty, Required, Schedule Date, PRO Number, Top Level, and Description. A green arrow points from the highlighted order in the list to the detailed view.

Then publish the summary by email:

Cc: Subject: Planned Order: 111111 Available on: 16/03/2011 111111 Cust Order: Name: Albany Products PLC

Order	Line	WH	Product	Qty	Required	Schedule Date	PRO Number	Top Level	Bundle	Description
111111	1	P2	HANDCREAM200-ASDA	200	11/03/2011 00:00:00	15/03/2011	P00869			200ml Hand Cream ASDA Packaging
111111	2	P2	HANDCREAM200-ASDA	300	18/03/2011 00:00:00	15/03/2011	P00870			200ml Hand Cream ASDA Packaging
111111	3	P2	HANDCREAM200-ASDA	400	25/03/2011 00:00:00	16/03/2011	P00871			200ml Hand Cream ASDA Packaging

3) Product Planning: Add new production quantities to a “Predict Future Stock” style screen

Look at the current “Balance” column, then type your required production into the “New Qty” field. Check the “New Balance” and click to create PRO:

The screenshot shows the SAGE Product Planning interface for product P2 HANDCREAM200-ASDA. It displays a table with columns for Type, Order No., Qty, Due Date, Schedule Date, Balance, New Qty, and New Bal. The current balance is -4800. A green circle highlights the 'Action All PRO' button. A green arrow points from the 'New Qty' column to the 'New Bal' column, indicating the calculation of the new balance after adding production.

FEATURES

The combination of this configuration, interface and the new Preactor V11 provides the following features:

Preactor

- Preactor V11 look and feel and functionality.
- Preactor data in Microsoft SQL Server for easy reporting.
- Package of standard reports from Preactor.
- Schedules are automatically saved, with an audit report to show the changes in the plan over time for any works order.

Material Explorer & Static Material Control (SMC)

- Quickly and easily see the links between orders.
- Exception reports of future SO lateness.
- Aid transport planning by predicting when SO will be available for picking.
- Expedite Sales Orders by tracing back to the supplying production orders.
- Highlight direct shortages on any order.
- And upstream shortages on a linked order.
- Uses firm PO dates to force realistic start dates for manufacturing.
- WO are checked for a valid sequence between jobs.



Flexible

- Preactor system is un-compiled and therefore, with care, can be changed by the user.
- Up to 30 extra data fields can be sent to Preactor, by configuring a SQL View in the Sage database.
- Sage Routings module is preferred but not mandatory because, as a standard feature, process routes can be picked up from any other source. For instance a SQL table or a list in a spreadsheet.
- Option to run in “Strategic Planning” mode to load a 12 month sales forecast but ignoring current stock, PO and WO. Outputs show the resource capacities needed, and the material shortage reports are effectively a 12 month supplier forecast.

Performance

- Preactor now has the ability to hold the Stock, BOM, PO and SO “outside” of the main schedule data store so that the scheduling speed is not affected by these items.
- The interface does NOT import the entire set of Stock, BOM and PO records from Sage. Items are ignored if they are not part of the current demand-supply chain. This greatly improves the speed of fetching the data from Sage and of loading it into Preactor
- This also creates a list of the “active” products, and this is stored in a table for use in looking at obsolete parts in Sage.

Technical Stuff

- The interface supports Material Explorer functionality.
- Phantom BOMs are supported.
- “Held” works orders are imported.
- Jobs without routes are placed on a “NO OPS” resource.
- MRP recommendations can be imported at both “Held” and “Approved” status.
- No restriction on having commas in description fields.
- **FILESDD system keys are supported.
- POSHIPDATE and OPSHIPDATE are supported.
- PO date/quantity can be imported from a schedule.
- WO line (bmwodm) dates can be updated with the planned start dates so that purchasing MRP is driven by a valid schedule instead of fixed manufacturing lead times.
- Automated WO creation from Preactor planned MRP recos.
- Only MRP WO recommendations to “Raise New” are imported, so ideally you will configure MRP filters so that these are the only suggestions made.

Requirements

- Preactor will run on any version of Microsoft SQL Server 2005 and above, including the free Express versions.
- The interface requires SQL Integration Services (SSIS) to be installed, ideally on the Sage server. Therefore the SQL edition must be Standard or Enterprise.
- Preactor reports are developed in SQL Reporting Services (SSRS). SSRS ReportServer installation is not mandatory, but we recommend it as a way of distributing the reports without the need to take up a Preactor license.

TIME SHEET AUTOMATION

We can also provide riteTIME software.

This is complementary to Preactor in that it is used to collect WIP Tracking information directly from the factory floor – replacing hand written time / job sheets to capture time and quantity for:

- ◆ People (direct and indirect labour time)
- ◆ Works Orders
- ◆ Machine activity

This data can be automatically imported to Preactor to show progress against the plan.

For more information go to:

www.sl-ect.co.uk/riteTIME.aspx



- Automated Timesheet Entry
- Efficiency Reporting
- Payroll Reconciliation
- Preactor Mid-Batch Updates

PREACTOR PARTNER

sl-ect is a Preactor **Solution Provider** and can provide:

- ◆ System design
- ◆ Implementation
- ◆ Training
- ◆ Support

For testimonials and more information go to:



Preactor

SL-ECT Ltd for
Universal Products

LOCATION
Fylde, UK

PRODUCTS
Manufacture gels, creams etc...

ERP SYSTEM
SAGE 500

PROJECT DESCRIPTION
Mixing, storage and filling MTO operation, 6 different mixing areas, a number of which can only be used for dedicated or MHRA validated products depending on product size, and mixing type. Depending on the nature of product these feed into a variety of storage areas before being moved to the correct filling line.

BENEFITS
Increased agility and flexibility; able to react to late arriving orders or customer changes.

QUOTATION
"Thanks to Preactor, UPL can now also respond instantly to customer requests for information. With the old system, if a customer rang on Wednesday wanting information on an order, we'd have to wait until the following Monday to update the plan. Now we can give the information immediately."

Nominee for Best Case Study of the Year 2009/10

All trade marks acknowledged

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