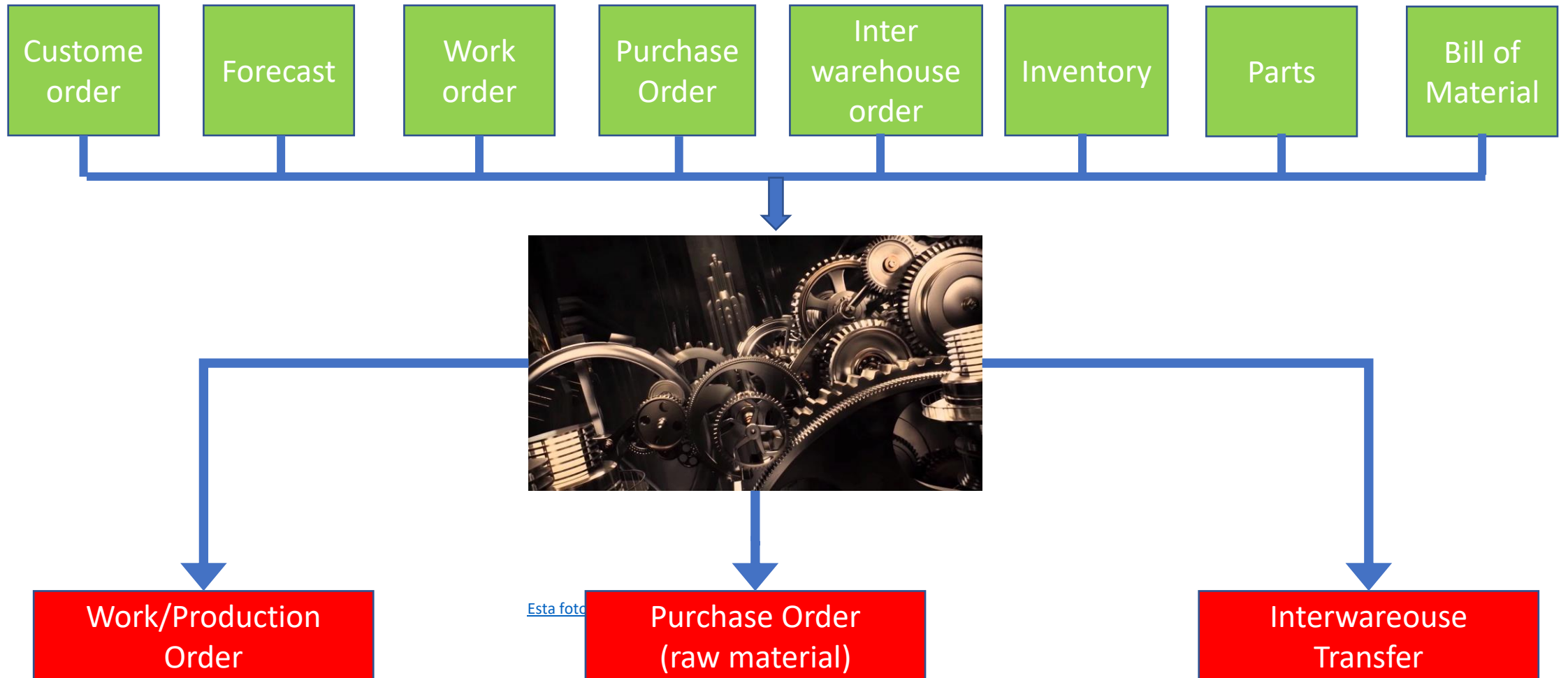


# Algoritmos basados en software de planeación

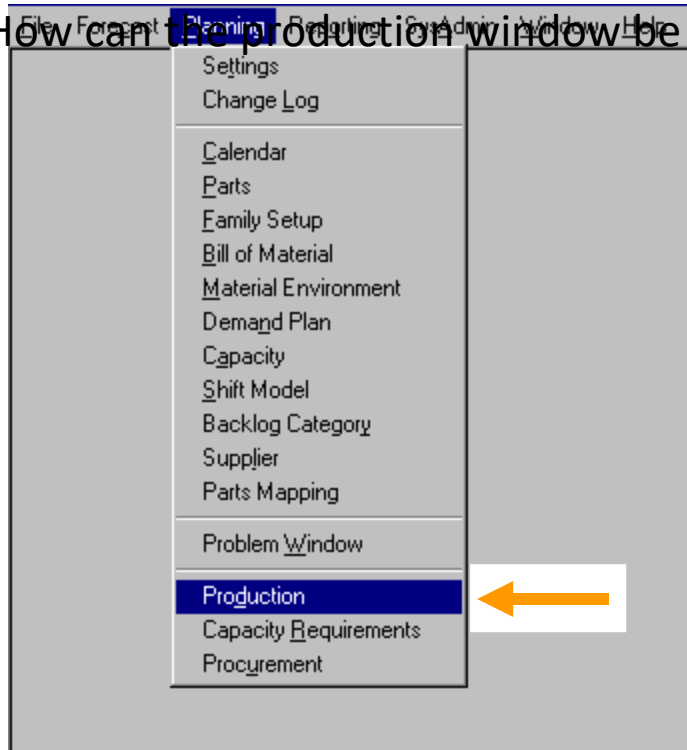
Uso académico exclusivamente

# System

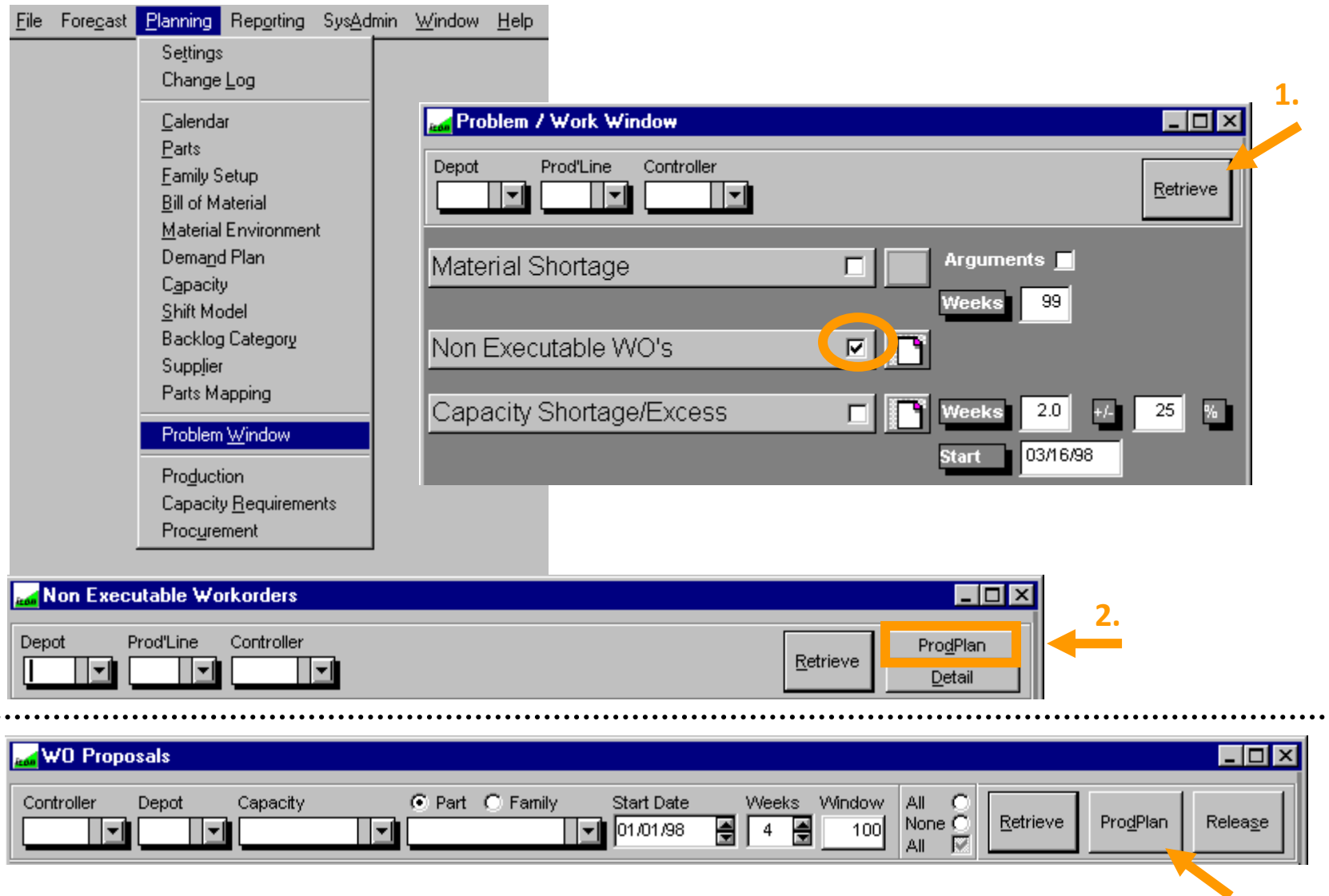


The following chapter explains the Tec VEP production screen with its different window areas. The emphasis hereby is not only to understand the information on the screen, but also to see cross references to other windows and parameters, which influence the production information. Key parameters for the production planning output will be identified and explained.

How can the production window be reached in Tec VEP?



How can the **production window** be reached in Tec VEP ?



The production window can also be reached from WO Proposals, Capacity Requirements and other screens ...

Areas of the **Production window**

With the Production Window the planner can retrieve detailed information about the **Inventory Development** and the **Ideal Schedule Development** for production parts.

planning grid

Controller

Depot ☒

☒ Part ☐ Family

Days

Weeks

Months

Retrieve

Pegging

WoList

ExpList

tab folder selection

Inventory Development

Ideal Schedule Development

Memo

header section

B1

PRODPART\_1

End-Production

Capa

OH

IN

LS

Cost

0.00

BN

no

Froz

0

Ovd CO

0

Reord

1

Min

0

Mult

1

Wos

0.00

chck

no

PTime

0

BTO

no

detail section

Inventory Development

BS	Period	IdSch	PropSch	Exec	NonExec	Firm	Expected	Dem	FGI	TDev	Act Wos	WoProp
1	01/01/98	10	10	10	0	0	0	10	0	0	0	10

Ideal Schedule Development

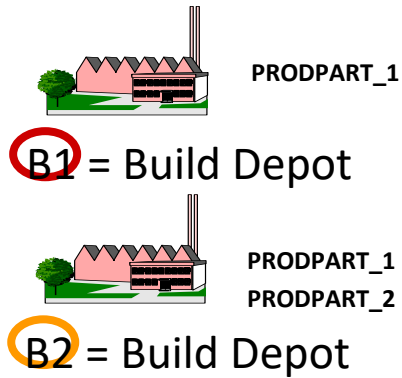
BS	Period	IdSch	CO	SFC	Dem	PrimDem	SecDem	Ideal FGI	WoST	T-FGI	Addtl.Dmd
1	01/01/98	10	0	10	10	10	0	0	0	0	0

Memo

Title	Memo
MPS Memo	will phase out 01/05/98

click to expand column

## Demand setup: PRODPART\_1 / 2



Material Environment			
Customer Orders			
Depot	Part	Qty	Req Date
<b>B1</b>	PRODPART_1	100	01/05/98
		50	01/07/98
		150	01/12/98
		100	01/16/98
	Sub	400	
<b>B2</b>	PRODPART_1	222	01/08/98
	Sub	222	
<b>B2</b>	PRODPART_2	500	01/04/98
		250	01/09/98
		300	01/12/98
	Sub	1050	

Menu: Planning - Material Environment

For the first step there is a simple production structure with two end-products being build in two build depot. All components are produced in the same depot and suppliers deliver all lower level material to this depot.

Bill of Material						
Bill of Material			Bill of Material (inverted)			
Level	Sub	Part	Description	Component	Description	Qty
		PRODPART_1	End-Production	UNCONSTR_IDEAL	Production	1.00000
			End-Production	UNCONSTR_EXE	Production	1.00000
			End-Production	CONSTR_EXE	Production	1.00000
		PRODPART_2	End-Production	CONSTR_EXE	Production	1.00000
			End-Production	COMP1_CONSTR	Production	1.00000
>		COMP1_CONSTR	Production	SUBCOMP1_CONST	Production	1.00000

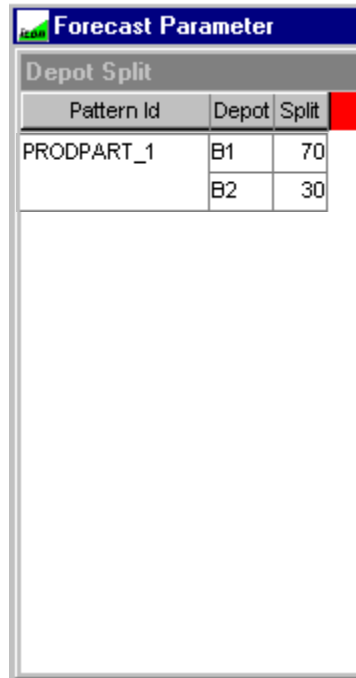
Menu: Planning - Bill of Material

Forecast Data				
Shippable Forecast				
Origin	Depot	Part	Order Date	Qty
Marketing	B1	PRODPART_1	01/02/98	21
Marketing	B1	PRODPART_1	01/05/98	20
Marketing	B1	PRODPART_1	01/06/98	20
...				
Marketing	B2	PRODPART_1	01/02/98	9
Marketing	B2	PRODPART_1	01/05/98	9
Marketing	B2	PRODPART_2	01/02/98	10
Marketing	B2	PRODPART_2	01/05/98	10

Menu: Forecast - Data

For both products the demand consists of customer orders on specific dates and shippable forecast which is divided in daily portions over the month.

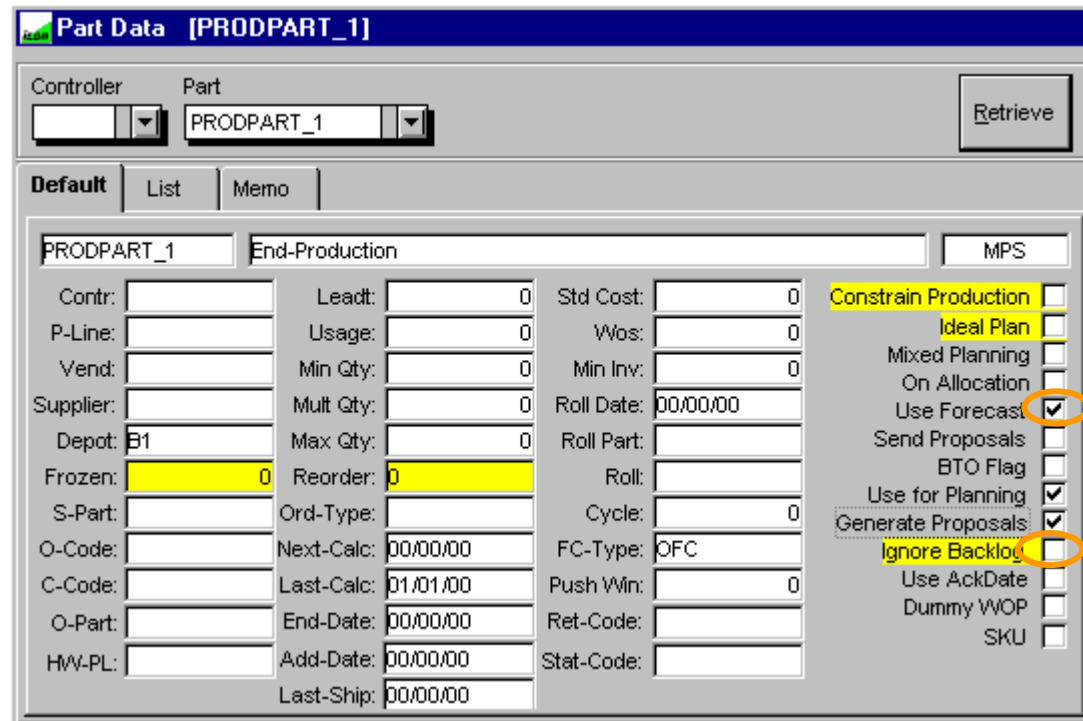
## Part setting - I



The 'Forecast Parameter' dialog box shows the 'Depot Split' section. It contains a table with the following data:

Pattern Id	Depot	Split
PRODPART_1	B1	70
	B2	30

Menu: Forecast - Parameter



The 'Part Data [PRODPART\_1]' dialog box shows various settings for the part. The 'Default' tab is selected. The 'MPS' section is highlighted. The 'Use Forecast' flag is checked, and the 'Ignore Backlog' flag is also checked. Arrows labeled 1 and 2 point to these flags respectively.

Controller: Part  
PRODPART\_1

Default List Memo

PRODPART\_1 End-Production MPS

Contr: Leadt: 0 Std Cost: 0 Wos: 0  
P-Line: Usage: 0 Min Qty: 0 Min Inv: 0  
Vend: Mult Qty: 0 Roll Date: 00/00/00  
Supplier: Max Qty: 0 Roll Part: 0  
Depot: B1 Frozen: 0 Reorder: 0 Roll: 0  
S-Part: Ord-Type: Cycle: 0  
O-Code: Next-Calc: 00/00/00 FC-Type: OFC  
C-Code: Last-Calc: 01/01/00 Push WIn: 0  
O-Part: End-Date: 00/00/00 Ret-Code: 0  
HW-PL: Add-Date: 00/00/00 Stat-Code: 0  
Last-Ship: 00/00/00

Constrain Production  
Ideal Plan  
Mixed Planning  
On Allocation  
Use Forecast ☒  
Send Proposals  
BTO Flag  
Use for Planning  
Generate Proposals  
Ignore Backlog ☒  
Use AckDate  
Dummy WOP  
SKU

Menu: Planning-Part Data

In **Forecast Parameter** the depot split for Prodpart\_1 is defined. Thereby the shippable forecast is split accordingly to depot B1 and B2.

1. With the '**Use Forecast**' flag checked, the shippable forecast for a part is considered for planning.
2. The '**Ignore Backlog**' flag checked would ignore customer orders for Prodpart\_1.

## Part setting - II

Part Data [PRODPART\_2]

Controller: [ ] Part: [PRODPART\_2] [Retrieve]

Default | List | Memo

PRODPART\_2 End-Production MPS

Contr: [ ] Leadt: [2] Std Cost: [0] Constrain Production [ ]  
P-Line: [ ] Usage: [0] Wos: [0] Ideal Plan [ ]  
Vend: [ ] Min Qty: [0] Min Inv: [0] Mixed Planning [ ]  
Supplier: [ ] Mult Qty: [0] Roll Date: [00/00/00] On Allocation [ ]  
Depot: **B2** Max Qty: [0] Roll Part: [ ] Use Forecast: [✓] 1.  
Frozen: [0] Reorder: [0] Roll: [ ] Send Proposals [ ]  
S-Part: [ ] Ord-Type: [ ] Cycle: [0] BTO Flag [ ]  
O-Code: [ ] Next-Calc: [00/00/00] FC-Type: [OFC] Use for Planning [✓]  
C-Code: [ ] Last-Calc: [01/01/00] Push Win: [0] Generate Proposals [✓]  
O-Part: [ ] End-Date: [00/00/00] Ret-Code: [ ] Ignore Backlog [ ] 2.  
HW-PL: [ ] Add-Date: [00/00/00] Stat-Code: [ ] Use AckDate [ ]  
Last-Ship: [00/00/00] Dummy WOP [ ]  
SKU [ ]

menu: Planning-Part Data

**default depot**

In **Part Data** the default depot is B2 and there is no depot split for parts (also those of other Parameter). Thereby the shippable forecast is routed completely to depot B2.

Planning Settings

Ignore Forecast [ ] Days [0]  
Ignore Backlog [ ]  
Ignore addtl. Demand [ ]  
Simulation only [ ]  
Days [99] Weeks [0] Months [99]  
Use Ack Date  
BTO [✓]  
BTP [✓]  
Local / Global Simulation  
Auto-Refresh [ ]  
Display Message [✓]  
[Save]

menu: Planning-Settings

In Planning Settings forecast and customer orders can be ignored for all parts during simulations.

As a forecast also those of other planners are influenced by this setting it is strongly recommended to use these flags only for **'local simulations' = Simulation only.**



Using the **Planning grid** (part, depot selection)

Choose a part, a depot and click the 'Retrieve-button'.

click 'Retrieve-button'

Production Plan [B1, PRODPART\_1]

Controller: ☐ Depot ☒ Part ☐ Family

Days: 99 Weeks: 0 Months: 99

Retrieve Pegging WoList ExpList

Inventory Development Ideal Schedule Development Memo

B1 PRODPART\_1 End-Production Capa OH 0 IN 0 LS 0 Cost 0.00 BN no

Froz 0 Ovd CO 0 Reord 1 Min 0 Mult 1 Wos 0.00 chck no PTime 0 BTO no

BS	Period	IdSch	PropSch	Exec	NonExec	Firm	Expected	Dem	FGI	TDev	Act Wos	WoProp
1	01/02/98	21	21	21	0	0	0	21	0	0	0	21
1	01/05/98	120	120	120	0	0	0	120	0	0	0	120
1	01/06/98	20	20	20	0	0	0	20	0	0	0	20
1	01/07/98	70	70	70	0	0	0	70	0	0	0	70
1	01/08/98	20	20	20	0	0	0	20	0	0	0	20

click to expand 'Matl Req' column

PropSch	Exec	CO	FC	Rest	NonExec
21	21	0	21	0	0
120	120	100	20	0	0
20	20	0	20	0	0
70	70	50	20	0	0
20	20	0	20	0	0

Forecast Data				
Shippable Forecast				
Origin	Depot	Part	Order Date	Qty
Marketing	B1	PRODPART_1	01/02/98	21
Marketing	B1	PRODPART_1	01/05/98	20
Marketing	B1	PRODPART_1	01/06/98	20

Material Environment			
Customer Orders			
Depot	Part	Qty	Req Date
B1	PRODPART_1	100	01/05/98
		50	01/07/98

part, depot selection II

depot S2

click 'Retrieve-button'

Production Plan [B2, PRODPART\_1]

Controller:  Depot: ☒ Part: ☐ Family: ☐ Days: 99 Weeks: 0 Months: 99 Retrieve Pegging WoList ExpList

Inventory Development Ideal Schedule Development Memo

B2 PRODPART\_1 End-Production Capa: OH: 0 IN: 0 LS: 0 Cost: 0.00 BN: no

Froz: 0 Ovd CO: 0 Reord: 1 Min: 0 Mult: 1 Wos: 0.00 chck: no PTime: 0 BTO: no

BS	Period	IdSch	PropSch	Exec	CO	FC	Rest	NonExec	Firm	Expected	Dem	FGI	TT
1	01/02/98	9	9	9	0	9	0	0	0	0	9	0	
1	01/05/98	9	9	9	0	9	0	0	0	0	9	0	
1	01/06/98	9	9	9	0	9	0	0	0	0	9	0	
1	01/07/98	8	8	8	0	8	0	0	0	0	8	0	
1	01/08/98	230	230	230	222	8	0	0	0	0	230	0	

Material Environment

Customer Orders

Depot	Part	Qty	Req Date
B2	PRODPART_1	222	01/08/98
	Sub	222	

Forecast Data

Shipable Forecast

Origin	Depot	Part	Order Date	Qty
Marketing	B2	PRODPART_1	01/02/98	9
Marketing	B2	PRODPART_1	01/05/98	9
Marketing	B2	PRODPART_1	01/06/98	9
Marketing	B2	PRODPART_1	01/07/98	8
Marketing	B2	PRODPART_1	01/08/98	8

With the depot selection box () , the planner can look at the production situation for a part at one specific site.

## Cross depot selection

click 'Retrieve-button'

**B1+B2 B1+B2**

BS	Period	IdSch	PropSch	Exec	CO	FC	Rest	NonExec	Firm	Expected	Dem	FGI	TC
1	01/02/98	30	30	30	0	30	0	0	0	0	30	0	
1	01/05/98	129	129	129	100	29	0	0	0	0	129	0	
1	01/06/98	29	29	29	0	29	0	0	0	0	29	0	
1	01/07/98	78	78	78	50	28	0	0	0	0	78	0	
1	01/08/98	250	250	250	222	28	0	0	0	0	250	0	

The planner can start cross-depot queries (all depot) with the check box 'Depot' unchecked. In this example CO quantity still can be identified (unique date and quantity) where forecast is displayed as a sum of forecast for depot B1 and B2.

With a cross depot selection data entries in simulation columns (yellow) are ignored, because an entry could not be assigned to a part-depot combination.

Depot with no demand or inventory

click 'Retrieve-button'

BS	Period	IdSch	PropSch	Exec	NonExec	Firm	Expected	Dem	FGI	TDev	Act Wos	WoProp
0	11/11/22	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0			0
Total K\$									0			

If there is ~~no demand and no inventory~~ for the specified part at a specific site, you get a screen with no entries in the header section ( ) of the procurement screen plus a row with '0' for the defined end date 11/11/2022 ( ).

Depot	Description	Dropship	Plan Flag
B1	Build Depot	<input type="checkbox"/>	<input checked="" type="checkbox"/>
B2	Build Depot	<input type="checkbox"/>	<input type="checkbox"/>
S1	Ship Depot 1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
S2	Ship Depot 2	<input type="checkbox"/>	<input checked="" type="checkbox"/>

menu: SysAdmin Depots

no demand

no inventory

Another explanation for an empty production window could be, that a depot is not being planned.

menu: Planning - Material Environment

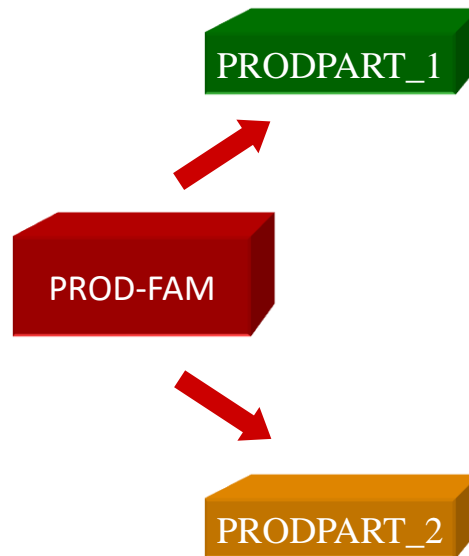
Family setup:

In Tec VEP families can be setup by an explicit family-part entry (Part-Flag) or as a generic family via sql-statement (Def-Flag).

A generic family gets created once a line with a Def-Flag is expanded with the Expand button. The Verify button checks if a sql-statement is valid.

Family	Part	Flag	Def Fam
PROD-FAM	PRODPART_1	Part	<input type="checkbox"/>
PROD-FAM	PRODPART_2	Part	<input type="checkbox"/>
or			
PROD-FAM	PART LIKE 'PRODPART%'	Def	<input type="checkbox"/>

menu: Planning-Family Setup



Customer Orders				
Depot	Part	Qty	Req Date	
B1	PRODPART_1	100	01/05/98	
		50	01/07/98	
		150	01/12/98	
		100	01/16/98	
	Sub	400		
B2	PRODPART_1	222	01/08/98	
	Sub	222		

Shippable Forecast				
Origin	Depot	Part	Order Date	Qty
Marketing	B1	PRODPART_1	01/02/98	21
Marketing	B1	PRODPART_1	01/05/98	20
Marketing	B1	PRODPART_1	01/06/98	20
Marketing	B2	PRODPART_1	01/02/98	9
Marketing	B2	PRODPART_1	01/05/98	9
Marketing	B2	PRODPART_1	01/06/98	9

Customer Orders				
Depot	Part	Qty	Req Date	
B2	PRODPART_2	500	01/04/98	
		250	01/09/98	
		300	01/12/98	
	Sub	1050		

Shippable Forecast				
Origin	Depot	Part	Order Date	Qty
Marketing	B2	PRODPART_2	01/02/98	10
Marketing	B2	PRODPART_2	01/05/98	10
Marketing	B2	PRODPART_2	01/06/98	10

## Family selection

1. click 'Family-radio button'  
2. select family  
3. click 'Retrieve-button'

**Production Plan [PROD-FAM]**

Controller: [ ] Depot: [ ] ☐ Part ☒ Family PROD-FAM Days: 99 Weeks: 0 Months: 99 Retrieve Pegging WoList ExpList

**Inventory Development** | Ideal Schedule Development | Memo

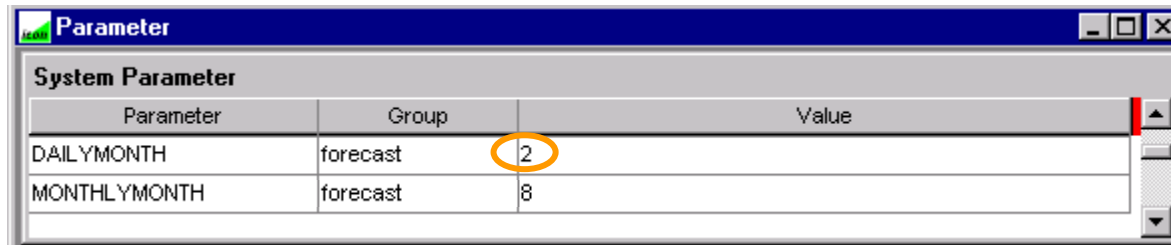
PROD-FAM Capa: [ ] OH: 0 IN: 0 LS: 0 Cost: 0.00 BN: [ ]  
Froz: 0 Ovd CO: 0 Reord: 1 Min: 0 Mult: 1 Wos: 0.00 chck: no PTime: [ ] BTO: no

BS	Period	IdSch	PropSch	Exec	CO	FC	Rest	NonExec	Firm	Expected	Dem	FGI	TD
1	01/02/98	540	540	540	500	40	0	0	0	0	540	0	
1	01/05/98	139	139	139	100	39	0	0	0	0	139	0	
1	01/06/98	39	39	39	0	39	0	0	0	0	39	0	
1	01/07/98	88	88	88	50	38	0	0	0	0	88	0	
1	01/08/98	260	260	260	222	38	0	0	0	0	260	0	
1	01/09/98	290	290	290	250	40	0	0	0	0	290	0	
1	01/12/98	489	489	489	450	39	0	0	0	0	489	0	

With the radio button 'Part-Family', the planner can switch from part-related selection to family-related selections. The family setup offers a possibility to aggregate different parts to a family. Likewise the production situation for the family can be viewed site specific or cross-depots.

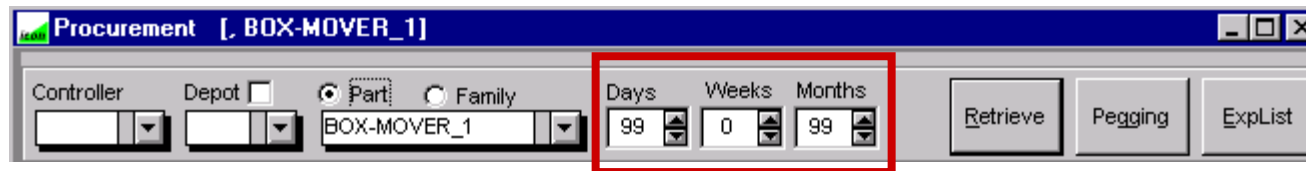
With the family selection data entries in simulation columns (yellow) are ignored, because an entry can not be assigned to a part-depot combination. The Pegging, WoList and ExpList functionality are also not available.

Using the **Planning grid** (planning horizon)



Parameter	Group	Value
DAILYMONTH	forecast	2
MONTHLYMONTH	forecast	8

menu:'Sysadmin - Parameter'

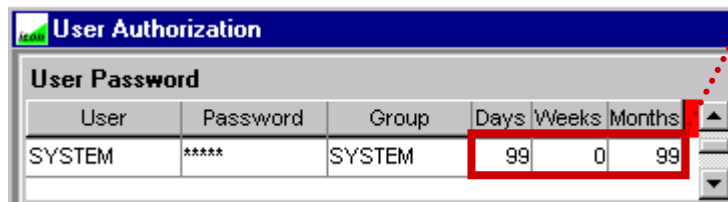


Controller: [ ] Depot: [ ] ☒ Part ☐ Family

BOX-MOVER\_1

Days: 99 Weeks: 0 Months: 99

Retrieve Pegging ExpList



User	Password	Group	Days	Weeks	Months
SYSTEM	*****	SYSTEM	99	0	99

menu:'Sysadmin -User Authorization'

The Display grid for the individual periods is geared to the defaults in Days, Weeks and Months. The defaults can be set for each user in 'Sysadmin - User Authorization'.

The displayed number of days, weeks and months in the output of the procurement window is specified in Planning grid. The System parameters DAILYMONTH and MONTHLYMONTH influence the available number of periods which are actually calculated by the server. Information that isn't calculated can obviously not be displayed.

That means for the example that the displayed number of daily periods will not exceed the number of days for the first 2 months ( ). Likewise a maximum number of 10 (2 + 8) months can be displayed.

## Planning periods and output

default:

Days: 99 Weeks: 0 Months: 99

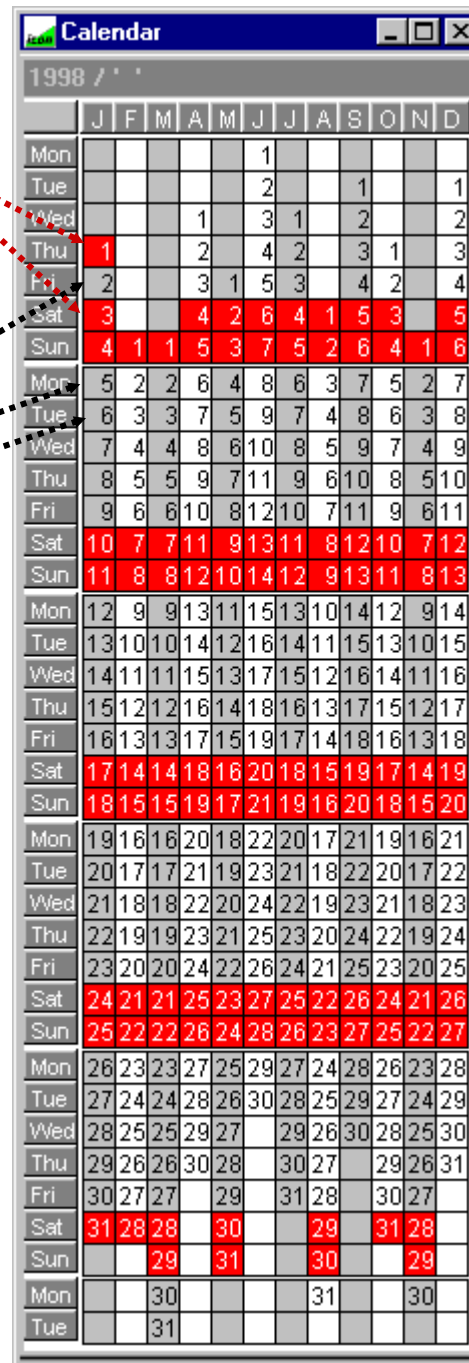
BS	Period	IdSch
1	01/02/98	30
1	01/05/98	129
1	01/06/98	29
1	01/07/98	78
1	01/08/98	250
1	01/09/98	30
1	01/12/98	179

•

•

•

1	02/25/98	34
1	02/26/98	34
1	02/27/98	34
22	03/02/98	800
22	04/01/98	1300
21	05/01/98	1400
22	06/01/98	1100
23	07/01/98	500
21	08/03/98	600
22	09/01/98	600
22	10/01/98	400
<b>Total</b>		8597
<b>Total K\$</b>		0



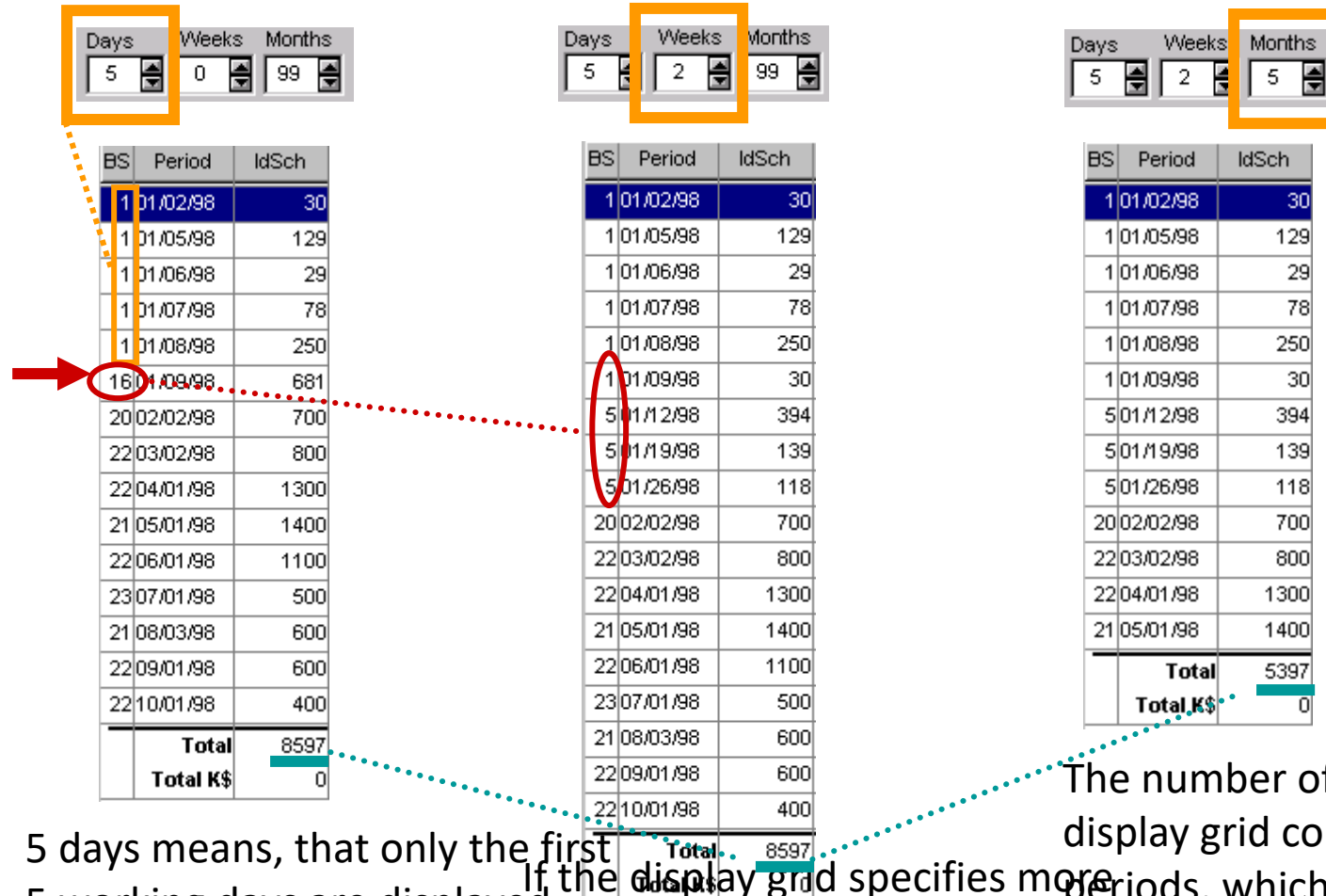
Column 'BS' stands for bucket size and contains the number of working days, which are represented by a specific row. For a daily period the bucket size is '1', for a monthly period it depends on the months (e.g. March 98 contains 22 working days).

Whether a calendar day is a working day is defined in calendar window (red days are weekends or holidays).

Column 'Period' displays the first working day of each bucket.

Column 'IdSch' stands for ideal schedule and is determined on the basis of demand and the required target inventory for the period.





5 days means, that only the first 5 working days are displayed individually. The following bucket (16) aggregates the rest of the working days of the month.

If the display grid specifies more than 0 weeks, the 'rest bucket' of the actual month is displayed in weekly portions.

If there are less weeks left for the actual month the following month is displayed in weekly buckets as well (Maximum of DAILYMONTH

The number of months in the display grid controls the actual periods, which are added up for the total at the bottom of the procurement screen.

The displayed number can not exceed MONTHLYMONTH periods.

## Depot specific calendar

**Calendar**

Open Create Delete

Depots	Years
B1	1997
B2	1998

Retrieve

**Parameter**

System Parameter

Parameter	Group	Value
DEFAULT_CAL	engine	B1

In Tec VEP different calendars can be defined for different depots. If no calendar exists for a depot, the DEFAULT\_CAL is being used. Valid entries are " for an empty calendar (no working days excluded) or any **depot id**.

B1 PRODPART\_1

Froz 0 Ovd CO

BS	Period	IdSch
1	01/02/98	21
1	01/05/98	120
1	01/06/98	20
1	01/07/98	70
1	01/08/98	20
1	01/09/98	21
5	01/12/98	351

1998

	J	F	M	A	M	J	J	A	S	O	N	D
Mon												
Tue					2			1			1	
Wed				1	3	1		2			2	
Thu	1			2	4	2		3	1		3	
Fri	2			3	1	5	3		4	2		4
Sat	3			4	2	6	4	1	5	3		5
Sun	4	1	1	5	3	7	5	2	6	4	1	6
Mon	5	2	2	6	4	8	6	3	7	5	2	7
Tue	6	3	3	7	5	9	7	4	8	6	3	8
Wed	7	4	4	8	6	10	8	5	9	7	4	9
Thu	8	5	5	9	7	11	9	6	10	8	5	10
Fri	9	6	6	10	8	12	10	7	11	9	6	11
Sat	10	7	7	11	9	13	11	8	12	10	7	12
Sun	11	8	8	12	10	14	12	9	13	11	8	13
Mon	12	9	9	13	11	15	13	10	14	12	9	14
Tue	13	10	10	14	12	16	14	11	15	13	10	15

B2 PRODPART\_1

Froz 0 Ovd CO

BS	Period	IdSch
1	01/02/98	11
1	01/07/98	11
1	01/08/98	233
1	01/09/98	10
1	01/12/98	9
1	01/13/98	9
1	01/14/98	9

\*\*\*Calendar B2 is used from now on for production in depot B2.

## Header section

Material Environment				
Customer Orders				
Depot	Part	Qty	Req Date	Order Item No
B2	PRODPART_3	80	12/27/97	p3-1
		160	12/30/97	p3-2
	Sub	240		
	Total	240		

Material Environment								
Inventory								
Depot	Part	Avail o.H.	Adjust o.H.	Tot Avl	Intransit	Tot Usable	Linestores	Tot o.H.
B2	PRODPART_3	100	-80	20	0	20	0	20
	Total	100	-80	20	0	20	0	20

Inventory Development		Ideal Schedule Development				Memo											
B2	PRODPART_3	End-Production	Capa		OH	20	IN	0	LS	0	Cost	100.00	BN	no			
Froz		Ovd CO	240	Reord	3	Min	100	Mult	50	Wos	0.00	chck	no	PTime	4	BTO	yes

Part Data [PRODPART_3]			
Controller	Part		
	PRODPART_3		
Retrieve			
Default List Memo			
PRODPART_3		End-Production	
Contr:	Leadtt: 4	Std Cost: 100.000	Constrain Production
P-Line:	Usage: 0	Wos: 0	Ideal Plan
Vend:	Min Qty: 100.0	Min Inv: 0	Mixed Planning
Supplier:	Mult Qty: 50.0	Roll Date: 00/00/00	On Allocation
Depot: B2	Max Qty: 0	Roll Part:	Use Forecast
Frozen: 0	Reorder: 3	Roll:	Send Proposals
S-Part:	Ord-Type:	Cycle: 0	BTO Flag
O-Code:	Next-Calc: 00/00/00	FC-Type: OFC	Use for Planning
C-Code:	Last-Calc: 01/01/00	Push WIn: 0	Generate Proposals
O-Part:	End-Date: 00/00/00	Ret-Code:	Ignore Backlog
HW-PL:	Add-Date: 00/00/00	Stat-Code:	Use AckDate
	Last-Ship: 00/00/00		Dummy WOP
			SKU

Capa: capacity on which work orders are executed.

chck: indicates whether the capacity where WOs are executed is was checked when the WOs were executed.

BN: indicates if backlog netting is activated (if a BN pattern is defined for the pattern id the part belongs to).

[forecast parameter-pattern definition]

Wos: informs for how many weeks the actual on hand quantity (OH) would be sufficient to cover the demand

Header section (specific overwrites default)

**Part Data [PRODPART\_3]**

Depot specific

Part	Process	Supplier	LT	Units / h	Min Qty	Mult Qty	Max Qty	Reorder	Frozen
PRODPART_3	Capacity	LINE 3	0	10.00	50.0	25.0	0	5	X -1

'Part Data **Default**' data is overwritten by 'Depot specific' and 'Weeks of Supply' data.

B2 PRODPART\_3 End-Production

Capa LINE 3 OH 20 IN 0 LS 0 Cost 100.00 BN no

Froz 0 Ovd CO 240 Reord 5 Min 50 Mult 25 Wos 0.00 chck no PTime 2 BTO yes

**Part Data [PRODPART\_3]**

Controller Part

PRODPART\_3

Retrieve

Default List Memo

PRODPART\_3 End-Production MPS

Contr:	Lead: X 4	Std Cost:	100.000	Constrain Production	<input type="checkbox"/>
P-Line:	Usage: 0	Wos:	X 0	Ideal Plan	<input type="checkbox"/>
Vend:	Min Qty: X 100.0	Min Inv:	X 0	Mixed Planning	<input type="checkbox"/>
Supplier:	Mult Qty: X 50.0	Roll Date:	00/00/00	On Allocation	<input type="checkbox"/>
Depot: B2	Max Qty: 0	Roll Part:		Use Forecast	<input type="checkbox"/>
Frozen: 0	Reorder: 3 X	Roll:		Send Proposals	<input type="checkbox"/>
S-Part:	Ord-Type:	Cycle:	0	BTO Flag	<input checked="" type="checkbox"/>
O-Code:	Next-Calc: 00/00/00	FC-Type:	OFC	Use for Planning	<input checked="" type="checkbox"/>
C-Code:	Last-Calc: 01/01/00	Push WIn:	0	Generate Proposals	<input checked="" type="checkbox"/>
O-Part:	End-Date: 00/00/00	Ret-Code:		Ignore Backlog	<input type="checkbox"/>
HWV-PL:	Add-Date: 00/00/00	Stat-Code:		Use AckDate	<input type="checkbox"/>
	Last-Ship: 00/00/00			Dummy WOP	<input type="checkbox"/>
				SKU	<input type="checkbox"/>

**Part Data [PRODPART\_3]**

Weeks of Supply

Depot	Part	Month	Wos	Min Inv
B2	PRODPART_3	Feb	2.0	50
		Jul	3.0	100

Part-depot combinations without an explicit entry still take the default data.

A '-1'-entry in an integer column of 'Depot specific' doesn't overwrite the 'Part Data Default' data for this column (e.g. Frozen ).

## Ideal Schedule Development

This subwindow contains information about the **Ideal Schedule Development**.

Inventory Development			Ideal Schedule Development		Memo						
BS	Period	IdSch	CO	SFC	Dem	PrimDem	SecDem	Ideal FGI	WoST	T-FGI	Addtl.Dmd
1	01/02/98	161	0	21	21	21	0	140	0.40	140	0
1	01/05/98	70	100	20	120	120	0	90	0.40	90	0
1	01/06/98	20	0	20	20	20	0	90	0.40	90	0

### Columns:

BS: Bucket Size (number of working days)

Period: first day of a bucket

IdSch: Ideal Schedule shows necessary order quantities to reach the target inventory level if open work orders (firm) reordering and lead time is ignored

CO: Customer Orders contain the sum of the direct CO for the Part and the CO for the systems into which the part goes.

SFC: Shipment Forecast is part- and depot-specific and is determined with the Forecast Parameters *Depot Split*, *Monthly Shipment Split*, *Weekly Shipment Split* taking into account the *Devaluation*. SFC contains the sum of direct SFC and SFC for systems into which the part goes.

Dem: Demand = PrimDem + SecDemand

In Dem Secondary Demand is listed according to the required date. The sum CO + SFC may differ from Dem, if there is e.g. secondary demand on a component but also inventory on parent systems.

Prim Dem: Primary Demand

Sec Dem: Secondary Demand

Secondary Demand comes from the Ideal Plan and does not consider the Executable Plan

Ideal FGI: Ideal inventory development

$$\bullet \text{ Ideal FGI ( t ) = Ideal FGI ( t-1 ) - Demand ( t ) + Ideal Schedule ( t ) }$$

WoS Targ: Weeks of Supply Target shows the number of weeks which the stock is supposed to cover the demand (Dem).

T-FGI: Target Inventory results from Week of Supply Target and has to exceed Min Inventory

Addtl Dmd: Additional Demand in this column is Primary Additional Demand. Additional Demand from parent systems is listed and treated as CO or FC depending on the system parameter TREAT\_AD\_AS\_FC.

yellow columns allow data entry for simulations

## Ideal Schedule (IdSch)

B1	PRODPART_1	End-Production	Capa	-	OH	60	IN	0	LS	0	Cost	0.00	BN	no			
Froz	0	Ovd CO	0	Reord	1	Min	0	Mult	1	Wos	0.20	chck		PTime	2	BTO	no

BS	Period	IdSch	CO	SFC	Dem	PrimDem	SecDem	Ideal FGI	WvOST	T-FGI	Addtl.Dmd
1	01/02/98	101	0	21	21	21	0	140	0.40	140	0
1	01/05/98	70	100	20	120	120	0	90	0.40	90	0
1	01/06/98	20	0	20	20	20	0	90	0.40	90	0
1	01/07/98	21	50	20	70	70	0	41	0.40	41	0
1	01/08/98	170	0	20	20	20	0	191	0.40	191	0
1	01/09/98	20	0	21	21	21	0	190	0.40	190	0
1	01/12/98	20	150	20	170	170	0	40	0.40	40	0
1	01/13/98	20	0	20	20	20	0	40	0.40	40	0
1	01/14/98	121	0	20	20	20	0	141	0.40	141	0
1	01/15/98	20	0	20	20	20	0	141	0.40	141	0
1	01/16/98	20	100	21	121	121	0	40	0.40	40	0

$$\text{IdSch} (t) = \text{MAX} [ 0, \text{Dem} (t) + \text{T-FGI} (t) - \text{Ideal FGI} (t-1) ]_{\text{min/mult}}$$

Ideal Schedule is based on Ideal Demand (Dem) and Ideal Inventory deviation (difference between Target FGI and the Ideal FGI of the preceding period).

## Inventory Development

This subwindow contains information about the **Inventory Development**.

Inventory Development		Ideal Schedule Development				Memo									
B1	PRODPART_1	End-Production	Capa		OH	60	IN	0	LS	0	Cost	0.00	BN	no	
Froz	0	Ovd CO	0	Reord	1	Min	0	Mult	1	Wos	0.20	chck	no	PTime	2
BTO	no														
BS	Period	IdSch	PropSch	Exec	CO	FC	Rest	NonExec	Firm	Expected	Dem	FGI	TDev	Act Wos	WoProp
1	01/02/98	101	101	0	0	0	0	101	0	0	21	39	-101	0	0
1	01/05/98	70	70	0	0	0	0	171	0	0	120	-81	-171	-0.20	0
1	01/06/98	20	20	191	90	101	0	0	0	0	20	90	0	0.40	191

### Columns:

BS: Bucket Size (number of working days)

Period: first day of a bucket

IdSch: Ideal Schedule shows necessary work order quantities to reach the target inventory level if open work orders (firm) reordering and lead time is ignored

ProdSch: Proposed Schedule based on reordering, frozen and open work orders ignoring lead times

$$\bullet \text{ PropSch}(t) = \text{MAX}[0, \text{SUM}(\text{Demand}(i))] - \text{Firm}(t) - \text{Expected}(t)$$

Exec: Executable work orders of PropSch quantity

- CO: Executable WOs based on customer orders
- FC: Executable WOs based on forecasts
- Rest: Executable WOs based on demand from FGI goal or Min/Mult requirements

NonExec: Non Executable WOs are the portion from PropSch which can not be executed because of material or capacity constraints

Firm: Receipts from open work orders

ExpRcpts: Expected Receipts (planned receipts from POs, IWTs and WO Proposals). Firm WOs are not included

FGI: Finished goods inventory (= planned closing inventory for period)

$$\bullet \text{ FGI}(t) = \text{FGI}(t-1) - \text{Demand}(t) + \text{Exec}(t) + \text{Firm}(t)$$

Dem: Demand = PrimDem + SecDemand

T-Dev: Target Deviation from the Target Inventory

$$\bullet \text{ Target Inventory Deviation} = \text{FGI}(t-1) - \text{Target Inventory}(t)$$

Act WoS: Actual Weeks of Supply shows the number of weeks which the stock is sufficient to cover the demand.

- $\text{FGI}(t) > 0$  specifies how many weeks the stock will meet the demand without any further receipts
- $\text{FGI}(t) < 0$  specifies how many weeks it will take to reach stock with the planned receipts and issues

WO Prop: Work Order Proposals are created for PropSch quantities which are not covered by Firm work orders. Lead times are taken into account.

## Production detail - PropSch

B1	PRODPART_1	End-Production	Capa		OH	10	IN	0	LS	0	Cost	0.00	BN	no	
Froz	0	Ovd CO	0	Reord	1	Min	0	Mult	1	Wos	0.00	chck	no	PTime	0
		BTO	no												

BS	Period	IdSch	PropSch	Exec	NonExec	Firm	Expected	Dem	FGI	TDev	Act Wos	WoProp
1	01/02/98	11	11	11	0	0	0	21	0	0	0	11
1	01/05/98	120	120	120	0	40	0	120	0	0	0	80
1	01/06/98	20	20	20	0	0	0	20	- 0	0	0	20
1	01/07/98	70	20	20	0	0	- 50	70	0	0	0	20
1	01/08/98	20	20	20	0	0	0	20	0	0	0	20
1	01/09/98	21	21	21	0	0	0	21	0	0	0	21
1	01/12/98	170	170	170	0	0	0	170	0	0	0	170
1	01/13/98	20	30	30	0	30	0	20	10	10	0	0
1	01/14/98	20	10	10	0	0	0	20	0	0	0	10

BS	Period	IdSch	CO	SFC	Dem	PrimDem	SecDem	Ideal FGI	WoST	T-FGI	Addtl.Dmd
1	01/06/98	20	0	20	20	20	0	0	0	0	0
1	01/07/98	70	50	20	70	70	0	0	0	0	0
1	01/08/98	20	0	20	20	20	0	0	0	0	0

Part	PRODPART_1
Constrain Production	<input type="checkbox"/>
Ideal Plan	<input type="checkbox"/>
Mixed Planning	<input type="checkbox"/>
On Allocation	<input type="checkbox"/>
Use Forecast	<input checked="" type="checkbox"/>
Send Proposals	<input type="checkbox"/>
BTO Flag	<input type="checkbox"/>
Use for Planning	<input checked="" type="checkbox"/>
Generate Proposals	<input checked="" type="checkbox"/>
Ignore Backlog	<input type="checkbox"/>
Use AckDate	<input type="checkbox"/>
Dummy WOP	<input type="checkbox"/>
SKU	<input type="checkbox"/>

$$\text{PropSch} (t) = \text{MAX} [ \text{Firm}(t), \text{Dem}(t) + \text{T-FGI}(t) - \text{Expected}(t) - \text{FGI}(t-1) ]$$

The Proposed Schedule column is calculated out of demand plus target-FGI (projected requirements at the end of the period) minus inventory minus expected receipts (from Purchase orders or IWTs). The displayed number in PropSch represents the maximum from this calculation schema and the firm orders from the execution system.

The Exec and NonExec columns split up the PropSch quantity in an executable portion and a non-executable portion.



## Production detail - WoProp

B1

PRODPART\_1

End-Production

Capa

OH

10

IN

0

LS

0

Cost

0.00

BN

no

Froz

0

Ovd CO

0

Reord

1

Min

0

Mult

1

Wos

0.00

chck

no

PTime

0

BTO

no

BS	Period	IdSch	PropSch	Exec	NonExec	Firm	Expected	Dem	FGI	TDev	Act Wos	WoProp
1	01/02/98	11	11	11	0	0	0	21	0	0	0	11
1	01/05/98	120	120	120	0	- 40	0	120	0	0	0	80
1	01/06/98	20	20	20	0	0	0	20	0	0	0	20
1	01/07/98	70	20	20	0	0	50	70	0	0	0	20
1	01/08/98	20	20	20	0	0	0	20	0	0	0	20
1	01/09/98	21	21	21	0	0	0	21	0	0	0	21
1	01/12/98	170	170	170	0	0	0	170	0	0	0	170
1	01/13/98	20	30	30	0	- 30	0	20	10	10	0	0
1	01/14/98	20	10	10	0	0	0	20	0	0	0	10
1	01/15/98	20	20	20	0	0	0	20	0	0	0	20
1	01/16/98	121	121	121	0	0	0	121	0	0	0	121
Total		613	563	563	0	70	50	623				493

Part

PRODPART\_1

Constrain Production

Ideal Plan

Mixed Planning

On Allocation

Use Forecast

Send Proposals

BTO Flag

Use for Planning

Generate Proposals

Ignore Backlog

Use AckDate

Dummy WOP

SKU

$$\text{WoProp ( t )} = \text{Exec (PropSch)} - \sum \text{Firm}$$

The WoProp column is only calculated if the 'Generate Proposal' flag is checked for a part. Here you can see an easy case where all proposed quantities are executable and production time = 0. Firm portions of Exec quantities do not generate any further WoProp.

Material Environment				
Work Orders				
Depot	Part	Qty	Exec	Fix
B1	PRODPART_1	40	01/05/98	Firm
		30	01/13/98	Firm

Firm WOs are loaded via interface files from the execution system. They are displayed in the Material Environment Work Order subwindow as 'Firm' Work Orders.

## Production Time

B1	PRODPART_1	End-Production	Capa		OH	10	IN	0	LS	0	Cost	0.00	BN	no	
Froz	0	Ovd CO	0	Reord	1	Min	0	Mult	1	Wos	0.00	chck	yes	PTime	2
														BTO	no

BS	Period	IdSch	PropSch	Exec	NonExec	Firm	Expected	Dem	FGI	TDev	Act Wos	WoProp
1	01/02/98	11	11	0	11	0	0	21	-11	-11	-0.60	0
1	01/05/98	120	120	0	131	40	0	120	-131	-131	-0.40	0
1	01/06/98	20	20	0	151	0	0	20	-151	-151	-0.20	0
1	01/07/98	70	20	171	0	0	50	70	0	0	0	131
1	01/08/98	20	20	20	0	0	0	20	0	0	0	20
1	01/09/98	21	21	21	0	0	0	21	0	0	0	21
1	01/12/98	170	170	150	20	0	0	170	-20	-20	-0.20	150
1	01/13/98	20	30	30	20	30	0	20	-10	-10	-0.20	0
1	01/14/98	20	10	30	0	0	0	20	0	0	0	30

B1	CONSTR_EXE	Production	
Froz	0	Ovd CO	0
BS	Period	IdSch	PropSch
1	01/02/98	151	0
1	01/05/98	20	300
1	01/06/98	20	0
1	01/07/98	21	0
1	01/08/98	170	0
1	01/09/98	30	0
1	01/12/98	10	150
1	01/13/98	20	0

Part	CONSTR_EXE
Constrain Production	<input checked="" type="checkbox"/>
Ideal Plan	<input type="checkbox"/>
Mixed Planning	<input type="checkbox"/>
On Allocation	<input type="checkbox"/>
Use Forecast	<input checked="" type="checkbox"/>
Send Proposals	<input type="checkbox"/>
BTO Flag	<input type="checkbox"/>
Use for Planning	<input checked="" type="checkbox"/>
Generate Proposals	<input type="checkbox"/>
Ignore Backlog	<input type="checkbox"/>
Use AckDate	<input type="checkbox"/>
Dummy WOP	<input type="checkbox"/>
SKU	<input type="checkbox"/>

Ptime is entered in the Leadt(ime) field of Part Data Default or Part Data Depot specific.

A Ptime of 2 days means that all constraining components of the product need to be available 2 days before production starts.

The component constr\_exe is available on 01/05/98 and on 01/12/98. Therefore Prodpart\_1 can not be produced before 01/07/98 and 01/14/98.

The orange marked example shows why ' $\sum Firm$ ' is necessary in the above formula.

$$WoProp(t) = Exec(PropSch) - \sum Firm$$

On hand inventory

## cross depot ( B1 and B2)

☐ PRODPART\_1 End-Production Capa  OH  200 IN  0 LS  0 Cost  0.00 BN   
 Froz  0 Ovd CO  0 Reord  1 Min  0 Mult  1 Wos  0.60 chck  yes PTime  2 BTO  no

BS	Period	IdSch	PropSch	Exec	NonExec	Firm	Expected	Dem	FGI	TDev	Act Wos	WoProp
1	01/02/98	0	11	0	11	0	0	32	168	168	0.40	0
1	01/05/98	0	40	40	11	40	0	120	88	88	0.20	0
1	01/06/98	0	0	0	11	0	0	20	68	68	0	0
1	01/07/98	53	11	0	22	0	50	81	37	37	0	0
1	01/08/98	253	233	0	255	0	0	253	-216	-216	-0.40	0
1	01/09/98	31	10	0	265	0	0	31	-247	-247	-0.20	0

## depot B1

BS	Period	IdSch	PropSch	Exec	NonExec	Firm	Expected	Dem	FGI	TDev	Act Wos	WoProp
1	01/02/98	0	0	0	0	0	0	21	179	179	0.40	0
1	01/05/98	0	40	40	0	40	0	120	99	99	0.40	0
1	01/06/98	0	0	0	0	0	0	20	79	79	0.20	0
1	01/07/98	31	0	0	0	0	50	70	59	59	0.40	0
1	01/08/98	20	0	0	0	0	0	20	39	39	0.20	0
1	01/09/98	21	0	0	0	0	0	21	18	18	0	0

## depot B2

BS	Period	IdSch	PropSch	Exec	NonExec	Firm	Expected	Dem	FGI	TDev	Act Wos	WoProp
1	01/02/98	11	11	0	11	0	0	11	-11	-11	-0.80	0
1	01/07/98	11	11	0	22	0	0	11	-22	-22	-0.60	0
1	01/08/98	233	233	0	255	0	0	233	-255	-255	-0.40	0
1	01/09/98	10	10	0	265	0	0	10	-265	-265	-0.20	0

OH quantities are displayed per depot in Material Environment Inventory.

Inventory				
Depot	Part	Avail o.H.	Adjust o.H.	Tot Avl
B1	PRODPART_1	0	200	200
	Total	0	200	200

The intention of the cross depot query is to show the cumulated (system wide) inventory. You don't see any wrong allocation here.  $(\quad) 168 = -11 + 179$  Negative entries in a cross depot query show that the cumulated inventory would not be sufficient even if transfer times would be neglected. depot B2 is missing material. The PropSch is calculated that the demand (Dem) is exactly covered taking the inventory level into account  $(\quad)$ .

Min Qty

Min order quantities can be set in 'Part Data default' (Depot specifics). Each PropSch quantity (except for firm orders) matches the Min criteria.

B1 PRODPART\_1 End-Production Capa OH 10 IN 0 LS 0 Cost 0.00 BN no  
Froz 0 Ovd CO 0 Reord 1 Min 30 Mult 1 Wos 0.00 chck yes PTime 2 BTO no

BS	Period	IdSch	PropSch	Exec	NonExec	Firm	Expected	Dem	FGI	TDev	Act Wos	WoProp
1	01/02/98	30	30	0	30	0	0	21	-11	-11	-0.40	0
1	01/05/98	101	101	0	131	40	0	120	-131	-131	-0.20	0
1	01/06/98	30	30	161	0	0	0	20	10	10	0	121
1	01/07/98	60	30	30	0	0	50	70	20	20	0.20	30
1	01/08/98	30	0	0	0	0	0	20	0	0	0	0
1	01/09/98	30	30	30	0	0	0	21	9	9	0	0
1	01/12/98	151	161	161	0	0	0	170	0	0	0	0

**Part Data**

Lead: 2  
Usage: 0  
Min Qty: 30.0  
Mult Qty: 0  
Max Qty: 0  
Reorder: 0

Each WO  $\geq 30$

1. choose row with PropSch or / and WoProp  $> 0$
2. click 'Retrieve-button'

Controller Depot ☒ Part ☐ Family Days 99 Weeks 0 Months 99 Retrieve Pegging **WoList** ExpList

**Workorder List [B1, PRODPART\_1]**

Depot: B1 Part: PRODPART\_1

Needed	Proposed	Exec	Late	Order Qty	Qty	Status
01/05/98	01/05/98	01/06/98	1	41	41	Free
01/05/98	01/05/98	01/06/98	1	20	20	Free
01/05/98	01/05/98	01/06/98	1	30	40	Firm

In the Work order List you can see all work orders which are executable that day or proposed for and executable during the planning horizon.

The Min quantity is considered for the proposed quantity but not for the individual WO. If portions of a WO are not executable the executable portion as well as the missed quantity is scheduled ignoring

## Mult Qty

Mult quantities can be set in 'Part Data default' (Depot specific). The sum of all free generated WO Prop follows the mult quantity. Firm WOs Fixed WOs and former non executable quantities may not follow the mult qty. The same is true for WOs which are restricted by a capacity.

The PropSch of 115 ( not a multiple of 25) units on 01/05/98 is caused by a firm order.

B1 PRODPART\_1 End Production Capa On M L3 Cost 0.00 SN no  
 Froz 0 Ovd CO 0 Reord 1 Min 0 Mult 25 Wos 0.00 chck no PTime 2 BTO no

BS	Period	IdSch	PropSch	Exec	NonExec	Firm	Expected	Dem	FGI	TDev	Act Wos	WvoProp
1	01/02/98	25	25	0	25	0	0	21	-11	-11	-0.40	0
1	01/05/98	125	115	0	140	40	0	120	-131	-131	-0.20	0
1	01/06/98	25	25	165	0	0	0	20	14	14	0	125
1	01/07/98	50	25	25	0	0	50	70	19	19	0	25
1	01/08/98	25	25	25	0	0	0	20	24	24	0.20	25
1	01/09/98	25	0	0	0	0	0	21	3	3	0	0
1	01/12/98	175	175	175	0	0	0	170	8	8	0	175

Part Data  
 Leadt: 2  
 Usage: 0  
 Min Qty: 0  
 Mult Qty: 25.0  
 Max Qty: 0  
 Reorder: 0

Controller Depot ☒ Part ☐ Family  
 Days Weeks Months  
 99 0 99  
 Retrieve Pegging **WoList** ExpList

**Workorder List [B1, PRODPART\_1]**  
 Depot: B1 Part: PRODPART\_1

Needed	Proposed	Exec	Late	Order Qty	Qty	CO	FC	Rest	Status
01/08/98	01/08/98	01/08/98	0	1	1	0	1	0	Free
01/09/98	01/08/98	01/08/98	0	21	21	0	21	0	Free
01/12/98	01/08/98	01/08/98	0	3	3	3	0	0	Free

The WoList shows all executable work orders for the highlighted period.  
 The individual does not follow the mult quantity rule but the sum of Proposed WOs (with the exeptions mentioned above).

## Max Qty

Max quantities can be set in 'Part Data default' (Depot specific). Max qtys are only taken into account for production parts. Max qty is not meant as a restriction of the daily output quantity. It only limits the lot size of a work order. If the demand exceeds the maximum lot size further lots can be scheduled.

B1 PRODPART\_1 End-Production Capa 10 OH 10 IN 0 LS 0 Cost 0.00 BN no

Froz 0 Ovd CO 0 Reord 1 Min 0 Mult 1 Wos 0.00 chck no PTime 2 BTO no

BS	Period	IdSch	PropSch	Exec	NonExec	Firm	Expected	Dem	FGI	TDev	Act Wos	WoProp
1	01/02/98	11	11	0	11	0	0	21	-11	-11	-0.40	0
1	01/05/98	120	120	0	131	40	0	120	-131	-131	-0.20	0
1	01/06/98	20	20	151	0	0	0	20	0	0	0	111
1	01/07/98	70	20	20	0	0	50	70	0	0	0	20
1	01/08/98	20	20	20	0	0	0	20	0	0	0	20
1	01/09/98	21	21	21	0	0	0	21	0	0	0	21
1	01/12/98	170	170	170	0	0	0	170	0	0	0	170

**Part Data**

Lead: 2

Usage: 0

Min Qty: 0

Mult Qty: 0

**Max Qty: 50.0**

Reorder: 0

Controller Depot ☒ Part ☐ Family Days 99 Weeks 0 Months 99

Retrieve Pegging WoList Explist

**Workorder List [B1, PRODPART\_1]**

Depot: B1 Part: PRODPART\_1

Needed	Proposed	Exec	Late	Order Qty	Qty	CO	FC	Rest	Status
01/12/98	01/12/98	01/12/98	0	50	50	50	0	0	Free
01/12/98	01/12/98	01/12/98	0	50	50	50	0	0	Free
01/12/98	01/12/98	01/12/98	0	50	50	50	0	0	Free
01/12/98	01/12/98	01/12/98	0	20	20	0	20	0	Free

In the example the demand of 170 units (150 CO + 20 FC) is broken down into 3 lots of 50 for the CO and the FC quantity.

## Reorder I - coordination period

1998 /
J
Mon
Tue
Wed
Thu
Fri
Sat
Sun
Mon
Tue
Wed
Thu
Fri
Sat
Sun
Mon
Tue
Wed
Thu
Fri
Sat
Sun

The Reordering can be set in 'Part Data default' (Depot specific). There are two modes of reordering available in MPS. One the definition over a coordination period, where the reorder may happen after a defined number of working days (not calendar days) and two the order cycle where working and non working days are taken into account.

Froz  0 Ovd CO  0 Reord  3 Min  0 Mult  1 Wos  0.00 chck  no PTime  2 BTO  no

BS	Period	IdSch	PropSch	Exec	NonExec	Firm	Expected	Dem	FGI	TDev	Act Wos	WoProp
1	01/02/98	11	111	0	111	0	0	21	-11	-11	-0.40	0
1	01/05/98	120	40	0	151	40	0	120	-131	-131	-0.20	0
1	01/06/98	20	0	151	0	0	0	20	0	0	0	111
1	01/07/98	70	61	61	0	0	50	70	41	41	0.40	61
1	01/08/98	20	0	0	0	0	0	20	21	21	0.20	0
1	01/09/98	21	0	0	0	0	0	21	0	0	0	0
1	01/12/98	170	180	180	0	0	0	170	10	10	0	180
1	01/13/98	20	30	30	0	30	0	20	20	20	0.20	0
1	01/14/98	20	0	0	0	0	0	20	0	0	0	0
1	01/15/98	20	161	161	0	0	0	20	141	141	0.40	161
1	01/16/98	121	0	0	0	0	0	121	20	20	0.20	0

**Part Data**

Lead:  2

Usage:  0

Min Qty:  0

Mult Qty:  0

Max Qty:  0

Reorder:  3

**Workorder List [B1, PRODPART\_1]**

Depot:  B1 Part:  PRODPART\_1

Needed	Proposed	Exec	Late	Order Qty	Qty	Status
01/07/98	01/07/98	01/07/98	0	20	20	Free
01/08/98	01/07/98	01/07/98	0	20	20	Free
01/09/98	01/07/98	01/07/98	0	21	21	Free

In the above example you can see, that proposals are generated every 3 days. The exception are the 111 units on 01/06/98. But these result from postponed WOs, where the corresponding demand is on 01/02/98.

The WoList shows that Needed quantities of the next 3 working days are executed together on 01/07/98.

## Reorder II - order cycle

1998 /
J
Mon
Tue
Wed
Thu
Fri
Sat
Sun
Mon
Tue
Wed
Thu
Fri
Sat
Sun
Mon
Tue
Wed
Thu
Fri
Sat
Sun

The order cycle is based on calendar days. In Part Data Default the parameters for the order cycle can be set.

B1	PRODPART_1	End-Production	Capa		OH	10	IN	0	LS	0	Cost	0.00	BN	no	
Froz	0	Ovd CO	0	Reord	D 3 1998-01-05	Min	0	Mult	1	Wos	0.00	chck	no	PTime	2
BTO	no														

BS	Period	IdSch	PropSch	Exec	NonExec	Firm	Expected	Dem	FGI	TDev	Act Wos	WwProp
1	01/02/98	11	0	0	0	0	0	21	-11	-11	-0.40	0
1	01/05/98	120	171	0	171	40	0	120	-131	-131	-0.20	0
1	01/06/98	20	0	171	0	0	0	20	20	20	0	131
1	01/07/98	70	0	0	0	0	50	70	0	0	0	0
1	01/08/98	20	20	20	0	0	0	20	0	0	0	20
1	01/09/98	21	191	191	0	0	0	21	170	170	0.20	191
1	01/12/98	170	0	0	0	0	0	170	0	0	0	0
1	01/13/98	20	30	30	0	30	0	20	10	10	0	0
1	01/14/98	20	30	30	0	0	0	20	20	20	0.20	30
1	01/15/98	20	0	0	0	0	0	20	0	0	0	0
1	01/16/98	121	141	141	0	0	0	121	20	20	0.20	141

Part Data	
Lead:	2
Usage:	0
Min Qty:	0
Mult Qty:	0
Max Qty:	0
Reorder:	D 3 1998-01-05

A fixed order cycle is defined as **Period** (D<sub>ay</sub> or M<sub>onth</sub>), **Cycle** (periods between two proposals) and **Offset** (earliest date for proposal: YYYY-MM-DD). If a order would be placed on a non working day, it is routed to the first working day prior to the day scheduled. Days like this are marked with a red box in the above example.

In case off missing material the offset date would be ignored to clear the shortage situation as soon as possible (01/07/1998).

Examples:

D 7 1998-01-02 stands for Fridays every week

M 1 1998-01-15 stands for the 15th every month.



## Frozen Period

Frozen defines a number of working days where there are no WOs from free WO Proposals. Frozen can be set in 'Part Data default' or 'Part Data Depot specifics'.

B1	PRODPART_1	End-Production	Capa		OH	10	IN	0	LS	0	Cost	0.00	BN	no			
Froz	5	Ovd CO	0	Reord	1	Min	0	Mult	1	Wos	0.00	chk	yes	PTime	2	BTO	no

BS	Period	IdSch	PropSch	Exec	NonExec	Firm	Expected	Dem	FGI	TDev	Act Wos	WoProp
1	01/02/98	11	11	0	11	0	0	21	-11	-11	-1.00	0
1	01/05/98	120	120	0	131	40	0	120	-131	-131	-0.80	0
1	01/06/98	20	20	40	111	0	0	20	-111	-111	-0.60	0
1	01/07/98	70	20	0	131	0	50	70	-131	-131	-0.40	0
1	01/08/98	20	20	0	151	0	0	20	-151	-151	-0.20	0
1	01/09/98	21	21	172	0	0	0	21	0	0	0	172
1	01/12/98	170	170	170	0	0	0	170	0	0	0	170

Part Data	
Contr:	
P-Line:	
Vend:	
Supplier:	
Depot:	B1
Frozen:	5

In the example the Exec column only contains the WO from the firm WO (40) and could contain fixed WOs. Free generated WO Proposals are placed on the first day after the frozen period. The workorder list below shows the status of the workorders.

Workorder List [B1, PRODPART_1]							
Depot: B1		Part: PRODPART_1					
Needed	Proposed	Exec	Late	Order Qty	Qty	Status	
01/05/98	01/05/98	01/06/98	1	30	40	Firm	
01/07/98	01/06/98	01/09/98	3	20	20	Free	

## Weeks of Supply (Wos)

**Weeks of supply** represent a dynamic inventory goal. The target inventory level ( $T_{(target)} - FGI$ ) fluctuates to cover the demand for a defined number of days (1 day = 0.2 weeks).

**Wos** can be set in 'Part Data default' or 'Part Data Weeks of Supply'

Part Data [PRODPART\_1] End-Production Capa On ☐ Ls ☐ Cost ☐ B1 ☐ no  
Froz ☐ Ovd CO ☐ Reord 1 Min ☐ Mult ☐ 1 Wos  0.00 chck yes PTime 2 BTO no

Part Data  
Std Cost:  0  
Wos:  0.6  
Min Inv:  0

BS	Period	IdSch	PropSch	Exec	NonExec	Firm	Expected	Dem	FGI	TDev	Act Wos	WoProp
1	01/02/98	262	262	0	262	0	0	21	-11	-262	-0.40	0
1	01/05/98	170	170	0	432	40	0	120	-131	-432	-0.20	0
1	01/06/98	20	20	0	452	0	0	20	301	0	1.00	412
1	01/07/98	20	0	0	0	0	50	70	281	30	1.20	0
1	01/08/98	20	0	0	0	0	0	20	261	10	1.00	0
1	01/09/98	121	111	111	0	0	0	21	351	0	1.00	111
1	01/12/98	20	20	20	0	0	0	170	201	0	1.00	20

Part Data [PRODPART\_1]

Depot	Part	Month	Wos	Min Inv
B1	PRODPART_1	Jan	1.0	0

BS	Period	IdSch	CO	SFC	Dem	PrimDem	SecDem	Ideal FGI	WoST	T-FGI	Addtl.Dmd
1	01/02/98	262	0	21	21	21	0	251	1.00	251	0
1	01/05/98	170	100	20	120	120	0	301	1.00	301	0
1	01/06/98	20	0	20	20	20	0	301	1.00	301	0
1	01/07/98	20	50	20	70	70	0	251	1.00	251	0
1	01/08/98	20	0	20	20	20	0	251	1.00	251	0
1	01/09/98	121	0	21	21	21	0	351	1.00	351	0
1	01/12/98	20	150	20	170	170	0	201	1.00	201	0
1	01/13/98	20	0	20	20	20	0	201	1.00	201	0
1	01/14/98	20	0	20	20	20	0	201	1.00	201	0
1	01/15/98	20	0	20	20	20	0	201	1.00	201	0
1	01/16/98	17	100	21	121	121	0	97	1.00	97	0
1	01/19/98	17	0	20	20	20	0	94	1.00	94	0

One Wos means that the Target-FGI for a period covers the demand for the next 5 working days.

## Min Inventory (Min Inv)

**Min Inv** represents a static inventory goal. Likewise the Target-FGI is a constant value in the Ideal Schedule Development window. **Min Inv** can be set in 'Part Data default' or 'Part Data Weeks of Supply'.

B1	PRODPART_1	End-Production	Capa		OH	10	IN	0	LS	0	Cost	0.00	BN	no			
Froz	0	Ovd CO	0	Reord	1	Min	0	Mult	1	Wos	0.00	chck		PTime	2	BTO	no

BS	Period	IdSch	PropSch	Exec	NonExec	Firm	Expected	Dem	FGI	TDev	Act Wos	WoProp
1	01/02/98	111	111	0	111	0	0	21	-11	-111	-0.40	0
1	01/05/98	120	120	0	231	40	0	120	-131	-231	-0.20	0
1	01/06/98	20	20	251	0	0	0	20	-100	0	0.40	211
1	01/07/98	70	20	20	0	0	-50	70	100	0	0.40	20
1	01/08/98	20	20	20	0	0	0	20	100	0	0.20	20
1	01/09/98	21	21	21	0	0	0	21	100	0	0	21
1	01/12/98	170	170	170	0	0	0	170	100	0	0.60	170

Part Data	
Std Cost:	0
Wos:	0
Min Inv:	100

BS	Period	IdSch	CO	SFC	Dem	PrimDem	SecDem	Ideal FGI	WoST	T-FGI	Addtl.Dmd
1	01/02/98	111	0	21	21	21	0	100	0	100	0
1	01/05/98	120	100	20	120	120	0	100	0	100	0
1	01/06/98	20	0	20	20	20	0	100	0	100	0
1	01/07/98	70	50	20	70	70	0	100	0	100	0

## WO Proposals precondition

The screenshot illustrates the configuration for WO Proposals across three windows:

- Parameter Window:** A table of system parameters. The 'WO\_DEFAULT\_WEEKS' parameter is set to 4, and 'WO\_SELECTION' is set to 'weekly'. These parameters are highlighted with orange boxes.
- Part Data Window:** A list of flags. The 'Generate Proposals' flag is checked (marked with a red circle and arrow 1), and the 'Send Proposals' flag is unchecked (marked with a red circle and arrow 2).
- WO Proposals Window:** A window showing the results of the WO Proposals calculation. The 'Start Date' is 01/01/98, 'Weeks' is 4, and 'Window' is 5. The table below the header shows 'no WO Proposals displayed'.

Depot	Part	Description	Capacity	Line	Code	Prop Date	Exec Date	Qty	Status	Flag	Release Date	Co Category
no WO Proposals displayed												

Default parameters in the WO Proposals planning grid are set in System Parameters.

1. With the '**Generate Proposals**' flag checked, WPO Proposals are calculated by Tec VEP and displayed in the production window.
2. Only if the '**Send Proposal**' flag is checked the proposals from the production screen are display in the '**WO Proposals**' window.

The screenshot displays the "WO Proposals" application window. On the left is a vertical calendar for June 1998, with dates 1 through 18 visible. The main area contains a form at the top for filtering proposals by Controller, Depot, Capacity, Part/Family, Start Date (01/01/98), Weeks (4), and Window (5). Below the form are three buttons: Retrieve, ProgPlan, and Release.

The first table, titled "WO Proposals", lists individual work orders with columns: Depot, Part, Description, Capacity, Line, Code, Prop Date, Exec Date, Qty, Status, Flag, Release Date, and Co Category. It shows five entries for B1 PRODPART\_1 End-Production. The first two rows have their "Flag" boxes checked, indicating they are pre-checked automatically.

The second table provides a summary view with columns: BS, Period, IdSch, PropSch, Exec, NonExec, Firm, Expected, Dem, FGI, TDev, Act Wos, and WoProp. It lists six periods from 01/02/98 to 01/12/98, showing the number of proposed and executed work orders for each period.

A red dashed arrow points from the "Flag" column of the first table to the explanatory text on the right.

WO Proposals for Prodpa  
 out of the next 5 working  
 are pre-checked automa

All WO Proposals for a depot, a supplier, a part or family during the next **WO\_DEFAULT\_WEEKS** are displayed in the WO Proposals window. The first **WO\_TRANS\_WINDOW** periods of WO Proposals (outside a frozen period) are pre-checked automatically in the WO Proposals window.

- 37 / 48

## Releasing WO Proposals (manually)

There are three different status for WO Proposals in Tec VEP - FREE, FIXED, RELEASED. A free WO is proposed by Tec VEP. All WOs with a release flag which are not manually released during the day will be released automatically during the nightly batch cycle (if auto-release is enabled).

Start Date: 01/01/98 Weeks: 4 Window: 5

All: ☐ None ☐ All

Retrieve ProdPlan Release

Date: 07/07/98 Page: 1 of 2

Depot	Part	Line	Code	Prop Date	Exec Date	Qty	Status	Flag	Release Date
B1	PRODPART_1			01/02/98	01/06/98	111	Free	<input checked="" type="checkbox"/>	
B1	PRODPART_1			01/07/98	01/07/98	61	Free	<input type="checkbox"/>	
B1	PRODPART_1			01/12/98	01/12/98	180	Free	<input type="checkbox"/>	
B1	PRODPART_1			01/15/98	01/15/98	161	Free	<input type="checkbox"/>	
B1	PRODPART_1			01/20/98	01/20/98	60	Free	<input type="checkbox"/>	

Date: 07/07/98 Page: 1 of 2

Depot	Part	Line	Code	Prop Date	Exec Date	Qty	Status	Flag	Release Date
B1	PRODPART_1			01/02/98	01/06/98	111	Fix	<input checked="" type="checkbox"/>	07/07/98 17:18
B1	PRODPART_1			01/07/98	01/07/98	61	Free	<input checked="" type="checkbox"/>	
B1	PRODPART_1			01/12/98	01/12/98	180	Free	<input type="checkbox"/>	
B1	PRODPART_1			01/15/98	01/15/98	161	Free	<input type="checkbox"/>	
B1	PRODPART_1			01/20/98	01/20/98	60	Free	<input type="checkbox"/>	

click 'Release-button'

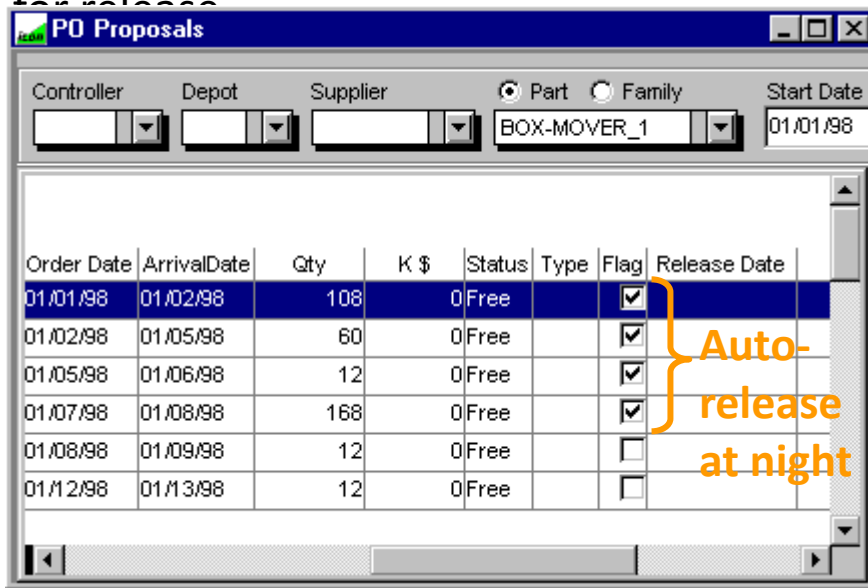
Clicking the 'Release button' writes all checked WOs to the WO\_FILE which triggers a work order in the execution system. This can **not be reverted** by the planner any more. This WO is manually unchecked (inside WO\_TRANS\_WINDOW).

The 'Release Date' marks a already released WO.

Manually unchecked WOs inside the WO\_TRANS\_WINDOW get checked again after the release.

## Releasing WO Proposals (automatically)

The automatic WO Proposal release cycle works in two steps. At day number one (01/01/98) the planner looks at the WO Proposal window. Each WO Proposal within the WO\_TRANS\_WINDOW are pre-checked for release.



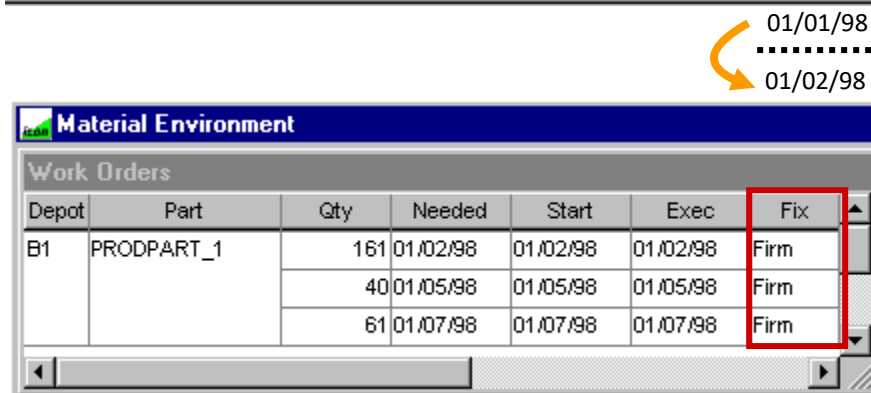
Order Date	ArrivalDate	Qty	K \$	Status	Type	Flag	Release Date
01/01/98	01/02/98	108	0	Free		<input checked="" type="checkbox"/>	
01/02/98	01/05/98	60	0	Free		<input checked="" type="checkbox"/>	
01/05/98	01/06/98	12	0	Free		<input checked="" type="checkbox"/>	
01/07/98	01/08/98	168	0	Free		<input checked="" type="checkbox"/>	
01/08/98	01/09/98	12	0	Free		<input type="checkbox"/>	
01/12/98	01/13/98	12	0	Free		<input type="checkbox"/>	

All checked WOs are automatically released during the nightly batch cycle.

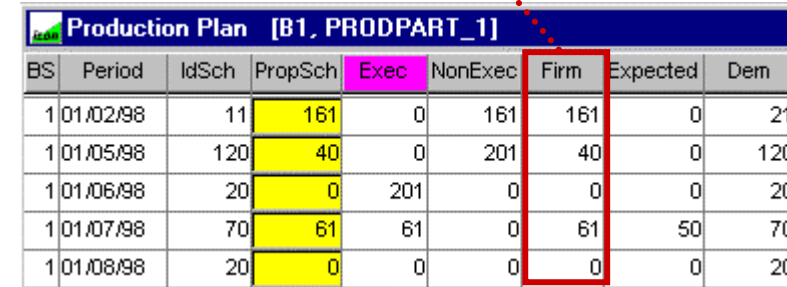
This means all released WO Proposals appear in the

Material Environment with the status **firm** and

as **firm** in the Production screen



Depot	Part	Qty	Needed	Start	Exec	Fix
B1	PRODPART_1	161	01/02/98	01/02/98	01/02/98	Firm
		40	01/05/98	01/05/98	01/05/98	Firm
		61	01/07/98	01/07/98	01/07/98	Firm



BS	Period	IdSch	PropSch	Exec	NonExec	Firm	Expected	Dem
1	01/02/98	11	161	0	161	161	0	21
1	01/05/98	120	40	0	201	40	0	120
1	01/06/98	20	0	201	0	0	0	20
1	01/07/98	70	61	61	0	61	50	70
1	01/08/98	20	0	0	0	0	0	20