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Replenishment Lead Time Monitor



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1 Replenishment Lead Time Monitor

Improve your logistics planning and use correct replenishment lead times for all your materials. The **replenishment lead time monitor** helps you to determine and propagate realistic replenishment lead times quickly.

The main functions of this SCM Consulting Solution are:

- Determination of historical planned delivery times, in-house production times, and total replenishment lead times
- Mass maintenance of times in info records, contracts, delivery schedules, and the material master
- Simulative scheduling of large orders ("big deal scenario")

You can also use the comprehensive functions. These include the following functionalities:

- Measures and resubmissions
- Comment function
- Individual material groups
- Alerts
- Formula editor for creating your own formulas You use the formula editor to create your own formulas to calculate your own key figures. The formulas can be used in all SCM consulting solutions.

In addition, the following SCM Consulting Solutions are part of the comprehensive functions:

- Material master update
- Enhanced Material Master View
- Material Document Analysis
- Excel Upload/Download
- Flexible Material Master Update

The **comprehensive functions** consist of various functions that can make your work with the **SCM Consulting Solutions** even more effective. The material master update allows you to save data in standard SAP fields and fields of the **enhanced material master view**. You can edit the material master data directly from the results list of your SCM Consulting Solutions. You can use the **enhanced material master view** to access the material master data fields of the **SCM Consulting Solutions**. You can use **material document aggregation** to create customized consumption and inventory histories that you can use for the analyses in the **MRP monitor**, **inventory controlling cockpit**, and **safety stock simulation**. The **stock development** shows you the current stock values and provides you with a variety of aggregation options.

i Note

Please note that when executing **SCM Consulting Solutions**, you must enter the prefix */n/SAPLOM/* before each transaction.

For this SCM Consulting Solution, the following note exists: 1341571

You can create error messages under this component: XX-PROJ-CON-WBZ

Related Information

Documentation on the **comprehensive functions** Overview of **SCM Consulting Solutions**

1.1 Definition of Replenishment Lead Time

Total Replenishment Lead Time:

The total replenishment lead time is the time required to make the product fully available again (that is, after all BOM levels have been procured or produced). It is not calculated by the system. Instead, it is specified in this field as the sum of the in-house production time(s) and/or the planned delivery time(s) of the longest production path.

This time is necessary if the availability check taking the replenishment lead time into account is to be carried out for materials produced in-house.

In the availability check with replenishment lead time, the system checks only within the replenishment lead time to determine whether sufficient receipt quantities and stock are available to fulfill demand. Outside the replenishment lead time, the system assumes that a sufficient quantity of the material is again available.

In this case, it is therefore usually necessary to map the total replenishment lead time of the product with all BOM levels as the replenishment lead time.

Use

- If the availability check with replenishment lead time is performed, there are the following options for materials produced in-house:
- The Total replenishment lead time field is maintained
- The time maintained in this field is then used for the availability check.
- The Total replenishment lead time field is not maintained
- The system then reads the in-house production time and, if available, the goods receipt processing time, and interprets the sum of both times as the replenishment lead time for the availability check.

i Note

For externally procured materials, it does not make sense to maintain the *Total replenishment lead time* field. For external procurement, the sum of the purchasing processing time, planned delivery time, and goods receipt is always interpreted as the replenishment lead time for the availability check with replenishment lead time.

Therefore, not only the material-specific BOM must be exploded. The components in the BOM must be exploded again until the lowest BOM level of the structure is finally reached. However, as mentioned above, the BOM explosion that makes sense for determining the total replenishment lead time still depends on the stocking level.



The total replenishment lead time is used in the availability check to yield a confirmation date depending on the Customizing settings. It is possible that all requirements that lie outside the replenishment lead time must be confirmed automatically.

The total replenishment lead time is the time required to make the product fully available again (that is, after all BOM levels have been procured or produced).

Total replenishment lead time = sum of in-house production time(s) and/or the planned delivery time(s) of the longest production path



Graphic for Replenishment Lead Time

If the replenishment lead time is not maintained, the availability check with replenishment lead time (Customizing) uses the sum of the in-house production and goods receipt processing time.

For externally procured materials, the sum of the purchasing department processing time, planned delivery time and goods receipt processing time is used. It is not necessary to maintain the total replenishment lead time field.

→ Remember

It is assumed that the requirements outside the total replenishment lead time can still be met by initiating the production or the procurement process. If sufficient warehouse stock is always kept at a particular BOM level (for example, through systematic preplanning), it can be assumed that the timeframe for procuring components below the stocking level does not have to be considered in the availability check.

The selection includes the option of restricting the depth of the BOM explosion.

2 Selection

The selection is divided into seven tabs:

- General settings
- External procurement
- Inhouse production
- Multilevel RLT
- Simulation
- Upload Planned Delivery Time
- Result

These are described in the following sections.

i Note

As with the standard SAP ERP system, you have the option of saving frequently used selections as variants and reloading them.

2.1 General Settings Tab

The following sections describe the general selection options.

Related Information

Scope of Analysis [page 9]

2.1.1 Mode of Analysis

Analysis Mode		
 External procurement 	OIn-House Production	O Multilevel RLT
 Simulation 	OUpload Planned Deliver	y Time

The analysis mode defines the type of analysis you want to perform.

- External procurement analyzes materials with the procurement type external procurement
- In-house production analyzes materials with the procurement type in-house production
- Multilevel RLT calculates the total replenishment lead time and the decoupled replenishment lead time based on master data

- Simulation indicates the feasibility of a simulated demand
- Upload planned delivery time enables external planned delivery times to be uploaded to the SAP system

2.1.2 Period of Analysis

This is where you specify which period and therefore which documents (production orders, purchase orders, and so on) are to be used for the analysis.

Analysis Period	
Date	to

2.1.3 Analysis Level

Analysis Level			
• Plant	O MRP Area		

The Analysis Level selection only appears in the External Procurement analysis mode. This where you define whether the planned delivery times are to be determined at plant or MRP area level.

2.1.4 Scope of Analysis

In the **Scope of Analysis** area, you select which materials are to be analyzed. Only materials that match the analysis mode are included in the analysis.

Scope of Analysis		
Material	to	
Material Type	to	<u></u>
Plant 1000		
Special procurement		
MRP Controller	to	<u></u>
MRP group	to	<u></u>
Plant-sp.matl status	to	<u></u>
Individual material group		
$\hfill\square$ Only foreign components. Specified material is head of bom		
SCM-CS-Enhanced Mater Master View		
Classification		
ABC(D)-Indicator	to	
EFG-Indicator	to	
HIJ(K) Indicator	to	<u></u>
LMN-Indicator	to	<u></u>
PQR-Indicator	to	
UVW-Indicator	to	
XYZ-Indicator	to	<u></u>
KSTX(N) Indicator	to	
HIJ(K) Indicator	to to to to to to to	

2.1.5 Conversion

Settings for Converting Calendar and Working Days

To calculate replenishment lead times, it is necessary to convert some master data into calendar or working days. In this area, you can define the number of working days per week. The default setting is five working days per week.

2.2 External Procurement Tab

Vendor Vendor Vendors Vendor Vendors V	General settings External procurement	In-House Production				
Vendor to						
Only consider Regular Vendor(Inforec.) Parchasing Document Contract runnher Ito Parchasing group Parchasing group Item Category in PO Only Mat. with Delv. Complete Only Mat. with Delv. Complete Only Mat. with Delv. Complete Only Mat. with State and State Stat. delvery date Delveray date Stat. delvery date Delveray date Stat. delvery date Only Mat. with % Deviation of PLdeLTme from Average PLdeLTme >= Y Calc. accelerated RLT (SCM-Tab) @ Nimmum @ Namum @ Consider GR Tme Pience delvery time on percentie-Meth Treshold % Calc. accelerated RLT (SCM-Tab) @ Nimmum @ Namum @ Namum @ Consider GR Tme Delveray Bart @ Consider GR Tme Delveray Bart @ Consider GR Tme Delveray Bart @ Consider GR Tme @ Delveray Bart @ Consider GR Tme @ Consider GR Tme Delveray Bart @ Consider GR Tme @ Delveray Bart @ Delveray Bart @ Delveray Bart @ Consider GR Tme @ Delveray Bart @ Deveray Bart @ Deveray Bart @ Deveray Bart <	Vendor		to			
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Let deviation in days upper bound	Let deviation in days lower bound	,, and				
	Let deviation in days upper bound					

External Procurement Tab

On the *External Procurement* tab, you specify procurement-type-dependent parameters and other criteria that are relevant for purchasing.

Related Information

MAPE (mean absolute percentage error) [page 53] MAD (Mean Absolute Deviation) [page 54] Appendix [page 53] Outlier Correction [page 28] Documentation of **SCM Consulting Solution comprehensive functions**

2.2.1 Display

Display
Display scheduling agreement
Show also open purchase orders
Materials without supplier
Show Materials without Orders
Only Mat. with % Deviation of Pl.del. Time from Average Pl.del. Time >=
Only Materials used in BOM (Low-Level Code > 0)
Show external planned delivery time

In the *Display* area, you can specify which materials are to be displayed in the analysis. You can use the function *Only Materials with % Variance* >= to restrict the analysis to materials for which the measured planned delivery time differs from the planned delivery time in the material master by the selected percentage value. The function *Display External Planned Delivery Times* enables you to display the planned delivery times from the analysis mode *Upload Planned Delivery Time*. For more information, see Upload Planned Delivery Time Tab [page 20].

The Only Materials with External Planned Delivery Times function restricts the display to materials for which a planned delivery time has been previously uploaded via Excel.

Related Information

Upload Planned Delivery Time Tab [page 20]

2.2.2 Documents

In the **Documents** area, you can define which documents are to be used for the analysis.

Documents			
Vendor	to		
Only consider Regular Vendor (Infore	cord)		
Purchasing Document	to		<u> </u>
Contract number	to		<u> </u>
Purchasing Info Rec.	to		<u></u>
Purch. Organization	to		<u> </u>
Purchasing group	to		<u> </u>
Item Category in PO			
Only purchase orders with final delive	ry		
Exclude Purchase Orders (Movement	Type defined in Table /saple	om/RLT_EXCL)	
🗌 Analyze Stocktransfer (without Purch	asing inforecord)		
Delivering Plant	to		<u></u>
Compare and filter release date with	document date (p.o.)		
Tolerance [days]			
Requested delivery date			
 Delivery date 			
O Advance Shipment Notification			
 Stat. delivery date 			
Mapping order item			
Add Purchase Order Position to Fram	e Contract		
Add Purchase Order Position to Information	ecord		

If you have set a restriction via the purchasing group, only purchase orders are selected whose headers meet the selection criteria. The monitor does not check the purchasing group of the material master record (purchasing view).

If you have activated the option **Purchase Orders with Delivery Completed Indicator**, only completed purchase orders are selected.

In table /SAPLOM/RLT_EXCL, you can use transaction /SAPLOM/RLT_EXC to define movement types that are to be excluded from the analysis. The option **Exclude Purchase Order (movement type table /SAPLOM/ RLT_EXCL)** activates filtering by purchase orders for these movement types.

You can use the checkbox **Analyze Stock Transport Order (Without Info Record)** to activate the evaluation of purchase orders with field "Supplying Plant" (EKKO-RESW) filled. In this case, the RLT monitor lists all purchase orders where the Supplier field (EKKO-LIFNR) and the Info Record field are empty at the level of the purchase order item.

You use the radio buttons **Delivery Date**, **Shipping Notification** and **Statistical Delivery Date** to define which date from the purchase order is to be used to calculate the replenishment lead time.

You can also define whether the purchase order item is to be assigned to the outline agreement or to the info record.

2.2.3 Planned Delivery Time

Planned Delivery Time						
Planned Deliv. Time on Percentile Basis: Percentile-Method -Threshold						
Execute outlier control		_				
OMedian	 Standarddeviation from Average 					
	Percentage Variance	-				
Outlier days lower bound						
Outlier days upper bound						

In the Planned Delivery Time area, you can define the threshold value percentile.

Example:

If there are three purchase orders with a planned delivery time of 250 days, 15 days and 1 day, the 50th percentile is the purchase order with 15 days. 50% of purchase orders have a planned delivery time shorter than 15 days and 50% of purchase orders have a longer planned delivery time.

Outlier correction allows you to correct outliers to the value of the upper or lower value. For details on this, see the Outlier correction section.

2.2.4 Accelerated RLT

Accelerated RLT						
✓ Calculate accelerated RLT (SCM-Tab)						
Minimum Maximum • Average	O Percentile-Meth Threshold	51 % O Fixed Value:	23			
Consider Processing Time (Material Master)	Consider purchasi	ng processing time				

If you want to calculate the **accelerated RLT**, you can make the relevant settings in this area. The determined accelerated RLT is displayed in the result and can be written to the enhanced material master view.

2.2.5 Measures

Key Figures			
✓ Compute MAPE & MAD ✓ Compute Delivery Reliability Tolerance [days] up	ר ل	Tolerance [days] down	

The Delivery Reliability section contains the definition of delivery reliability (Delivery reliability radio button) and details about the calculation.

2.2.6 Alerts

Alerts						

In the **Alerts** area, you can define a deviation in days from the in-house production time in days. As a result, purchase orders for which the variances are too large are flagged with a red traffic light.

2.3 Inhouse Production Tab

On the Inhouse production tab, you can define selection criteria that depend on the procurement type.

Related Information

Color Legend in the ALV Tree [page 32] MAPE (mean absolute percentage error) [page 53] MAD (Mean Absolute Deviation) [page 54]

2.3.1 Display

Display
Do not read any orders
Display open orders (only relev if confirmed order selected)
Display material w/o orders
Only Mat. with % Deviation of Inh.Prod.Time from Average Prod.Time >=

In the Display area, you can change how the result is displayed. The option **Do not read orders** allows you to analyze master data without measuring the actual in-house production times. **Also display open orders** enables you to display production orders that are still open. Materials without orders can be included in the analysis using the option **Also display materials without orders**. You can use the function **Only materials with % variance >=** to restrict the analysis to materials whose measured in-house production time deviates from the in-house production time in the material master by the selected percentage value.

2.3.2 Orders

Orders			
Order Status			
Order		to	
Basic Start Date and basic End Date			
Actual Start Date and End Date			
Scheduled Start and Finish			
Scheduled Start and actual Finish			
ORelease confirmed (FTRMI) - Confirme	ed-End (GETRI)		

In the Orders area, you can select individual orders for analysis based on your order number and order status.

Because the status keys from the monitor must be translated internally via an additional table, individual values or ranges to be excluded cannot be considered:

Order Status		
)rder	to	
Basic St Multiple Selection for Or	der Status	×
O Actual S		
🔘 Schedul		
Schedul Select Single Values	Select Ranges Exclude Single values Exclude Ranges	
O Release		
O. Sin	iii	

You must also define which values you want to use **as the start and end date** for measuring the actual inhouse production time.

2.3.3 In-House Production Time

In-House Froduction Time	
In-House Production Time on Percentile B	asis: Perc Meth Treshold %
Execute Outlier Correction	
OMedian	 Standarddeviation from Average
	Percentage Variance
Allowed deviation in % lower bound	10 Allowed deviation in % upper bound 10
Calculate lot size dependent In-House P Order Quantity Order Quantity (if 0, BOM) Only Material Master (Setup time, Proce Bill of Material Inform. (BOM) Base Quantity	roduction Time based on

The percentile method and outlier correction can be activated in the in-house production time area. For an example of the calculations, see the section Planned Delivery Time, or Outlier Correction.

If you want to view the **lot-size-dependent in-house production time**, set the checkmark accordingly. Three calculation methods are available. The order quantity can be used as a basis if orders are to be read. The second option uses the material master to calculate the times. The third option uses the manually entered quantity.

2.3.4 Accelerated RLT

Accelerated RLT Calculate accelerated RLT (SCM-Tab)	
Minimum Maximum Average Consider Processing Time (Material Master)	O Percentile-Meth Threshold

If you want to calculate the accelerated RLT, you can make the relevant settings in this area. The determined accelerated RLT is displayed in the result and can be written to the enhanced material master view.

2.3.5 Measures

Key Figures					
✓ Compute Delivery Reliability					
Tolerance [days] up	Tolerance [days] down				
Calculate MAPE and MAD					

If you check **MAD and MAPE Calculation**, you can see the mean absolute percent error (MAPE) and mean absolute deviation (MAD) error measures in the result.

The Delivery Reliability section contains the definition of delivery reliability (Calculate delivery reliability radio button) and details about the calculation.

2.3.6 Alerts

Alerts							
☑ Signal Distance Date Basic- or confirmed Dat	s vs Scheduled dates > x day						
Allowed deviation in days lower boun	10						
Allowed deviation in days upper boun	10						

In the Alerts area, you can define a deviation in days from the in-house production time in days. As a result, orders for which the variances are too large are flagged with a red traffic light.

2.4 Multilevel RLT Tab Page

On the Multilevel RLT tab page, you can make settings to calculate the total replenishment lead time or the decoupled replenishment lead time. For this analysis, only the master data is used, no orders or documents.

2.4.1 Procurement type

```
Procurement Type
Handle Components with Procurement Type 'X' as ...

    ... Procurement Type E ( In-house production )

    ... Procurement Type F ( External Procurement )
```

In this section, you can define whether materials with the procurement type "Both Procurement Types" (X) are to be considered as in-house production or external procurement.

If an X material is to be analyzed as externally procured, and if components or orders exist for this material, the system displays these. The times for these subobjects are also displayed but are not included in the calculation of the total RLT or the decoupled RLT.

2.4.2 Bills of Material

In the Bills of Material section, you define which bills of material are to be used for the analysis of multilevel RLTs.

BOMs				
O Full BOM explosion				
Explosion to Level				
BOM Alternative				
BOM Status				
Item Category				
✓ Only Components with Item Status relevant for Production				
Consider Quotation				
Consider Special Procurement Key				
✓ Set calculated times smaller 1 to 1				
Set Time for Material with individual and coll. regmts. = 2 to 0				
only on Component Level, not for Header Materials				

If you want to see a material that has alternative BOMs, but you do not specify an alternative, the first BOM is analyzed. Here, the program responds as if you had selected **alternative BOM** 1.

By checking the **Consider Quotation** checkbox, you determine whether the MARC-USEQU field (usually MRP view) is read. If a value is maintained in the material master, the monitor checks whether there is a valid quota arrangement. A quota arrangement is valid if it lies within the analysis period of the replenishment lead time monitor. The system also checks whether the procurement indicator 'E' has been maintained in the quota

arrangement. If this is the case, the procurement plant specified in the quota arrangement is determined, and the BOM is re-exploded accordingly.

The quota arrangement takes priority over the special procurement key indicator. This means that the special procurement key maintained for a component is ignored if a quota arrangement indicator has been maintained.

Selecting **consider special procurement key** enables you to control whether a special procurement indicator is to be taken into account during the bill of material explosion. You can, for example, represent cross-plant manufacturing. The special procurement keys 80 and 81 are considered. No logic has been implemented for taking assemblies into consideration. This means that these BOMs can also be exploded, if necessary.

For more information, see the Color Legend section in the ALV tree.

If you have activated the radio button Set time for Mat. with individual and coll. reqmts. = 2 to 0, the materials that have only collective requirements are considered as stocked parts and are not used to calculate the total RLT (the representation of the number of components changes accordingly). An additional BOM explosion is not performed for these materials.

Using the radio button ...only on component level, not for header materials, you disable the aforementioned function at header level. In other words, if a header material is set to coll. rqmts., and this radio button is activated, the dependent quantity indicator is ignored.

2.4.3 Component Filter

When calculating of multilevel replenishment lead times, it is often necessary to exclude some materials from the determination of the longest path. In this section, you can exclude individual materials or groups of materials.

laterial		to		
laterial type		to	<u></u>	
✓ Indicator forced Provisioning				
🔽 No provisioning Indicator				
✓ Stocking according to BOM Attr	ributes			
✓ Provisioning acc. Rule Set				
✓ Provisioning acc. to Requiremen	t Characteristics			
✓ Provisioning acc. to Capacitiy Ch	arachteristics			
Manual Provisioning				
Reorder Point				
Safety Stock				
Component contained in contro	ol cycle (Kanban Part)			
Forecast view exist				
Bulk Material				

Analysis scope inserted or included in the analysis by the BOM explosion can be excluded using the filters.

To do so, you can access indicators in the enhanced material master view.

- Forced Stocking Indicator
- Indicator: No Stocking

- Stocking According to Piece Lists
- Stocking According to Rule Set
- Stocking according to demand characteristics or
- Stocking according to capacity characteristics

You can also filter materials that have a:

- Reorder point
- Safety stock
- Control cycle
- Forecast view, or are:
- Bulk material

In addition, you can use the BAdI /SAPLOM/RLT_CALCULATE to filter materials.

2.4.4 Total Replenishment Lead Time

Total Replenishment Lead Time
Take RLT adjustments into acc.
 Total Duration calculated from Material Orders
Minimum
⊙ Maximum
O Average
O Percentile-Method
+ Duration of Components
OMinimum
Maximum
O Average
O Percentile-Method
Calculate Total Time out of BOM Information
○ Calculate Total Time ouf of singellev. RLT AT
Decouplepoint (only relev. with Badi /SAPLO/RLT_CALCULATE)

The total replenishment lead time and decoupled RLT can be calculated either on the basis of the **master data in the MRP 2 view** or on the basis of the **single-level RLT (WD)**.

If you have activated the option **Master Data in the MRP 2 view**, the goods receipt processing times, planned delivery times, in-house production times, and purchasing department processing times are used. In this case, the total replenishment lead time is always calculated using the longest branch of the BOM.

The option **Calculate Total Duration from Single-Level RLT (WD)** uses the corresponding field in the enhanced material master view to calculate the total replenishment lead time or decoupled RLT.

2.5 Simulation Tab

To perform the simulation, you must enter the following parameters on the selection screen for the simulation:

- Material
- Plant
- MRP area (if applicable)
- Requirement date
- Planned quantity
- Planning scenario
- Requirement type
- Version number independent demand

In the **MRP control parameters** area, you specify the planning parameters that are to be used in long-term planning. The same parameters are available as in transaction MS02.

The results of the simulation are based on the order report from transaction MS04. You can change the display of the results by specifying an **order report profile** in such a way that, for example, the safety stock is available. For more information, see Customizing for the order report (transaction OPPF).

You can use the **Delete Independent Requirements After Simulation** option to delete the created planned independent requirement as soon as you use the Back button to leave the results screen.

2.6 Upload Planned Delivery Time Tab

The **replenishment lead time monitor** offers the option of uploading saved planned delivery times to Excel and comparing them with the calculated delivery times. Enter the Excel file to which data is to be uploaded and saved in the table /saplom/rlt_uplo when the monitor is executed.

Upload stored Planned delivery Time						
Choose Excel-File						

If the SAPLOM table already contains data with the keys vendor, material number, and plant, the planned delivery time is updated.

A maximum of 999 lines are read from the file to be uploaded. You can use 132 characters to specify the path.

To enable the table /saplom/rlt_uplo to be read, you must set up the Excel file to be uploaded as shown in the screenshot.

You also have to format the Vendor column user-specifically (with ten zeroes).

		А	В	С	D		
1		Lieferant	Matnr	Werks	Plifz		
2		00000010	011 100-101	1 1000	3		
3			_				
4	-	Cali	bri - 11	• A* A* 🕎	- % , 🧃	7 H	
5		в	/ ≡ 📖	• (b) • A •	<.0 .00 =a.		
0	,	2			.00 ->.0 ===		
		X	Cut				
9			Сору			-	
1	0	P	Paste				
1	1		– Paste Speci	ial			
1	2		Insert			-	
1	3		Delete				
1	4		Clear Cont	ents			
1	5		Earmat Call	Le .			
1	6		Lounat Cen	12			
Fo	orn	nat Cells					? ×
					1 1		
	N	umber A	lignment i	Font Border	Fill	Protection	
		ategory:		Comolo			
		ieneral Iumber	^	Lieferant			
				Turner			
	Í)ate		000000000			
	F	ime Percentage		hh:mm:ss			
	F	raction		TT.MM.JJJJ hh:	mm		
	i	ext		mm:ss,0			
		pecial Custom		@ [h]:mm:ss			
				* #.##0 €;	-* #.##0€_	-;* "-" €;@	
				* #.##0_€_ * #.##0,00€	-;-* #.##U_U E;-* #.##0	€;*€;@ ,00 €;* "-"?? €;@	. =
				* #.##0,00	€;-* #.##	0,00 _€; _* "-"?? _€;	@
			-	000000000			
	L						Delete
	Type the number format code, using one of the existing codes as a starting point.						
	_						
						ОК	Cancel
	_						

After the external planned delivery times have been uploaded, you can display them in the **external procurement analysis mode** and update the minimum, maximum, or average in the material master.

2.7 Result Tab

On the Result tab, you have the following selection:

• Perform Analysis

- Read Saved Analysis from Database
- Delete Result from Database

RLT Monitor
General External procurement Result
Analysis Result
O Perform Analysis
Business Report (excel download)
Read saved result from database
i i i i i i i i i i i i i i i i i i i
Complete display
O Partial display
As Tree
O Display as table
O Delete result(s) from database
Output Control
✓ Use Tasks / Resubmision

The *Perform Analysis* option provides you with three options: You can output the result in a dialog on the screen (*Display result*). If you want to store the result of the analysis in an Excel file, you can use the report folder function. For more information, see the comprehensive functions documentation, under General Report Folder.

In addition to displaying the result on the screen, you can store it in a database table (*Save Result*). When you save an analysis, in the *Update* area you can specify which fields in the material master record, info record, or contract are to be adjusted in the background. Change documents are written and a log is created for the changes in the material master. This can be evaluated using transaction SLG1 or /SAPLOM/LOG.

Update	
Material Master	
☑ Update Planned Deliv. Time from the following Field:	
✓ Planned Delivery Time	
Single-Stage RLT CD	
Single-Stage RLT WD	
Source Field:	
Minimum OAverage OPercentile-Method	Fixed Value:
Consider Processing Time (Material Maste	2
Outlier Correction	
Update Total Replenishment Lead Time	Г
= Processing time of purchasing	
+ Planned Delivery Time (Material Master PLIFZ) in Workday	
 from Material Master (before doing this analysis) 	
New Value (see above Planned del. "Max, Minto this value:")	
+ Goods Receipt Processing Time	
 From Material Master 	
O other value:	
Update Total RLT Update accelerated RLT Outlier Correction	-
Update MAD RLT	
Update MAPE RLT	
Update decoupled RLT	_
Update source RLT	-
Update Source decoupled RLT ~	-
Info Records	
Update Planned Deliv. Time Outlier Correction	
Minimum Maximum Average	

If you select the option *Import Saved Result from Database*, the data of an analysis is identified using the four database fields:

- User
- Analysis Date
- Time of Analysis
- Analysis Name



Saved analyses can be deleted using the *Delete Result from Database* option.

Delete result(s) from database				
Selection Value				
User		to 📑		
Date		to 📑		
Time	00:00:00	to 00:00:00		
Selection of stored result			×	
Key for Results User Name Curre	ent Date Time	Selection value		
15372RLTDP1218 D036914 18.0	3.2021 15:41:39	TEST	^	
15371WDP1218 D036914 18.0	3.2021 15:41:14	TEST	*	

In the *Output Control* area, you can define a predefined layout, select the display of the result as a tree or table, and read the tasks and resubmissions. If the results are displayed as a table, you can create and display different task objects. In the tree display, only task objects "Material/Plant" can be processed.

Output Control	
Layout	
Display	
 As Tree 	
 Table 	
✓ Use Tasks / Resubmision	

In the *Performance Settings* area, you can activate parallel processing. To do this, you must define a package size and a logon/server group.

Related Information

General Report Folder

3 Results

The following sections describe the result display.

3.1 Result Display: External Procurement

External procurement uses purchase orders and the corresponding goods receipts for the purchase orders to determine the actual planned delivery time.

Hierarchiebene	PIZ	WbZ	GwZ	Menge BME	Wunschdat	. Startdatu	m Enddatu	n Sta	t. Ist	Min.	Max.	Anz.	Dur	Stabw.	V.spät.
🖙 👼 Material SHAMPOO Shampoo Spezial 150ml Men	3	1	4	210,000 ST						0 7	48	3 2	86 41	8,431	D
🗢 🛱 Lieferant 0000020000 Externer Lieferant		1	4	210,000 ST						0 7	48	3 2	66 41	8,431	D
🗢 🕞 Infosatz 5300000373	3	1	4	210,000 ST						0	0	0	0	0,000	D
No. 8000000000000000000000000000000000000		1	4	0,000 ST	16.04.2007	11.04.2007	00.00.0000	offen	D						D
Sector 2000 Sector 3000000000000000000000000000000000000		1	4	100,000 ST	04.06.2007	11.04.2007	30.05.2007	abg.	49						D
🕵 Wareneingang 5000001 601		1	4	100,000 ST			30.05.2007		49						5-
Sector		1	4	10,000 ST	04.06.2007	30.05.2007	16.06.2009	abg.	748						743
<table-of-contents> Wareneingang 5000002291</table-of-contents>		1	4	10,000 ST			15.06.2009		74B						743
Sector State - Sec		1	4	100,000 ST	08.05.2007	04.06.2007	04.06.2007	abg.	D						D
🚰 Wareneingang 5000001605		1	4	100,000 ST			04.06.2007		D						4-

Result Display: External Procurement

Purchasing Info Records:

In the SAP system, there are plant-specific info records and info records without plant reference (central info record). You can initially see purchase orders under the central info record. However, if there is additionally (or only) a plant info record, you see the purchase order under this plant-specific info record.

卧	Info Record F. POrg	Text	Plant	P
	T			
	Material 100-100 Cas	sings		
	Vendor 111 KBB Sch	warze Pi	mpe	
	5300001076 🔲 1000	Stand	1000	00
	Vendor 1000 C.E.B. B	BERLIN		
	5300000138 🔲 1	Stand		00
	5300000138 🔲 1	Stand	1000	DO
	5300000138 🔲 1000	Stand	1000	DO

Screenshot 1 of Purchasing Info Record

Example

You can see the purchase order for vendor 1000 under the central info record. For vendor 2000, there is an info record in addition to the central info record for plant 1000. This is why you see the purchase order under the plant-specific info record. In the **replenishment lead time monitor**, the info record number is followed by the purchasing organization and, in the case of a plant info record, the plant. The purchase order number is followed by a purchase order item number.

Hierarchy level	
🔻 🚾 100-100 - Casings	
Vendor 000001000 C.E.B. BERLIN	
• 🖷 Info record 5300000138 / 1	
Info record 5300000138 / 1000	
· · · · · · ·	

Screenshot of Example

Contracts:

As with the purchasing info records, the contract include both central and plant contracts. As with the info record, purchase orders with reference to a central contract are displayed under the central contract, and purchase orders referencing a plant contract are displayed below the plant contract.

Scheduling Agreement Delivery Schedule Line:

In a scheduling agreement, all schedule lines to be delivered are displayed with their quantity and delivery date. If goods receipts for partial deliveries have been posted, you will see the corresponding quantity below the schedule line. The current schedule line is always read from the *EKET* table.

Hierarchy level	Pdt	Godds-rec. time	RLT	Amount	BUn	Desdeldate	Startdate	Enddate	open	Delay	ls	Min	Max	Amnt	Avg	St.dev	Residue
 Material 100-110 Slug for spiral casing 	1	1	0	3.286	ST							0	67	38	30	31,453	
Supplier 000001003 Gusswerk US				1.254	ST					3		0	53	19	4	12,125	
🔹 🖷 Supplier 0000009999 IDES Liefera				2.032	ST					1		4	67	19	56	21,435	
🕆 🖏 Scheduling agreement 550000	10	1	0	2.008	ST					D		4	67	18	59	19,093	
Sched line 550000137				12	ST	23.09.2010	10.09.20	14.09.2	comp.	9-	4						
 Sched line 550000137 				7	ST	23.09.2010	10.09.20	19.09.2	comp.	4-	9						
 Stock receipt 5000012- 	÷			2	ST			15.09.2		8-	5						0.000
 Stock recept 5000012 				2	ST			17.09.2		6-	7						0.000
 Stock recept 5000012- 	1			3	ST			19.09.2		4-	9						2.000
Sched line 550000137				572	ST	24.09.2010	10.09.20	16.11.2	comp.	53	67						
 Sched line 550000137 				903	ST	24.09.2010	10.09.20	16.11.2	comp.	53	67						
Sched line 550000137				4	ST	24.09.2010	10.09.20	16.11.2	comp.	53	67						
Sched line 550000137				22	ST	24.09.2010	10.09.20	16.11.2	comp.	53	67						

Screenshot for Schedule Lines

Goods receipts are assigned to the relevant records by the number of the purchasing document (EKBE-EBELN). The status is set to Cmpl. (completed) as soon as the quantity of the schedule line can be covered by the goods receipt or by multiple goods receipts, otherwise the status remains open. If a residual quantity remains after this assignment, the system displays this in the Remaining quantity column.

Example

In the above diagram, multiple goods receipts are assigned to the schedule line quantity of 7 pieces (9/23/2010). Of the last 3 pieces delivered, 2 remain; this quantity is displayed as a remaining quantity and is added in the next schedule line.

The columns for outlier correction and error measure calculation appear in the tree display only if the corresponding checkboxes on the selection screen have been checked.

With the pushbutton in the status bar, you can display a graphic. The graphic is displayed in an additional window and compares the maximum, minimum, and average delivery time determined by the **replenishment lead time monitor** with the total of planned delivery time and goods receipt processing time saved in the material master. The x-axis specifies the material numbers; the y-axis specifies the time in days.



This graphical display is possible only if the **replenishment lead time monitor** is executed online. This means the graphic cannot be displayed when saved results are loaded.

3.1.1 Other Examples of Calculations and Database Fields

The delay is calculated from the end date minus the requested date of a purchase order.

Replenishment lead time exit	tern	al procurem	ent											
III 🔁 🖿 🛄														
Hierarchy level	Pdt	Godds-rec. time	RLT	Amount	BUn	Desdeldate	Startdate	Enddate	open	Delay	Is	Min	Max	Amn
 Material 100-110 Slug for spiral casing 	1	1	0	2.032	ST							4	67	
* 🛱 Supplier 0000009999 IDES Liefera				2.032	ST					1		4	67	
🕨 😼 Scheduling agreement 550000	10	1	0	2.008	ST					0		4	67	
 Info record 5300005920 / 100 	10	1	0	24	ST					1		12	12	
 Sector Purchase order 450001724 				0	ST	10.03.2008	28.02.20	00.00.0	open	0				
 Purchase order 450001737 				24	ST	03.12.2010	23.11.20.	05.12.2	comp.	2	12			
• 🕵 Goods receipt 5000012				24	ST			05.12.2		2				
 Sector Purchase order 450001737 				0	ST	03.12.2010	23.11.20	00.00.0	open	0				

The actual time is calculated from the goods receipt date (2/6/2010) minus start date (11/23/2010).

The days are calculated in calendar days. At the scheduling agreement, info record, and outline agreement levels (directly below the vendor), you can see the minimum, maximum, average, standard deviation and number of all lower-level closed purchase orders. Purchase orders that have not been closed are not taken into account.

At the vendor level, you can see all the times (minimum, maximum, and so on) of the lower-level purchase orders.

Example

In the example above, vendor 9999 has 19 purchase orders. Times of one purchase order from the info record and 18 times from purchase orders of the scheduling agreement have been taken into account here.

The times at material level are determined in the same way by calculating all closed purchase orders of all vendors of the relevant material.

Example

In the screenshot above, it is material 100-110.

Replenishment Lead Time Monitor Col- Database Field umn Desired delivery date (depends on selec- EKET-EINDT (delivery date of the schedule line) tion on External procurement tab): EKET-SLFDT (stat. delivery date) EKES-EINDT (confirmed delivery date) Start Date EKKO-AEDAT creation date For scheduling agreements: EKET-BEDAT purchase order date Enddate for purchase order (document **MKPF-BLDAT** date) Enddate booked goods-rec. of schedule Date of the last goods receipt for the purchase order agreement **MKPF-BUDAT**

3.1.2 Tasks and Resubmission Date

If you choose the Set resubmission date button, you can save a date for a material on which the material is to be considered again. You can also maintain specific measures for material. For more information, see the documentation for the **comprehensive functions**

After you have set a resubmission date or created a task, the result view does not update automatically. This means that the resubmission date appears only after the calculations have been performed again, for example.

If you choose the table display in the selection, you can also change the task object.

Related Information

Documentation on the comprehensive functions

3.1.3 Outlier Correction

The following screenshot shows the result of an outlier correction as an example. The outliers are calculated based on the median. The limits are 1 day (lower) and 2 (upper) as in the screenshot of the selection in section .

Hierarchy level	Pdt	5.	P.	Quant. (to be)	Quant. (as is)	BUn	Startdate	Enddate	open	Is	Godds-rec. time	RLT	OutKorrVal	Signal	MedianO	MedianC	tot.	MinOutLOrder	MaxOutl.Order	AVGOUE.	MinOutLCom 1
 Headmaterial P-102 Pump PRECISION 102 	0	0	E	183	10	ST	0				1	0	0	1.001	4.000	13.000	61	3	6	4	12
Production order 000060003672		0 1	E	20	0	ST	15.12.20	21.12.2	comp.	4			4								
 Production order 000060803674 		0 1	E	10	0	ST	12.11.20	16.11.2	comp.	17	1		3		1						
 Production order 000060003675 		0 1	E	10	10	ST	12.11.20	16.11.2	comp.	2			3								
 Section order 000060003676 		0 1	E	10	G	ST	10.12.20	15.12.2	comp.	3			3								
 Production order 000060003677 		0 1	E	10	0	ST	19.12.20	28.12.2	comp.	6			6								
 Service Production order 000060003678 		0 1	E	23	0	ST	24.11.20	02.12.2	comp.	6			6								
 Production order 000100004180 		0 1	E	100	0	ST	19.03.20	09.04.2	comp.	15			6								

Median for Outlier Correction

Example

The median of the orders for the header material is 4 (note yellow border). The actual value for order 60003674 (2 in red frame) to 3 (green frame) is corrected, for example, because the limit the value 4-1 = 3.

The above screenshot shows that a red traffic light (column signal) is set for each corrected value.

The calculation using the standard deviation (sigma) as a replacement for the median is performed in a similar way. In this case, however, the user must set the limit not in days but in percent. The limits are calculated as follows:

Upper limit = average + sigma * percentage from text field for upper limit

Lower limit = average - sigma * percentage from text field for the lower limit

As a result of external procurement, the control is used only on the actual values of closed purchase orders.

Related Information

3.2 Result Display: In-House Production

In the result display, you can see a tree view with multiple lines. In the top row, you can see the result for the material.

For the material, you see the fields in the material master that are important for the replenishment lead times:

- Total replenishment lead time: GWBZ (table field WZEIT)
- In-house production time: In-house production time (table field DZEIT)
- Planned delivery time Plnd. Dely (table field PLIFZ)
- Goods receipt processing time: GR procTme (table field WEBAZ)

In the corresponding columns, the calculated values are listed with regard to the replenishment lead times. For in-house production, this is the *realized in-house production time*; that is, the time-span between the order start and end of confirmation. For the material, these values are displayed aggregated by the orders, meaning that the orders analyzed in total are evaluated over time and the minimum, maximum, average, and percentile are displayed. In addition, the standard deviation is used to determine MAD and MAP statistical measures of dispersion; in other words, key figures that quantify the deviation from the mean.

For each order with goods receipt, you can see the time periods from order start to the end date in the row for the corresponding order. From here, the times are aggregated to the material as described above.

The arrow keys allow you to expand and collapse the data for all materials.

D I I I I I I	1.1.1		1 A A A A A A A A A A A A A A A A A A A
Replenishment le	ead time	in-house	production

III 🚹				
V 🛃 V 👟 V V V V V V V V V V V V V V V V V				
Hierarchy level	Start Date	Enddate	GR ProcTme	Calculated RLT
V - P-100 - Pump PRECISION 100			4	10
 	30.09.2009	02.10.2009	0	3
 	10.09.2009	17.09.2009	0	6
 	21.12.2020	22.12.2020	0	2

The Status field is set to Completed as soon as a start and end date exist for the relevant order.

The columns for outlier correction, error measure calculation, and the lot size-dependent in-house production time appear in the tree structure only if you select the corresponding checkboxes on the selection screen. More information about outlier correction can be found in the appendix.

Delta RI T shows the dif	ference (complete RI	T from material ma	ster – calculated RLT).
Denta MET SHOWS the un		i nominateria ma	Ster calculated REF).

Hierarchy level	DElta TRLT	Calc. RLT	Total replenishment lead time
 4 4 100-100 - Casings 	80-	82	2
 6 000060003745 Production or 	0	12	0
• 🔶 000060004105 Production or	0	57	0
• 🔶 000060004199 Production or	0	33	0
• 🔶 000060004228 Production or	0	15	0
• 🔶 000060004229 Production or	0	15	0
• 🚾 100-110 - Slug for spiral casing	12-	12	0
• 🚾 100-120 - Flat gasket	25-	25	0
🔹 🔟 100-130 - Hexagon head scre	13	2	15

Function of the Delta RLT Column

You can use the H button in the status bar to display a graphic. The graphic is displayed in an additional window and compares the total time determined by the **replenishment lead time monitor** with the total replenishment lead time saved in the material master. The x-axis specifies the material numbers; the y-axis specifies the time in days.



Graphical Display

The data basis for the above graphic is the materials in the evaluation.

This graphical display is possible only with online execution of the **replenishment lead time monitor**. This means the graphic cannot be displayed when saved results are called. The connections between the points also have no significance. They are intended merely to make points more visible.

3.2.1 Calculation of the Values of the "Calc. RLT" Column

The *Total replenishment lead time* column is calculated in different ways depending on the relevant level. There are the following two levels:

 Calculated TRLT at material level = Max. own orders + GR processing time. Before an analysis, you specify via the selection screen whether the maximum, minimum, or the average is to be calculated. (See Inhouse Production Tab [page 14])

Example							
Replenishment lead time in-house production							
📰 🌆 🎉 Set Resubmission Date 🛛 🍀 Maintain Measures							
Change Material Emd04 Image: A line and a line line line and a line and a line line and a lin							
Screenshot of Example							
In the figure above, the total time was determined by the maximum of the orders. The goods receipt processing time is then added, yielding a total of 10 days.							

Calculated TRLT at production order level = end date – start date.
 You choose the fields of the production order that are read as the start and end date (reported, basic, or scheduled) on the selection screen on the Inhouse production tab (see Inhouse Production Tab [page 14]).

3.3 Results Display of Multilevel RLT

3.3.1 Columns for Special Procurement and Quota Arrangement

If you have selected the *consider special procurement key* or *Consider Quotation* checkbox, additional columns are visible on the results screen (*QuotaUsage*, *Spec.proc.type*, *Add. transportation time*):

Hierarchy level	QuotaUsage	SP type	Plant	ad.sp.proc	Calc. RLT	
▼ 😂 400-200-NN -		70	1100	0	54	
• 🔶 000060005790 Production or				0	0	
• 🚾 400-210-NN -			1100	0	10	
• 🚾 400-152-NN -			1100	0	9	
🕨 🚾 100-300TIO - Hollow shaft	4	20	0001	5	53	

Caption Missing

These columns display the quota arrangement indicator or the special procurement key and the additional transportation time of the requesting plant. The requesting plant can be recognized easily by the component above it. Only the header material requires you to know the plant for which the analysis was started.

Example

In the above screenshot, if material 100-300Tio has the quota arrangement indicator 4 and special procurement key 82 in plant 1100.

The plant in the *Plant* column shows the *manufacturing plant* resulting from the quota arrangement or the special procurement key.

A quota arrangement takes priority over the special procurement key.

If a component is procured from a plant via special procurement key or quota arrangement, the system displays an additional transportation time.

Example

In the above case, there are 5 days for the material "100-300TIO". These 5 days are calculated from 3 days planned delivery time + 2 days goods receipt processing time that were entered in Plant 1100.

3.3.2 Color Legend in the ALV Tree

Rows in the tree result screen are highlighted in color depending on the selection in the in-house production area.

Hierarchy level	Plant	SP type	QuotaUsage	ad.sp.proc	Discontin.	Efo.date	Max		
🔻 🕮 P-400-NN - Pumpe (Auftragsnetz	1000			0					
• 🚾 400-100-NN -	1100	80	0						
• 🚾 400-130-NN -	1000		0						
🕨 🚾 400-500-NN - Lagerträger	1100	40		31	_				
• 🚾 400-600-NN -	1000			0	1	01.01.2017			
🕨 🚾 400-200-NN -	1100	70		0					
• 🚾 400-300-NN -	1100		4	0					
* Val 400-300-NN -	1100		4	0					



Yellow Background:

The material is a special procurement without stock transfer. The special procurement indicator is displayed in the corresponding column. You see only the times from the procuring plant.

i Note

Prerequisite: The *consider special procurement indicator* function on the *Inhouse production* tab is activated.

Red Background:

The material is a special procurement with stock transfer. The special procurement indicator is displayed in the corresponding column. The stock transfer gives rise to an additional period (*Add. special procurement key* column). The time is calculated using the planned delivery time of the components and the goods receipt processing time from the receiving plant and is added to the total replenishment lead time.

i Note

Prerequisite: The *consider special procurement indicator* function on the *Inhouse production* tab is activated.

Red Font:

The material has an entry in the Effective-out date field in the material master (MRP 4 view), and the date is less than or equal to the current date, or it has no entry in the effective-out date, but the discontinuation indicator field is not empty.

3.3.3 Calculation of the Values of the "Calc. TRLT" Column

The *Calculated RLT* column always displays the largest RLT of the components plus the RLT of the material at the various levels.

In this example, the total replenishment lead time is calculated based on the single-level RLT (AT) in the enhanced material master view.

Hierarchy level	Calculated RLT	SingleLev.RLT(WorkD) SCM-TAB
- - - - - - - - - - - - -	86	6
🛚 🜆 101-110 - Slug for spiral casing-	80	80
• 🚈 100-120 - Flat gasket	2	2
• 🚈 100-130 - Hexagon head screv	30	30
100-100 - Casings	35	5
• 🚈 100-110 - Slug for spiral cas	0	0
• 🚈 100-120 - Flat gasket	2	2
• 擾 100-130 - Hexagon head sc	30	30

Material 100-100 has a RLT of 5 days. The calculated RLT is specified with 35 days. The maximum of the components 100-110, 100-120, and 100-130 plus the custom RLT of 5 days.

If the calculation is based on the master data in the MRP 2 view, the planned delivery times, goods receipt processing times, in-house production times, and purchasing department processing times are used.

The total RLT is always calculated in workdays. If the decoupled replenishment lead time is updated, the RLT is converted into calendar days.



3.4 Simulation Result Display

The result of the simulation is displayed as a tree structure.

The structure of the tree reflects the bill of material structure. However, only those components are displayed for which a long-term planned order was generated during the simulated MRP run. In the other columns on the results screen, you can see information from the material master and also information about the created long-term planned orders.

Material	Descr.	Pl	RI	Resub.Dat.	O Pu	1	м	P S	Safety Stk I	Receipt	Requiremen U	Avail.Date	End	Start date	Open. date	InhseProdT	Proc. time	SetupTime	Interop.	Pind Dely	GR ProcTme
P-400-NN	Pumpe (Auftragsnetze)	1000				1	01	E	10.000,000	10.025,000	25,000 PC	22.08.2018	22.08.2018	08.08.2018	25.07.2018	10				10	
• 🔲 400-110-NN	Rohling für Spiralgehäuse	1000	X 1	0.06.2013	< 001	1	01	F	0,000 2	5.013,000	5.013,000 PC	21.08.2018	20.08.2018	08.08.2018	25.07.2018					10	1
 400-130-NN 	Sechskantmutter M10	1000	X 1	1.06.2013	< 001	1	01	F	0,000 2	5.013,000	5.013,000 PC	21.08.2018	20.08.2018	08.08.2018	25.07.2018					10	1
 400-300-NN 	Welle	1000			001	1	01	E	0,000 2	15.038,000	15.038,000 PC	17.03.2022	16.03.2022	08.08.2018	25.07.2018		902,28	0,07	3,99	30	1
400-400-NN	Antriebselektronik	1000			001	1	01	E	0,000 2	5.013,000	5.013,000 PC	20.03.2019	19.03.2019	08.08.2018	25.07.2018		150,39	0,01	3,22	10	1
• 🔲 400-410-NN	Platine für Antriebselektronik	1000			001	1	01	F	0,000 2	5.013,000	5.013,000 PC	21.08.2018	20.08.2018	08.08.2018	25.07.2018					10	1
 400-420-NN 	Stromversorgungsmodul	1000			001	1	01	F	0,000 2	5.013,000	5.013,000 PC	11.09.2018	10.09.2018	08.08.2018	25.07.2018					30	1
 400-430-NN 	Kabelbaum	1000			001	1	01	F	0,000	5.013,000	5.013,000 PC	11.09.2018	10.09.2018	08.08.2018	25.07.2018	1				30	1
 400-500-NN 	Lagerträger	1000			001	1	01	X 40	0,000 1	5.013,000	5.013,000 PC	11.09.2018	10.09.2018	08.08.2018	25.07.2018		200,52	0,02	3,23	30	1
 400-500-NN 	Lagerträger	1100	X 1	4.06.2013	< 001	1	01	E	0,000	5.013,000	5.013,000 PC	07.08.2018	06.08.2018	Image:	18.07.2018	3				13	1
 400-510-NN 	Kugellager	1100			001	1	01	F	20,000 2	5.021,000	5.013,000 PC	01.08.2018	31.07.2018	4 19.07.2018	05.07.2018					10	1
 400-700-NN 	Blech ST37	1000	X 1	4.07.2013	< 001	1	01	F	0,000 2	5.100,000	5.012,500 M2	21.08.2018	20.08.2018	08.08.2018	25.07.2018					10	1
 400-800-NN 	Farbe blau	1000			001	0	01	F	0,000 2	5.012,500	5.012,500 KG	20.08.2018	20.08.2018	08.08.2018	25.07.2018					10	
• 🔲 400-140-NN	Drehzahlmesser	1000	X 1	3.06.2013	001	1	01	E 80	0,000	10.026,000	5.013,000 PC	14.08.2018	10.08.2018	08.08.2018	25.07.2018	2				10	2
 400-153-NN 	Gehäuse	1000			T24	1	01	F	0,000 2	5.075,000	5.013,000 PC	21.08.2018	21.08.2018	08.08.2018	25.07.2018					11	
 400-200-NN 	Laufrad	1100			001	1	01	E	200,000 1	5.113,000	5.013,000 PC	08.08.2018	07.08.2018	8 24.07.2018	10.07.2018	10				10	1
 100-300TIO 	Hollow shaft	1100			100	0	01	E 20	0,000 1	5.113,000	5.113,000 PC	24.07.2018	20.07.2018	16.07.2018	02.07.2018		51,13	0,10	1,00	3	2
 400-152-NN 	Anzeige	1100			001	0	00	F	0,000	5.113,000	5.113,000 PC	24.07.2018	24.07.2018	🖲 11.07.2018	27.06.2018					12	
• 🥮 400-210-NN	Rohling	1100			001	1	01	F	0,000 2	5.113,000	5.113,000 PC	24.07.2018	23.07.2018	9.07.2018	25.06.2018					13	1
 400-151-NN 	Temperatursensor	1000	X 1	3.06.2013	T24	1	01	F	0,000 2	5.125,000	5.013,000 PC	24.08.2018	24.08.2018	08.08.2018	25.07.2018					14	

If a start date of an order is in the past, it is highlighted as follows:



If there is special procurement for a component, this is highlighted with a yellow background in the Special Procurement Type column.

If, for example, special procurement results in a different plant from the one entered in the selection, this is also displayed with a yellow background in the Plant column.

In front of the components, there is a traffic light icon that indicates whether the component belongs to the critical path or not. The critical path is the path with the longest total lead time. It is displayed from the level at which it begins up to the header material.

3.5 Database Fields Used

Description	Database Field
Start date scheduled	AFKO-GSTRS
End date scheduled	AFKO-GLTRS
Start date reported	AFKO-GSTRI
End date reported	AFKO-LTRMI
Start date (B)	AFKO-GSTRP
Basic end date	AFKO-GLTRP

3.6 Call Standard SAP Transactions

In the results tree view, you can navigate to different SAP standard transactions.

Example

Double-click on a row of a material or component: This takes you to the display of the respective material master (transaction *MMO3*). Double-click on a production order: You can see the relevant order (TA *COO3*).

You can link to other transactions by creating and adapting a navigation profile with **Z**.

The following table lists the implemented links:

Accessible Using	Transaction	Called Using
Results tree view for in- house production and external procurement	Material master (<i>MMO3</i>)	Double-click on a row with material
Results tree view for in- house production and external procurement	Material document (<i>MBO3</i>)	Double click on goods receipt

Results tree view for in- house production	Production order (COO3)	Double-click on a row with production order
Results tree view for ex- ternal procurement	Display vendor (<i>MKO3</i> :)	Double-click on vendor
Results tree view for ex- ternal procurement	Scheduling agreement (<i>ME33L</i>)	Double-click the header line of a scheduling agreement
Results tree view for ex- ternal procurement	Display info record (<i>ME13</i>)	Double-click the header line of a scheduling agreement
Results tree view for ex- ternal procurement	Standard purchase order (<i>ME23N</i>)	Double-click purchase order under an info record or outline agree- ment

3.7 Simulation in In-House Production and Multilevel RLT

On the results screen for in-house production and multilevel RLT, you can use the calculated data to run a simulation. The result of the simulation is displayed as a Gantt chart.

During the simulation, you have three options for in-house production:

- Simulation with minimum values: This is the minimum of the own orders of the relevant material
- Simulation with average values: Here, the average of the own orders of the relevant material is used
- Simulation with maximum values: This is the maximum of the own orders of the relevant material

If the relevant minimum, maximum, or average value is 0, then the calculated total replenishment lead time is used. The total replenishment lead time is used by default in the multilevel RLT analysis mode.

You can jump to the simulation as follows:

- Select the material to be simulated
- Navigate to the simulation using the navigation menu



Simulation Button

If the links to the simulation do not exist in the navigation profile, you must integrate the following function codes:

- *SIM_MIN* simulation with minimum values
- SIM_MAX simulation with maximum values
- *SIM_AVG* simulation with average values

You integrate the function codes via Change Navigation Profile.

R	eplenishment lead
***	🖁 🚹 🕼 Set Resubmission Dat
Z	Change Material
1	Select Navigation Profile
	Change Navigation Profile
	Save Navigation Profile
	Manage Navigation Profile
1	• 🚾 400-4

Navigation Profile

After the change, you can save the navigation profile as default and access it again later.

3.7.1 Result of the Simulation

The result of the simulation is displayed in a separate window in the Gantt chart.

Ø	- 4 🗉 🗞 🚱 🌘	6	
Replenish	n ment lead time in-hous Resubmission Date 않 Maintain M	Graphic Edit Goto Options Time	Unit Help
Cha	nge Material 📄 🗃 md04 🕼 🖌		
 Hierarchy level P-420 - P 	Startdate Enddate tot. In-hd 0	Jun. 2013	3 Jul. 2013
 P-410 - P P-403 - P P-403 - P P-402 - P P-401 - P P-400 - NN P-400 - P 	0 10 21 22 0 55 1	_22 _23 _24 P-400-NN - Level0	25 26 27 28 29 30

B Replenishment lead time in-house production

Color legend:

- Blue background: Materials with procurement indicator F
- Green background: Materials with procurement indicator E or X
- Red background: This material is part of the critical path
 - Blue frame: Materials with procurement indicator F
 - Green border: Materials with procurement indicator E or X
- Black font: Minimum, maximum, or average value is greater than 0 and has been used for the simulation.
- Yellow font: Minimum, maximum, or average value equals 0. Calculated total replenishment lead time has been used for the simulation.

Definition of Critical Path:

The critical path is the path in the BOM with the longest total replenishment lead time.

Simulation process: During the simulation, the system initially performs forward scheduling. The longest path is determined to define the end date. Starting from the end date, the components are then scheduled backwards. The start date is always the current date.

Replenishment Lead Time Monitor

Results

4 Master Data Updates of the Replenishment Lead Time Monitor

The following sections describe master data updates.

Related Information

Updating the In-house Production Data [page 39] Updating the External Procurement Data [page 40]

4.1 Updating the In-house Production Data

Use the $\frac{1}{2}$ button to transfer the calculated in-house production time and total replenishment lead time to the material master of the selected header materials. These values in the master data are then as near as possible to the actual times required.

header materials Update in-house production time Target fields: In-house production time MM Single-stage RLT CD Single Source Field: Min, Max or Avg of outler control Maximum Minimum Average Percentile Consider GR Time	e-stage RLT WD
Update in-house production time Target fields: In-house production time MM Single-stage RLT CD Single Source Field: Min, Max or Avg of outlier control Maximum Minimum Average Percentile to this Consider GR Time	e-stage RLT WD
Target fields: In-house production time MM Single-stage RLT CD Single Source Field: Min, Max or Avg of outlier control Maximum Minimum Average Percentile to this Consider GR Time	e-stage RLT WD
□ In-house production time MM □ Single-stage RLT CD □ Single Source Field: □ Min, Max or Avg of outlier control Maximum ○ Minimum ○ Average ○ Percentile ○ to this Consider GR Time	e-stage RLT WD
Source Field: Min, Max or Avg of outier control Maximum Minimum Average Percentile <u>to this</u> Consider GR Time	i value:
Min, Max or Avg of outlier control Minimum Average Percentile to this Consider GR Time	value:
Maximum	value:
Consider GR Time	
Update total replenishment lead time	
For procured Parts only selection "Tot.repl.lead.time" or "to this value" r	
Min, Max or Avg of outlier control	
💿 Maximum 💫 Minimum 🔷 Average 🔷 Percentile	
O value of field Tot.repl.lead.ti	
Update accelerated RLT (SCM-Tab)	
O Minimum O Maximum O Average 💿 Percentile	
Use outlier-corrected values	
Update dec. RLT (SCM-Tab)	
Use outlier-corrected values	
Update source RLT (SCM-Tab)	

Selection Options for Updating the In-house Production Data

For correct updating, the following settings are necessary:

- Save in the background
- Processing mode N

If you have update problems, you can use the log in SLG1 under object /SAPLOM/* to determine the cause.

4.2 Updating the External Procurement Data

Use the substant of the calculated replenishment lead time to the material master of the selected header materials. These values in the master data are then as near as possible to the actual times required. You can also update info records and contracts. To do so, you must select the contract or the info record in the hierarchy display before pressing the Update button.

late in all selected
materials
Update planned deliv. time
Target fields:
DPDTime Materialmaster Single-stage RLT CD Single-stage RLT WD
Source Field:
MRP area
Min, Max or Avg of outlier control
Maximum Minimum Average Percentile to this value:
 on planned del. time of choosed contract
 on olanned del. time of choosed info record
O Avg external uploaded supplier deliver times
Consider GR Time Consider purchasing processing time
from material master (before doing this analysis) new value (see above) + goods receipt proc. time (mat. master WEBAZ) From Material Master other value:
Update accelerated RLT (SCM-Tab)
Minimum Maximum Average O Percentile
Use outlier-corrected values
Update dec. RLT (SCM-Tab)
Update source RLT (SCM-Tab)
Update source dec. RLT (SCM-Tab)

Selecting Options for Updating the External Procurement Data

For correct updating, the following settings are necessary:

- Update material master data:
 - Save in the background
 - Processing mode N
- Update info records; update contracts
 - Save in the background

• Processing mode E

You can use the log in *SLG1* under object /*SAPLOM*/* to analyze update problems.

5 Job Scheduling for the Replenishment Lead Time Monitor

If you want to start the **replenishment lead time monitor** at regular intervals in batch mode, it is advisable to create a corresponding variant in the **replenishment lead time monitor** and to define a job for this purpose using *SM36*.

er	D053808		
ogram values			
ABA	program	External command	External program
ABA ABAP program	program	External command	External program
ABA ABAP program Name	program /SAPLOM/RL1	External command	External program
ABA ABAP program Name Variant	program /SAPLOM/RL1	External command	External program

Job Scheduling

If you want to execute multiple consecutive analyses, you should schedule these consecutively without overlaps. This enables the database entries (analysis results) to be uniquely assigned to the variants of the individual jobs. The risk of extended runtimes and program termination is reduced because the memory does not have to handle parallel jobs. When stored results are loaded, there may be program terminations in the hierarchy display due to lack of memory. To avoid terminations here, you should specify restrictions in the selection screen (for example, by entering a range of material numbers).

6 Important Information and Restrictions

Please note the information and restrictions described in the following sections.

Related Information

Order Date Delivery Schedule [page 43] Restriction by Analysis Period [page 44] Selection Options in General [page 44] Negative Delivery Times with Goods Receipt Before a Purchase Order Is Created [page 45] Outlier Correction: External Procurement [page 45] Alternative BOM Option [page 45] Load Saved Results [page 45] Update Master Data [page 46] Save as Variants [page 46]

6.1 Order Date Delivery Schedule

If you select *Stat. delivery date* as the requested delivery date on the *External procurement* tab of the replenishment lead time monitor, you can always see the first date of a schedule line for purchase orders with schedule line.

Hierarchy level	Pdt	Godds-rec. time	RLT	Amount	BUn	Desdeldate	Startdate	Enddate
 Material 100-101 CI Spiral casing (with planned scrap) 	3	1	7	46	ST			
 Supplier 000001011 SKF Americas 	1			46	ST			
Solutione agreement 5002000002 / 00010	3	1	7	46	ST			
Purchase order 4500017415 / 00010				23	ST _	26.05.2011	18.04.20	29.04.2
 Purchase order 4500017418 / 00010 				23	ST	18.04.2011	28.04.20	26.04.2
• 🕵 Goods receipt 000000039				11	ST		Contraction of the second second	24.04.2
 Source Goods receipt 000000040 				12	ST			26.04.2

Requested Delivery Date

Exar	nple			
Imple	e ME23N:			
Ma	aterial Data	Quantities/Weights 🎽	Delive	ry Schedule
S	C Delivery D	Sched. Qty	Time	Stat. Del G
	D 21.04.2011	12		18.04.2011
	D 22.05.2011	11		19.05.2011

6.2 Restriction by Analysis Period

Production:

You can restrict the results by specifying an analysis period. For production orders, a predefined period in the selection screen refers either to the basic start date (*AFKO-GSTRP*), scheduled start date *GSTRS*, or to the reported end date *GETRI* of the order, depending on the dates selected.

For scheduling agreements, the analysis period refers to the requested date, which is either the delivery date or the stat. delivery date, depending on what you have selected on the *External procurement* tab.

Procurement:

Selection by contracts is performed at document level. This means that no empty contracts are displayed, only contracts that also have a document.

The selection logic with predefined contract number and info record number is an AND operation; this means that only documents that have the predefined contract number (*EKPO-KONNR*) and info record number (*EKPO-INFNR*) are found. When the analysis period is restricted, the change date is checked at item level (*EKPO-AEDAT* field).

6.3 Selection Options in General

Depending on the field type and system settings, selections can sometimes behave in unexpected ways and even fail to deliver any results.

Example

One example is the Vendor field. If you enter 1*, the system searches for all info records/contracts with vendors 1++++++++. Vendor 1000 is not taken into account because it can have leading zeroes in the system. Therefore, in this example, the entry in the selection field must have leading zeroes: 0000001*.

6.3.1 Selection Using Purchasing Document

If you have entered purchasing document numbers on the *External procurement* tab on the selection screen, the **replenishment lead time monitor** reads all purchase orders for the selection with the order category 'F' (purchase order).

6.4 Negative Delivery Times with Goods Receipt Before a Purchase Order Is Created

If the system contains a goods receipt date for a purchase order that is before the start date (or requested date), the time is set to 1. This time of one day is also included in the minimum, maximum, and averages calculation. Negative time is not calculated.

6.5 Outlier Correction: External Procurement

To improve program runtime, calculation of the minimum, maximum, and averages of outlier corrected values has not been implemented at vendor level.

6.6 Alternative BOM Option

If you enter an alternative BOM, the change has an effect only on the BOM explosion, but not directly on the production orders. This means that you enter a number as the alternative BOM only for the function module (*CS_BOM_EXPLOSION*), and not when reading the order header tables (*AFKO- STLAL*).

6.7 Load Saved Results

Loading saved results and running the system with a quantity > 1000 may result in crashes. The most common cause is insufficient memory. To avoid crashes with a large number of materials (>1000 with three BOM levels), we recommend that you do not display the results as a tree; instead, load the results using *Advanced LV tree* or as a table, or limit the result by restricting the materials. Please see also 1563641/2 and 286316/2

You can restrict the result only by specifying material numbers. All other selection fields are ignored.

6.8 Update Master Data

When updating the planned delivery time of contracts or info records, you must make sure you have selected them. Updating the data with the $\frac{1}{22}$ button can fail if the corresponding transaction contains warning or information messages that must be confirmed.

6.9 Save as Variants

Please ensure you have also checked the values of relevant tabs before saving variants. For variants for external procurement, you must have selected the screen assignment checkboxes 1000, 1001, and 1002:

Variant Attributes				
Copy Screen Assignment				
Variant Name LPEINANALYSEZ	_			
Description		Scrn Assig	nm.	
Only for Background Processing	民	Created	Selection Scrns	7
Protect Variant		✓	1000	
Only Display in Catalog		✓	1001	-
System Variant (Automatic Transport)				

Variant Attributes

For in-house production, you have to select the checkboxes for the selection screens 1000, 1001, and 1003.

7 Deletion Program for Saved Results

There is a separate program for deleting results that are no longer required and the associated selection parameters from the data base. You call this using $/SAPLOM/RLT_X$.

Tool for Deletion of R	LT Monitor Analy	sis			
⊕ ⓑ					
Delete analysis results					
Delete analysis					
OProofing cycle					
O Delete table entries directly					
✓ Simulation					
Delete RLT Monitor analysis					
()					
Key for Results of Monitors		to		\$	
User Name		to		S	
Current Date		to		S	
Time	00:00:00	to	00:00:00	S	
Description		to			
Options for commit for data deletio	n				
Commit work for each analysis					
O Commit per table					
O Commit per package					
Number of lines per package	0	1			

Deletion Program

There are three user cases:

- 1. Delete specific analyses (can be restricted using selection screen)
- 2. Delete analyses for which selections parameters are no longer stored (in the table /SAPLOM/X_SELECT)
- 3. Delete individual analyses from the results table directly (if an inconsistency has occurred)

In each case, there is the option of using the simulation mode without affecting the databases.

Delete Analysis

You can select a specific analysis or enter a free selection. The search button displays all the analyses that are in the table /SAPLOM/X_SELECT.

尚				
Key for Results of Monitors	1	to		5
User Name	Ī	to		5
Current Date		to		S
Time	00:00:00	to	00:00:00	S
Description		to	-	4

Deleting Analyses

Correction Run

If the table /SAPLOM/X_SELECT for an analysis no longer contained entries, this would result in errors when loading the analysis. The analysis must therefore be deleted. Use the correction run option und check option / SAPLOM/RLT_EF and/or /SAPLOM/RLT_FB and. You do not have to enter a database key because the program itself determines the corresponding key.

Proofing cycle for standard analysis	
Delete all data from selected tables, which have no	
ey entry in table /SAPLOM/X_SELECT exists.	
Tables with key DBKEY	
SAPLOM/X_SELECT	
SAPLOM/RLT_EF	

Correction Run

Delete Table Entries Directly

If inconsistencies have occurred, you can use this option to delete analyses directly from the individual tables. In this case, you must specify a key. Please use with care.

Oelete	table entries directly	ר L	
🗸 Simulati	on		
Delete data	directly from tables		
	Repair tool - please use caref	ully	
	Analysis allways should be de	leted totally, not p	artially
	(= do not delete data from	a single table , but	from all tables
	where data have been writte	en for an analysis)	
	To avaoid inconsitent data st	atus: please usually	/ do not use
	this option for deletion of a s	tandard or referen	ce analysis.
	Use this option only to repair	inconsistent data,	caused by
	e.g. by update errors, incom	plete deletions etc	
Key for Re	esults of Monitors		
Tables wi	ith key DBKEY		
/SAP	LOM/X_SELECT		
/SAP	LOM/RLT_EF		
/SAP	LOM/RLT_FB		

Delete Table Entries Directly

8 Enhancement Options

The following enhancement options are available in the **replenishment lead time monitor**. These enable you to add selected functions without modifications, or to change these functions.

Related Information

Enhancement Points [page 50] Business Add-Ins (BAdIs) [page 51]

8.1 Enhancement Points

Enhancement points are available for enhancing the selection screen. These are explicit enhancement points in ABAP source code. All enhancement points are assigned to the enhancement spot /SAPLOM/RLT_ENH.

The following enhancements are used to enhance the selection screen:

/SAPLOM/RLT_E01 at the end of subscreen 1001 (General settings tab) ENHANCEMENT-POINT /SAPLOM/ RLT_SELSCREEN_1001

/SAPLOM/RLT_E01 at the end of subscreen 1002 (External procurementtab) ENHANCEMENT-POINT / SAPLOM/RLT_SELSCREEN_1002

/SAPLOM/RLT_E01 at the end of subscreen 1003 tab (Inhouse production) ENHANCEMENT-POINT /SAPLOM/ RLT_SELSCREEN_1003

/SAPLOM/RLT_E01 at the end of the processing block INITIALIZATION (preassignment) ENHANCEMENT-POINT /SAPLOM/RLT_SCREEN_INIT

/SAPLOM/RLT_E01 at the end of the processing block AT SELECTION-SCREEN OUTPUT (customize fields) ENHANCEMENT-POINT /SAPLOM/RLT_SCREEN_OUTPUT

/SAPLOM/RLT_E01 at the end of the processing block AT SELECTION-SCREEN (input validation) ENHANCEMENT-POINT /SAPLOM/RLT_SCREEN_AT

The following enhancement is used to enhance the TOP includes for data declaration:

/SAPLOM/RLT_TOP at the end of the TOP include (data declaration) ENHANCEMENT-POINT /SAPLOM/ RLT_TOP_ENH

8.2 Business Add-Ins (BAdIs)

To enhance all other places in the program, BAdIs are available. As of SAP NetWeaver 7.0, BAdIs are part of the Enhancement Framework, where they represent explicit enhancement options. They differ from the classic BAdIs particularly in terms of their improved performance.

Many BAdls have an implementation in the form of a fallback class, which is called when no other implementation is available. This can also be considered a sample implementation.

BAdIs are initialized in the INIT_BAdIS subroutine.

All BAdIs are assigned to the enhancement spot /SAPLOM/RLT_BADIS. The following BAdIs are available:

/SAPLOM/RLT_KEYSLCTN - selection of master data and transaction data for the RLT - methods:

- SELECTION_FB_HEADER external procurement: selection of header materials
- Called up in form READ_MARC
- SELECTION_INFOREC_MAT external procurement: selection of info records with given material
- Called up in form INFOREC_MATFOCUS
- SELECTION_INFOREC_INF external procurement: selection of info records with given info record
- Called up in form ONLY_INFOREC_GIVEN
- SELECTION_PURCHASE external procurement: selection of purchase order
- Called up in form SELECT_PURCHASE
- SELECTION_RECEIPT external procurement: selection of goods receipts
- Called up in form SELECT_RECEIPTS_FB
- SELECTION_AGREEMENT external procurement: selection of scheduling agreements with schedule lines and goods receipt
- Called up in form SELECT_AGREEMENT
- SELECTION_EF_HEADER in-house production: selection of header materials
- Called up in form SELECT_MATERIAL_EF
- SELECTION_EF_COMPONENTS in-house production: selection of components
- Called up in form SELECT_COMPONENT
- SELECTION_ORDERS in-house production: selection of orders
- Called up in form SELECT_ORDERS

/SAPLOM/RLT_ADDITION enhancement of the results table - methods

- ADAPT_FIELDCAT_EF adapt field catalog for in-house production
- Called up in GRID_FIELDCAT_EF
- ADAPT_FIELDCAT_FB adapt field catalog: external procurement
- Called up in GRID_FIELDCAT_FB
- ADAPT_TABLE_EF adapt results table: in-house production
- Called up in GRID_LINE_EF
- ADAPT_TABLE_FB adapt results table: external procurement
- Called up in GRID_LINE_FB

So that the results table also contains the required additional columns, the relevant database table must be enhanced using an append.

For external procurement: /SAPLOM/RLT_FB.

For in-house production: /SAPLOM/RLT_EF.

/SAPLOM/RLT_CALCULATE change calculations in the replenishment lead time monitor - methods

- DECOUPLING_POINT_BOM
- Is called up in the form: CREATE_RESULT_WITHOUT_ORDERS
- Is called up in the form: COMPOSE_RESULT_EF_C
- Is called up in the form: *COMPOSE_RESULT_EF_H* (shortly before the end)

See other details about

ADJUST_TOTAL_RLT

- Is called up in the form: create_result_without_orders
- Is called up in the form: *compose_result_ef_c*
- Is called up in the form: *compose_result_ef_h* (shortly before the end)
- [In each case after the decoupling point]

See for more details about the

/SAPLOM/RLT_AUTH authorization checks in the RLT - methods

- CHECK_AFTER_SELSCREEN
- Is called up in the form: CHECK_AUTHORITY_BO

9 Appendix

The following sections provide formulas, information on runtime, and answers to frequently asked questions.

Related Information

MAPE (mean absolute percentage error) [page 53] MAD (Mean Absolute Deviation) [page 54] Runtime [page 54] Frequently Asked Questions (FAQ) [page 55]

9.1 MAPE (mean absolute percentage error)

The mean absolute percentage error (MAPE) is calculated using the following formula:

$$MAPE = \frac{1}{n} \sum_{t=1}^{n} |PE(t)|$$

MAPE Formula

e(t) = V(t) - P(t)

PE(T) = e(t) / V(t) * 100

V(t) = Actual value

P(t) = Average value

Example

n = Number of ex-post periods

Average	ACTUAL V(t)	e(t) = V(t) - P(t)	PE(T) = e(t) ∕ V(t) * 100	Sum	Result: Sum * 1/n
186	639	453	70.89	70.89	
186	387	201	51.94	122.83	
186	0	-186	0.00	122.83	
186	91	-95	104.40	227.23	
	Average 186 186 186 186	Average ACTUAL V(t) 186 639 186 387 186 0 186 91	AverageACTUAL v(t)e(t) = v(t) - P(t)1866394531863872011860-18618691-95	AverageACTUAL v(t)e(t) = v(t)PE(T) = e(t) / V(t) * lo018663945370.8918638720151.941860-1860.0018691-95104.40	AverageACTUAL v(t)e(t) = v(t) - P(t)PE(T) = e(t) / V(t)*Sum18663945370.8970.8918638720151.94122.831860-1860.00122.8318691-95104.40227.23

5	186	-13	-199	1530.77	1757.99	
6	186	10	-176	1760.00	3517.99	586.3324731

9.2 MAD (Mean Absolute Deviation)

Formel für die mittlere absolute Abweichung

$$D = rac{1}{n} \cdot \sum_{i=1}^n |x_i - ar{x}|$$

Dabei gilt:

- DI = mittlere absolute Abweichung (engl. average absolute deviation)
- *n*| = Anzahl an Beobachtungswerten
- $x_i = i$ -ter Beobachtungswert
- \bar{x} = Mittelwert der Verteilung

Formula for MAD

9.3 Runtime

The runtime of the historical analysis depends heavily on the scope of selection. If you cannot restrict this scope further, we recommend that you schedule the analysis as a job. You also have the option of packaging and parallel processing. Enter a package size for the analysis with *Save Result*, otherwise there may be incomplete or empty results. You specify the package size on the selection screen.

Result of Analysis	
Layout	/DEFAULT
Package size (number of Materia	1.000

Specifying the Package Size

This enables you to reduce the likelihood of a termination due to a timeout or a memory overflow.

You activate parallel processing with the separate /SAPLOM/RLT_PARAM.

The values defined here are saved in table /SAPLOM/RLT_PAR. Example:

Parallel Processing Options	
Use Parallel Processing	
Logon/server group	PARALLEL_GENERATORS
Maximum Task Number	6
Wait Time After Fail (sec.)	10
Max. Tries for FailingTasks	5

Parallel Processing

9.4 Frequently Asked Questions (FAQ)

Question: According to transaction *ME2M*, material XYZ has multiple purchase orders in the period 2014–2017. Why is the material not displayed in the replenishment lead time monitor?

Answer: Like *ME2M*, the monitor first selects documents for a material. The system then checks whether the vendor, info records, and purchase orders are valid, or whether there is a deletion flag at one level. You should therefore check whether vendors, info records, or purchase orders are invalid, for example locked (central or purchasing block). Check whether info records or purchase orders are marked for deletion.

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