Opcenter APS Advanced Planning and Scheduling

Product presentation





Introduction Product Outlook





Introduction Opcenter APS



Restricted | © Siemens 2023 | Siemens Digital Industries Software

A look to a demand-driven business environment





Why an Advanced Planning and Scheduling System ?

APS with progressive implementation allows company to gradually evolve skills and processes and to fully exploit their potential



Source: "The importance of APS in Demand Planning", BearingPoint

SIEMENS

Why an Advanced Planning and Scheduling system?

Opcenter APS brings tangible benefits to your value drivers

Improvement in customer service

Improvement in productivity



Resource allocation and tool utilization increase

Easy bottleneck detection

Fast and frequent reschedule to meet production deviation

WIP reduction

Raw Material Inventory Reduction

Knowledge sharing and collaborative environment

SIEMENS

Page 6 Restricted | © Siemens 2023 | Siemens Digital Industries Software

Business Trends bringing new possibilities 1/2

TRENDS:

- Platform sharing
- Modular production systems
- Market demand more regions specific
- Mass customization
- Emerging market share increase

IMPLICATIONS:

- Globalized production
- Complex Products
- Flexible production
- Complex validation procedure

POSSIBILITIES:

- Innovative manufacturing technologies and manufacturing process
- Integrated approach to product design, production planning and production execution
- APS managing availability and synchronization of limited and complex resources
- APS functionalities to enable Supply Chain coordination and enhance collaboration and visibility and visibility



Business Trends bringing new possibilities 2/2

TRENDS:

- Rising machining product demand
- Introduction of more flexible machines and innovative materials
- Increased global execution due to growing markets and increase of externalization to FTS

IMPLICATIONS:

- Flexible processes due to new generation of machine tools
- Invest in capacity management to have bigger volumes with lower lead times
- Key role of complex supply chain

POSSIBILITIES:

- Enable flexible production planning and workflow management supporting the integration of more flexible machines
- Optimize and automate production order and asset mgmt. to achieve higher machine tool utilization and reduced order lead time
- Implement APS functionalities to enable Supply Chain coordination and enhance collaboration and visibility



Scheduling in a nutshell Opcenter APS



Restricted | © Siemens 2023 | Siemens Digital Industries Software





different combinations









The APS system in a Digital Factory





Product Opcenter APS



Restricted | © Siemens 2023 | Siemens Digital Industries Software

Opcenter APS Advanced Planning and Scheduling

Global competition forces companies to find ways to optimize production operations by reducing or eliminating non-value-added activities such as setup or waiting time.



Opcenter APS is a range of Advanced Planning and Scheduling tools for the manufacturing industry. It uses algorithms to analyse and calculate achievable production schedules, taking into account a range of constraints and business rules, allowing the planner to generate and evaluate multiple possible scenarios. Highlighting potential problems allows action to be taken to **balance demand and capacity**.



C	Fast	\$ € ¥	Adaptable License
	Smart		Mature and Stable
Ċ	Effective		Flexible







- Schedules in minutes
- Heuristic approach
- Frequent reschedule

- Deviation management
- Quick problem detection



Graphical tool

- Fix before happen
- Cause & effect analysis
- Identify problems









- Improved Customer Service rate
- **Productivity Increases**
- Inventory Reduction
- Cycle Time Reduction
- Fast Return of Investment

- Family of products
- From SMB to Fortune 500
- Product evolves with your company







- Various License Levels
- You Pay What You Need
- Read Only Users

- Pack Of Licensed Users
- Concurrent users available





- Technically superior
- Multi-language
- Easily integration

Native integration to Siemens products

SIEMENS





- Configurable workspace
- Flexible data structure
- Task automation scripting
- Flexible constraint and sequencing model

- Full API (Programming interface)
- Standards and extendable reporting
- Unattended Scheduling



Worldwide adopted



- Widely adopted
- Local support

- Global support 24/7
- Strong Partner Network

SIEMENS

Companies using APS in place of spreadsheets and ERP outperform in:





Scenario analysis

Customers and suppliers inputs handling

Seasoning, trends, campaigns and low sales **Finite Capacities not managed**

Not capable to predict

Not suitable for MTo

ERP and APS systems together are synergic to provide competitive edge to manufacturers



Positioning in Siemens' Portfolio

Manufacturing		Industries											
Operations		Automotive		HE-Special	Electronics Semico	Semicon- A&D		Medical	F&B/CPR	Pharma /	Chemicals	Energy	
Manageme	ent		Tiers 📀	Tire Manuf.	Machinery			Y	Devices		Cosmetics	Z I	~
	Opcenter EX FN	0											
	Opcenter EX DS		0		0			0					0
	Opcenter EX PR			0						0		0	0
Opcenter Execution	Opcenter EX PH										0		
Execution	Opcenter EX EL					0							
	Opcenter EX MDD								0				
	Opcenter EX SM						0						
Opcenter Quality	Opcenter QL	О	ο	0	О	О	0	Ο	о				о
Teamcenter QL		0	0	ο	0	0	0	0					
	Opcenter IN	0	0	0	0			0	0	0	0	0	0
Opcenter EMI	Opcenter PF	0	0	0	0			Ο		0		0	0
	Opcenter RP	0	0	0	0	0	0	0	0	0	0	0	0
Opcontor APS	Opcenter PL		0	0	0	0			0	0	0	0	0
Opcenter APS	Opcenter SC	0	0	0	0	0	0	0	0	0	0	0	0
	Opcenter SP									0	0	0	0
Opcenter RD&L	Opcenter FR									0	0	0	0
	Opcenter LAB			0	0	0			0	0	0	0	0

SIEMENS

Opcenter APS provides fast ROI!



(*) selected customer previousvly adopting spreadhsheet based solutions

SIEMENS

Planning and Scheduling What's the difference?



Restricted | © Siemens 2023 | Siemens Digital Industries Software

Opcenter APS Production Planning & Scheduling



SIEMENS

Opcenter APS Advanced Planning and Scheduling

Opcenter Planning

A Strategic Decision Tool

Considers forecast and long term orders to decide feasibility and set general direction of production;

Dynamically sets target stock levels to meet future demand;

Load balance across multiple resources considering constraints, materials shelf life; Supports major decisions of production capacity:

- Extend work force
- Extend resource capacity
- Extend factories



SIEMENS

Opcenter APS Advanced Planning and Scheduling

Opcenter Scheduling

A Tactical Decision Support Tool

Considers detailed production demand to provide production sequence, work to list; Predicts effects of change in production, interruptions, machine breakdown, scrap; Reacts to real time production efficiency; Supports decisions:

- Overtime
- Order prioritization
- Split production batches
- Due Date Negotiation
- Order Promising (CTP/ATP)





Tight integration with both ERP and MES solutions allows rapid response to changes

Best-in-class use real-time production data to predict and synchronize

Those companies connect APS systems to their ERP, MES and shop-floor data collection, so they are able to monitor the state of execution against plan.





Advanced Planning Deep dive



Restricted | © Siemens 2023 | Siemens Digital Industries Software

Opcenter Planning - General features

You can choose to plan in finite or infinite capacity mode and your planning time periods can be days, weeks, months or a combination of all three. Parameters can be set against each of your item codes, which allow you to perform different calculations for each item. For example some of your products may be in 'make to stock' mode whilst others are in 'make to order' mode.

Infinite MPS







Opcenter Planning - Stock Plots

When a change in demand occurs whether that be in terms of quantity or delivery dates you need to be able to quickly assess if you are able to meet the new requirements.

You can import your demand changes into **Opcenter Planning** and create a new 'what if' plan. Your planning BoM will be exploded and **Opcenter Planning** will show you if you have any capacity issues. If there are issues you can work interactively to create an acceptable MPS.





Opcenter Planning Operation execution landscape

OPCENTER ADVANCED PLANNING



SIEMENS

Opcenter Planning Planner view & Capacity Usage

Overview

The Planner module is the heart of the planning system and contains the Calendar Editor, Plan Overview, Editor, Stocks Plots, BOM Requirements, Alerts, and Reports. It establishes the MPS vs available capacities patterns for resources, provides automatic and manual planning functions, and carries out all finite or infinite capacity calculations.

- Planner view
- Calendar management module
- Interactive workload vs capacity graphs (resource or groups)
- Interactive stock profile viewer
- Flexible filters
- Flexible zooming
- Locating & Locking options
- Color management module
- Access to planning & repairing rules
- Access to alerts
- Reports



Opcenter Planning Capacity Management & Alerts

Overview

The definition of the capacity model can be done directly from the calendar editor, which provides the possibility to define templates or edit exceptions. Each capacity model can be allocated to a resource, resource group, or item level and described in hours or quantity.The capacity model can also be imported from a third-party system.

Internet/O Eastource Cro				0						
Global Prep	Planner: (LivePla	A) X UK Plants X	Calendar		_					
Midlands Sub Contractor	r lanning	Monday	Tr	Jesday	Wednesday		Thursday	Friday	Saturday	Sunday
a, marris		31 Jan	uary	1 February			3	4	5	
						Detault	custom Values, Capacity: 550			
						2	10		13	
			-	•		7 Default	Custom Values, Capacity: 550		14	
			14	15		16	17	18	19	
						Default	Custom Values, Capacity: 550			
			21	22		23	24	25	26	
						Default	custom Values, Capacity: 550			
			-20	1 March		2 Default	2 Custom Values, Capacity: 550	4	2	
	Namer Chine	tay x	_							Length: 1 Days 0 Hours
	Ref Date: None									
	Oh 1h	20 3	th 4h	5h 6h 7i	n 8h 9h	10h 11ł	12h 13h	14h 15h 16h 17h	18h 19h 20h	21h 22h
				International la	anner filmettant (V) feet	Planer Threshold (W)				
					e trices [E])es					
oup Planning Resource	Available Capacity Cap	acity Used Demand Date	Case Type	- NA	lane v	Expression			Sort Sequence Plot Colour	
4050	105.00	49.55 15-03-2021	Low Capacity Area		xked	(Flocked)==1)			12.00	
4090	105.00	89.50 22-03-2021	Less than 200		heduled	(=(SProde Type)===+Sc	eaulea-i		11.00	
4050	105.00	81.25 29-03-2021	Less than 200		TO on Time & Closing stock-	 O (UPMake to Stock) == -0)8 	&((#Opening Stock) == 0)&&()#MPS(>	(#Demand()&&()#MPS)>0(&&()#Oosing Stock)>>	0) 11.00	
4050	105.00	65.15 12-04-2021	Less than 200		10 On Time	(IPMake to Stock)==05	& #Opening Stock() = 05&&()#MPS() =	(#Demand())	900	
4050	105.00	27.30 19-04-2021	Low Capacity Area		10 above 0	(()#Closing Stock)+0(8/8)	#Make to Stock(===0))		8.00 []	
4050	105.00	97.90 26-04-2021	Less than 200		ITS within Limits	([PClosing Stock]>>(#M	n Stock[]&&@#Closing Stock)<[#Target	Stock()deb()#Make to Stock)++1()	7.00	
4050	105.00	48.75 10-05-2021	Low Capacity Area		ITS above 1 day	(()#Closing Stock+Absolu	te Max Stock@&&@#Make to Stock)==	12	5.00	
40%0		47.90 17-05-2021	Low Capacity Area		rkow 0	(#Closing Stock)+0)			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
4050	105.00	99.30 34-05-2021	Less than 200	M	ITS below Min	and the second of the second of the second of the			4.00	
4750	10.000	11 M 12 L 10 L	Last than 200			Electronic stock cleans	Stock()&&()#Clasing Stock)>C)&&()#1	Aske to Stock(=+1)	100 0	
4050		34.45 07-06-2021	Less than 200 Low Capacity Area		ITS above Max	EPCoung Stock)+(#Targ	stock()/diff()#Make to Stock(==1)	faile to Stock) = = 10	3.00 E	
4050 4050 4050	105.00 105.00	34.45 07-06-2021 44.10 14-06-2021	Less than 200 Low Capacity Area Low Capacity Area		ITS above Man	EPCourg Stock) + PTarg	Stock() & B. (*Chang Stock) + C & B(*) ** rt Stock() & N(*Make to Stock) = + ()	Aske to Stock) + 4 TII	300 D	Els.x
4050 4050 4050 4050	105.00 105.00 105.00	17.50 31-65-2021 34.45 07-06-2021 44.10 14-06-2021 89-65 21-06-2021 16.15 26.06-2021	Less than 200 Low Capacity Area Low Capacity Area Less than 200 Less than 200		ITS above Maa anner Alerta	UPComing Stock(+)PTarg	Social Ball House group (Social - C) Ball H	falle to Stock) = 13	300	• * ×
4050 4050 4050 4050 4050 4050	105.00 105.00 105.00 105.00 105.00	77.50 31.65-8021 34.45 67.06-2021 44.10 14.06-2021 89.65 21-06-2021 76.75 28-06-2021 37.00 69-07-2021	Less than 200 Low Capacity Area Low Capacity Area Less than 200 Less than 200 Low Capacity Area	12	It's above Max aver Alerts Case Type • >	EPComing Stock (SPTarg	(2002) (S. B.C. W.C. Leveng, (2002) (C. B. B.C. Leveng, (2002) (C. B.	fale to Stock) = 1()	300 D 200 D	• = ×
4050 4050 4050 4050 4050 4050	105.00 105.00 105.00 105.00 105.00 105.00	7750 31-07-023 34.45 07-06-3021 44.10 14-06-3021 09:65 21-06-3021 76:75 26-06-3021 37:00 05-07-3021 46:00 12-07-3021	Less than 200 Low Capacity Area Low Capacity Area Less than 200 Less than 200 Low Capacity Area Low Capacity Area		It's above Max Inner Alerts Case Type • > Item Code Case Type	Demand Date	Stock (Milling (Picture) (Stock (Picka)) et Stock (Milling to Stock) = 1)	faint to Stockje + 13	400 E 300 E 200 ■	(*) 8 ×
4050 4050 4050 4050 4050 4050 4050 4050	105.00 105.00 105.00 105.00 105.00 105.00 105.00	7759 31-05-023 34.45 07-06-2021 44.10 14-06-2021 76.75 26-06-2021 37.60 05-07-2021 46.00 12-07-2021 46.00 12-07-2021 46.00 12-07-2021 46.00 12-07-2021	Less than 200 Less Capacity Area Less Capacity Area Less than 200 Less than 200 Less Capacity Area Less Capacity Area Less Capacity Area		TS above Max over Alerts Case Type • > hem Code Case Type & & & &	Demand Date	Skolgiddally Cleanny Taosol - Oldaly M ni Social ddally Malae is Skolgi - 11	to Societ to Societ 10	100 D 100 D	* 8 ×
4000 4000 4000 4000 4000 4000 7006 7656 7656	105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00	71.50 31-69-8231 54.40 07-66-3021 44.10 14-66-3021 99.65 21-66-3021 17.00 66-07-3021 46.00 12-67-3021 46.00 12-67-3021 45.00 66-07-3021 45.00 66-07-3021 45.00 15-60-3021	Less Yan 200 Less Yan 200 Less Yan 200 Less Yan 200 Less Yan 200 Less Yan 200 Less Gapachy Area Less Capachy Area Less Capachy Area Less Capachy Area		TS above Max case Type - > hem Code Case Type A4 - A4 A4 - A4 A4 - A4 A4 - A4 A4 - A4 A4 A4 A4 A4 A4 A4 A4 A4 A4	Demand Date	Skodýdskej Acenerg Zosol (* obdají M nr Sosáljdský Mále to Skodý * T	Standy of the Tanks	100 D	• • *
4050 4050 4050 4050 4050 4050 4050 4050	105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00	7/50 31-69-6021 34.45 67-66-2021 44.05 14-66-2021 86.85 21-66-2021 71.00 66-6021 71.00 76-67-2021 46.00 12-67-2021 46.00 12-67-2021 46.00 12-67-2021 46.00 12-67-2021 45.00 10-67-2021 45.00 10-67-2021 45.00 10-67-2021 45.00 10-67-2021 45.01 10-67-2021 45.02 16-68-2021 45.01 16-68-2021 45.02 16-68-2021 45.02 16-68-2021 45.02 16-68-2021 45.02 16-68-2021 45.02 16-68-2021 45.02 16-68-2021 45.02 12-68-2021	Less Marc 200 Less Gapacity Area Less Gapacity Area Less than 200 Less Shan 200 Less Gapacity Area Less Gapacity Area Less Gapacity Area Less Gapacity Area Less Shan 200		TS above Mas Case Type - > Rem Code Case Type ADICSTN MTS above Ma ADICSTN MTS above Ma	Demand Date EPCoung Stoods - (PTing Demand Date E • • 12 - 06-5021 27 - 06-5021 28 - 06-5021	Skodjidalije Conneg Taxal (-0).60.60	An and a second and	100 D 200 D	• * ×
4050 4050 4050 4050 4050 4050 4050 7636 7636 7636 7636	20540 10530 10530 10530 10530 10530 10530 10550 10550 10550	7/50 31-69-6021 34-65 67-69-2021 44-05 14-69-2021 86-85 21-69-2021 70-06 664-2021 70-00 664-2021 44.00 13-47-2021 44.00 13-47-2021 44.00 13-47-2021 44.00 16-63-2021 45.01 16-63-2021 45.02 16-63-2021 45.02 16-63-2021 45.02 16-63-2021 45.02 16-30-2021 45.02 16-30-2021	Less Maier 200 Less Gapacity Area Less Staars 200 Less Staars 200 Less Staars 200 Less Staars 200 Less Capacity Area Less Capacity Area Less Capacity Area Less Staars 200 Less Staars 200 Less Mair 200 Less Mair 200		ITS above Max Inner Aletts Case Type • > Arr Case Type • > Arr Case Type • Arr Case Type Arr Case Arr Type Arr Case Arr Cas	Demand Date Demand Date 1 10 00 001 1 10 00 001 1 10 00 001 2 10 00 001 2 10 00 001 2 10 00 001 2 10 00 001 2 10 00 001 2 10 00 001 2 10 00 001 2 10 00 001 2 10 00 001 2 10 00 001 2 10 00 001 2 10 00 001 2 10 00 001 2 10 00 2 10 00 2 10 00 2 10 00 2 10 00 2 10 00 2 10 00 2 10 00 2 10 00 2 10	Skodýdálu (Koneny Tasa) – Okdál (M ni Dosá)dál (MARA els Skod) – T	And an to Stock() and TO		• * •
4000 4000 4000 4000 4000 4000 7636 7636 7636 7636 7636 7636	20540 10530 10530 10530 10530 10530 10530 10530 10530 10530	7/50 21-50-5021 34-60 07-65-2021 44-10 14-66-2021 75/53 25-66-2021 77/50 05-66-2021 77/50 05-67-2021 44:00 12-67-2021 45:00 12-67-2021 45:00 12-67-2021 45:00 15-68-2021 45:00 15-68-2021 45:00 15-68-2021 45:00 15-68-2021 45:00 15-68-2021 45:00 15-68-2021 45:00 15-68-2021 45:00 15-68-2021 45:00 15-68-2021 45:00 15-68-2021 45:00 15-68-2021 45:42 25-92-2021 47:46 45-69-2021 47:46 45-69-2021 47:46 45-69-2021 47:46 45-69-2021	Less Marc 200 Less Capacity Area Less Capacity Area Less Marc 200 Less Marc 200 Less Marc 200 Less Capacity Area Less Capacity Area Less Capacity Area Less Marc 200 Less Marc 200 Less Marc 200 Less Marc 200		TS above Mas Case Type Case Type Case Type Case Type Case Type Case Type Case Type Case Case Type Case Case Type Case Case Type Case Case Case Case Case Case Case Case	Electronic State (Herman Electronic) (Herman E	Skoljašiji (Corene ji soci i - Oddalih 17 oddaliji (Avera Skolder I)	ter forskýce fil	100 C	(* 8 ×
4000 4000 4000 4000 4000 4000 4000 7656 7656 7656 7656 7656 7656 7656	105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00	7/5 11/05-2021 44.0 70.6-2021 44.3 14.06-2021 70.5 28.66-2021 70.5 28.66-2021 70.50 67.67-2021 44.00 12.07-2021 45.20 68.63-2021 45.20 68.63-2021 45.20 68.63-2021 45.24 68.63-2021 85.55 26.03-2021 85.55 26.03-2021 85.45 26.03-2021 85.45 26.03-2021 85.45 26.03-2021 85.45 26.03-2021 85.45 26.03-2021 85.47 26.04-2021 85.47 26.04-2021	Into New 200 Law Capachy Area Law Shan 200 Law Shan 200		TS above Mas Case Type • • • Dem Code Case Type • • Dem Code Case Type Case Type • • OCCSTN MTS above Ma OCCSTN MTS above Ma OCCSTN MTS above Ma	Demand Cate Demand Cate Demand Cate 21 05 2021 23 05 2021 20 05 07 2021 10 05 07 2021 10 05 07 2021 10 05 07 2021 10 05 07 2021 10 05 07 2021 10 05 07 2021 10 05 07 2021 10 05 07 2021 10 05 07 2021 10 05 07 2021 10 05 07 2021		delate to Stock() + 10		■ 8 8
4000 4000 4000 4000 4000 4000 4000 7656 7656 7656 7656 7656 7656 7656 7	105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00	77.52 21-05-3201 44.61 21-05-3201 44.81 14-05-3201 86.82 21-05-3201 86.83 21-05-3201 86.83 41-05-3201 45.04 01-03-3201 45.04 01-03-3201 45.04 01-03-3201 45.04 01-03-3201 45.04 01-03-3201 45.04 01-03-3201 45.04 01-03-3201 45.04 01-03-3201 85.45 20-03-3201 85.45 20-03-3201 85.45 20-03-3201 85.45 20-03-3201 85.45 20-03-3201 85.45 20-03-3201 85.45 12-04-3201 0001 10-04-3201 0051 10-04-3201 0051 10-04-3201 0051 10-04-3201	Less News 200 Less Capacity Areas Less Capacity Areas Less News 200 Less Capacity Areas Less Capacity Areas Less Capacity Areas Less Capacity Areas Less News 200 Less News 200 Less News 200 Less News 200 Less News 200 Less News 200 Less News 200		Tra shore Mar care Alerts Care Type + > Care Type + > DIGDTR MT shore Mi DIGDTR MT shore Mi MT shore Mis (64 Itema) 3337011 MT shore Mi MT shore Mis (54 Itema) 3337011 MT shore Mi MT shore Mis (54 Itema) 3337011 MT shore Mi MT shore Mis (54 Itema)	Britagi Sacci, Print Britagi Sacci, Print Britagi Saci, Print	Inclassi Inclas	Here ha Social e 10		*
4000 4000 4000 4000 4000 4000 4000 400	105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00 105.00	7.32 11-05-020 14.46 27-05-201 44.50 27-05-201 44.50 27-05-201 27.50 25-05-201 27.50 25-05-201 27.50 25-05-201 27.50 25-05-201 27.51 15-03-201 27.54 25-03-201 27.54 25-03-201 27.55 2	Into News 200 Line Capacity Area Line State 200 Lines New 200 Lines Mark 200		The subcree Mase Const Type - > Const Type - > Marco Const Typ	Declarang Sacki (Henor Percanang Sacki (Henor	Skoljašiji (Corene ji Skolje Skolje 17 oktobilj (Corene ji Skolje II)	Here for StockSpin + 10	100 G	. • • •
4000 4000 4000 4000 4000 7856 7856 7856 7856 7856 7856 7856 7856	9650 9650 1950 1950 1950 1950 1950 1950 1950 19	77.52 11-05-5021 4.46 07-65-5021 4.47 14-06-5021 6.48 21-65-5021 7.05 22-66-5021 7.05 22-66-5021 7.06 05-01 7.07 22-66-5021 7.08 07-5021 4.08 12-07-5021 4.08 15-08-5021 4.08 15-08-5021 4.08 15-08-5021 4.08 15-08-5021 4.09 19-08-5021 4.00 19-08-5021 4.00 19-08-5021 4.01 19-08-5021 4.02 19-08-5021 4.03 19-08-5021 4.04 19-08-5021 4.05 10-05-5021 4.05 10-05-5021 4.05 10-05-5021 4.05 10-05-5021 4.05 10-05-5021 4.05 10-05-5021 4.05 10-05-5021 4.05 10-05-5021 4.05 10-05-5	Into New 200 Line Capacity Area Line Capacity Area Line Then 200 Line Then 200 Line Capacity Area Line Capacity Area Line Capacity Area Line Capacity Area Line Capacity Area Line State 200 Line State 200		Try adverse Mails event Alarts Care Type → Tann Code Cear Type Al → Alarts Al → Alarts	Declarang Sack (Honor) Declarang Sack (Honor) Declarang Sack (Honor) 1 (Honory) 1 (Hon		Here has have have have have have have have have		* * *
4000 4000 4000 4000 4000 7856 7856 7856 7856 7856 7856 7856 7856	90540 10550 10550 10550 10550 10550 10550 10550 10550 10550 10550 10550 10550 10550 10550 10550 10550	715 110-542 846 67.65 3201 846 71.65 3201 846 71.65 3201 846 71.65 3201 846 12.65 3201 846 12.65 3201 846 12.65 3201 846 12.65 3201 846 12.65 3201 846 12.65 3201 846 26.65 3201 847 26.65 3201 848 26.65 3201 847 12.65 4201 848 26.65 3201 848 26.65 3201 849 12.65 3201 844 10.65 3201 845 26.65 3201 845 26.65 3201 845 26.65 3201 845 26.65 3201 845 26.65 3201 845 26.65 3201 845 26.65 3201 845 26.65 3201 845 26.65 3201 845 26.65 3201	Inter West 200 Care Capacity Area Low March 200 Low March 2		Transformer Makes Intern Alartis Cases Types → S Renn Codes Cases Types Alartis Cases Ty	Demand Date Demand Date Demand Date 214.06/0021 214.06/0021 214.06/0021 214.06/0021 214.06/0021 214.06/0021 214.06/0021 214.06/0021 214.06/0021 214.06/0021 214.06/0021 214.06/0021 214.06/0021	textplationCourses to coll-collabeling and the collabeling of the coll			
4000 4000 4000 4000 4000 4000 4000 7556 7556 7556 7556 7556 7556 7556 7	19530 19530 19550 19550 19550 19550 19550 19550 19550 19550 19550 19550 19550 19550 19550 19550 19550	713 11-05-2021 44.01 71-05-2021 44.01 14-05-2021 75.05 24-05-2021 75.05 24-05-2021 75.05 24-05-2021 75.05 24-05-2021 75.05 24-05-2021 75.05 24-05-2021 75.05 22-05-2021 75.05 22-05-2021 75.05 22-05-2021 75.05 22-05-2021 75.05 22-05-2021 75.05 22-05-2021 75.05 22-05-2021 75.05 22-05-2021 75.05 22-05-2021 75.05 22-05-2021 75.05 22-05-2021 75.05 22-05-2021 75.05 22-05-2021 75.05 21-05-2021 75.05 21-05-2021 75.05 21-05-2021 75.05 21-05-2021 75.05 21-05-2021	Inst Nex 300 Line Capety Area Line Marco 200 Line Capety Area		The subset Mater event Alartis Case Type + → Marc Case Type +	Cemand Date Birchword Rect-prime Birchword Rect-prime Birchword Rect-prime Birchword Cate Birchword Cate		In Stack (see 10)		
4000 4000 4000 4000 4000 4000 4000 400	9550 9550 9550 9550 9550 9550 9550 9550	713 1109-362 3446 67.06 5201 4430 14.06-5201 75.05 28.06-5201 75.05 28.06-5201 4400 12.07-5201 4501 12.06-5201 4502 12.07-5201 4502 12.06-5201 4502 15.06-5201 854 20.05-5201 854 20.05-5201 854 20.05-5201 854 20.05-5201 854 20.05-5201 854 20.05-5201 854 10.05-5201 854 40.05-5201 854 40.05-5201 854 40.05-5201 854 40.05-5201 854 40.05-5201 8554 40.05-5201 8554 40.05-5201 8554 40.05-5201 8554 40.05-5201 8554 40.05-5201 8554 40.05-5201 8554 40.05-5201 8554 40.05-5201 <td>Jam Shen 200 Line Capacity Jeen Line State 200 Line Shen 200</td> <td></td> <td>Try advore Mail event Alarts Care Type Ram Code Care Type All Sea All Mill Sea All Mill Sea All Mill Sea Statistics Mill Mill Sea Statistics Mill Sea Mill Sea Statistics Mills Mill Sea Statistics Mills Statistics Mills Statistics Mills Statistics Mills Statistics Mills Statistics Mills Statistics Mills Statistics Mills Statistics Mills Mills Statistics Mills Statistics Mills Statistics Mills</td> <td>Central Cate Central Cate C</td> <td></td> <td></td> <td></td> <td>* * ×</td>	Jam Shen 200 Line Capacity Jeen Line State 200 Line Shen 200		Try advore Mail event Alarts Care Type Ram Code Care Type All Sea All Mill Sea All Mill Sea All Mill Sea Statistics Mill Mill Sea Statistics Mill Sea Mill Sea Statistics Mills Mill Sea Statistics Mills Statistics Mills Statistics Mills Statistics Mills Statistics Mills Statistics Mills Statistics Mills Statistics Mills Statistics Mills Mills Statistics Mills Statistics Mills Statistics Mills	Central Cate C				* * ×
400 400 400 400 400 400 400 400 400 400	9550 9550 9550 9550 9550 9550 9550 9550	719 1109-320 1440 6745-3201 1440 6745-3201 1440 6745-3201 1440 6745-3201 1440 6745-3201 1440 6745-3201 1440 6745-3201 1440 1101-3201 1440 6745-3201 1440 1101-3201 1451 2455-3201 1452 2455-3201 1454 245-3201 1454 245-3201 1454 245-3201 1454 245-3201 1454 245-3201 1454 245-3201 1454 245-3201 1454 245-3201 1454 245-3201 1454 245-3201 1454 245-3201 1454 245-3201 1454 245-3201 1454 245-3201 1454 245-3201 1454 245-3201	Jam Shen 200 Line Capital Anna Line Shen 200 Line Shen 200		The advoce Mater event Alartis Case Type + > Case Type + > District Case Type + >	Demand Date Demand Date Demand Date 21406/021 21400		Hotel to Stack() + 10		
400 400 400 400 400 400 400 400 700 400 700 7	9550 9550 9550 9550 9550 9550 9550 9550	713 11-05-2021 44.01 14-05-2021 44.01 14-05-2021 75.05 24-05-2021	Ins Nov. 300 Line Caperty Area Line Mark 200 Line Mark 200 L		The subset Male	Cemand Cate Birchand Read-prime Birchand Cate Cemand Cate Birchand Cate Birchand			300 U 300 U	
400 400 400 400 400 400 400 400 400 706 706 706 706 706 706 706 706 706 7	9550 9550 9550 9550 9550 9550 9550 9550	7.53 11-0-323 3446 (76-522) 4435 (14-6-522) 75.5 21-6-522 75.5 21-6-522 75.5 21-6-522 75.5 21-6-522 75.5 21-6-522 4460 (12-0) 45.6 (12-0)	Inst Nex 300 Line Capacity Area Line March 200 Line March 2		The advoce Male event Alarts Care Type Ram Code Cear Type All Sea Marco Code Cear Type All Sea Marco Code Cear Type All Sea Marco Code Cear Type Marco Code Cear Type Marco Code Cear Type Marco Code Marco Mode MARCELLS	Central Cate Centr				

SIEMENS

- Graphical calendar template editor
- Management of calendar exceptions
- Different level of capacity allocations
- Calendar management module
- Flexible alert configuration window to detect plan issues

Opcenter Planning Interactive Stock Profile Viewer

Overview

Planner can access projected stock for each item (all BOM levels) with the possibility to manually adjust demand or production and then visualize the impact on projected and target stocks.



- Interactive stock profile per item
- Possibility to adjust manually demand or production
- Projected stock vs min, max or target stock
- Flexible zooming



Opcenter Planning Planning logics

Overview

Opcenter Planning can perform simulation in finite or infinite capacity mode using different planning rules such as move or constraint with the possibility to combine them. Opcenter planning considers the demand variability to set stock control parameters for each item based on Make-to-Stock (MTS) or Make-to-Order (MTO) logic.





- Finite of infinite capacity mode
- Consider demand variability using demand days of cover parameter
- Possibility to balance workload other multiple work center or constrain to a single work center
- MTS or MTS logics can be defined at item level
- MPS calculation at all BOM level
- Automated repair rule to address capacity issues

Sales Orders	23
Forecast	4
Stocks	2
Actual Scheduled	4
Min Order	5
Reorder	3
Net Qty	21
MPS Value	23

R	Calculate Stock	CTRL+H
	Calculate MPS	CTRL+M
₿	BoM Exploder	CTRL+B
₿	Calculate All	CTRL+MAJ+A





Constraint



Move





Opcenter Planning What if simulation

Overview

When a change in demand occurs in terms of quantity or delivery dates, you need to quickly assess if you can meet the new requirements.

You can import your demand changes into Opcenter Planning and create a new 'what if' plan. Your planning BoM will be exploded, and Opcenter Planning will show you if you have any capacity issues. In this case, you can work interactively to create an acceptable MPS.

Main Features

- Simulate using different planning logics, demand levels, or capacity models.
- No limitations in the number of scenarios that could be simulated
- Possibility to release a new scenario as a live plan at any time
- Comparison reports available

Plan Comparison

Item Code	: A1011			
LivePlan	MPS	Total Days Of Cover	MPS	Total Days Of Cover
6/11/2012		19		
6/12/2012	120	18	120	4
6/13/2012		17		3
6/14/2012		16		2
6/15/2012		15		1
6/16/2012	29	14	29	.58
6/17/2012	61	13	61	1.33
6/18/2012	50	12	50	2
6/19/2012		11		1
6/20/2012	90	10	90	4
6/21/2012		9		3.
6/22/2012		8		2
6/23/2012		7		1
6/24/2012	40	6	40	2
6/25/2012		5		1
6/26/2012	40	4	40	4
6/27/2012		3		3

SIEMENS

Opcenter Planning Measure planning efficiency

Overview

Opcenter Planning is proposing a set of standard reports and KPIs. It is using standard SQL reporting technology. Reports can be amended, or new reports can be added.

Opcenter SC is also providing a configurable alert module to detect any issues with MPS results

Main Features

- Standard Microsoft SQL reporting technology
- Items below or above stocks limits
- Capacity usage per resource
- Out of life item
- Days of cover of demand
- Plan comparison report

• ...



Find | Nex

of 1 🕨 🗏 🔶 🛞 🖨 🖬 🗐 🗸

02/02/2022 18:24:34

Find | Nex

elect Dataset LivePlan -

 4
 1
 of 1 ▶ №
 ♦
 (€)
 (⊕)
 (□)
 100%
 •

 vint Time:
 02/02/2022 18:25:54
 02/02/2022 18:25:54
 •
 •
 •

Capacity Utilisation by Planning Resource Group

Dataset:	147							
	Global Prep		Midlands		Sub C	ontractor	UK Plants	
	Total Capacity	y: Unconstrained	Total Capacity: Unconstrained		Total Capacit	y: Unconstrained	Total Capacity: 550 Constrain	
	Capacity Used	% Utilised	Capacity Used	% Utilised	Capacity Used	% Utilised	Capacity Used	% Utilised
11/06/2012	2098.17	00	270.00	00	1310.00	00	278.00	50.55
12/06/2012	9.00	00	240.00	00	180.00	00	232.00	42.18
13/06/2012	8.00	00	390.00	00			150.00	27.27
14/06/2012	250.00	00	330.00	00	730.00	00	220.00	40.00
15/06/2012	925.67	00						
16/06/2012	169.98	00	250.00	00	240.00	00	298.00	54.18
17/06/2012	179.68	00	340.00	00	1020.00	00	205.00	37.27
18/06/2012	592.83	00	260.00	00			290.00	52.73
19/06/2012	150.00	00	340.00	00			208.00	37.82
20/06/2012	246.00	00	350.00	00	760.00	00	192.00	34.91
21/06/2012	570.00	00	330.00	00	260.00	00	219.00	39.82
22/06/2012	320.00	00						
23/06/2012	409.98	00	310.00	00	530.00	00	236.00	42.91
24/06/2012	408.52	00	310.00	00	830.00	00	239.00	43.45
25/06/2012	254.00	00	310.00	00			236.00	42.91
26/06/2012	48.17	00	320.00	00	380.00	00	228.00	41.45
27/06/2012	40.67	00	320.00	00	220.00	00	222.00	40.36
28/06/2012	40.67	00	260.00	00	130.00	00	152.00	27.64

SIEMENS

Target Days of

Cover

5 5 5

5

5

Opcenter Planning Actual schedule

Overview

Actual Schedule allows importing or re-importing from a scheduler of the actual stock quantity for a specific item and date. This data can then be used to modify a plan to accurately portray current item quantities for certain dates, and affect future planning for items.

Using the Actual Schedule data is beneficial for ensuring accuracy, especially as plans can span a long period such as a month or so. Importing actual schedule data at the planning level will allow for managing the short-term plan horizon with a higher degree of accuracy. It will also allow locking production planned at the scheduling level within the planning system.

Main Features

- Actual Schedule data table
- Actual schedule import script
- Actual schedule event to implement PESP rules triggered by Reimport of actual schedule data.
- Planning options to define how MPS is being recalculated upon reimport of actual schedule data.

Actual S	Actual Schedule								
<u>S</u> ave (<	B_Save ∽ Undo ♂ Redo Edit ▼ View ▼ No filter selected ▼								
Item Code	Item Description	Stock Count Date	Qty						
<u>A</u> a 🗸	<u>A</u> a 🖌	= ~	= ~						
SKU1002	C. C. B. Large	06-11-2012	110						
SKU1002	C. C. B. Large	06-11-2012	65						
SKU1003	CCB 700g	06-11-2012	49						
SKU1004	Chefs Carrots 250g	06-11-2012	50						
Re-import Actual Scheduled									
Lock Time Buckets Before Latest Date									
O Lock Time Buckets for Matching Items and Dates Before Latest Date									
O Lock Time Bucket	s for Exact Matches on Ite	m and Date Only							

Planner: [LivePlan] Record 1023 of 1060 ×

F	Code Product		Day	Demand Date	Prodn Type 🔺
$\overline{\gamma}_{\mathbf{x}}$	<u>A</u> a ►	<u>A</u> a 🗸	<u>A</u> a 🗸	= ~	≜a Scheduled ➤ 🗐
> •	A1005	Carrot Batons 350g	Monday	06-11-2012	Scheduled
≻●	A1006	Green Bean Medlay	Monday	06-11-2012	Scheduled
≻●	A1011	Crunchy Veg Medley 250g	Monday	06-11-2012	Scheduled
≻●	A1012	Carrot Batons 600g	Monday	06-11-2012	Scheduled
≻●	A1013	Favourite Five 500g	Monday	06-11-2012	Scheduled
≻●	A1014	Favourite Five 250g	Monday	06-11-2012	Scheduled

SIEMENS

Advanced Scheduling Deep dive



Restricted | © Siemens 2023 | Siemens Digital Industries Software







Opcenter Scheduling Gantt view

Overview

The Sequencer is the heart of the scheduling system and contains the Calendar Editor, Schedule Overview, Editor, Plots, Trace Chart, and Hot Spots Grid windows. It establishes the shift calendar patterns for both primary and secondary resources, provides automatic and manual scheduling functions and carries out all finite capacity calculations.

Main Features

- Gantt view
- Operations dependencies display
- Filtered view per resource group
- Dynamic locating option through the Gantt chart
- Locking capabilities
- Highlight late operations, critical operations
- Automatic scheduling and drag & drop capabilities
- Built-in filtering with cross-table and user based configuration for improved efficiency and personalization

Value Propositions

- Gantt view
- Operations dependencies display





Opcenter Scheduling Tools, Staff and other constraints management

Overview

Staff and tooling (as other constraints such as space limitations, power constraint or tank/vessels capacities) can be define thanks to secondary resources within Opcenter SC.

- Opcenter SC can manage allocation of multiple constraint on a single operation.
- Each constraint can enable or disable for simulation purpose

- Finite capacity management of staff and tools
- Possibility to disable constraint for team or tool pool sizing simulation
- Possibility to allocate in calendar model for staff availability
- Possibility to allocate multiple staff to an operation
- Possibility to define staff usage on partial time for an operation





Opcenter Scheduling Material Constraint

Overview

When materials from one order are used by another, they are defined as dependent. It is quite common for ERP systems to generate an order for each part of the BoM structure for a product. To ensure that this dependency is utilised when generating a plan or schedule they must be connected in some way. The simplest way to do this is to make the start date of the dependent order the same as the due date of the producing order. However this does not work very well where the real constraints of the facility must be taken into account or delays occur.

Opcenter SC has features to connect orders together so it can take into account real constraints and unexpected delays automatically. SMC or 'Standard Material Control' is a function that creates links between orders (pegging of materials). These links can then be used by Opcenter SC to ensure that only when materials are available from one or more producing orders can the consuming orders connected to them by SMC start.

- Automatic pegging (links creation) with locking options
- Graphical user interface for material consumption/production analysis
- Display provisional shortages and unused materials
- Display links between production orders and customers' orders
- Projected stocks plots and stocks movements for all BOM levels





Opcenter Scheduling Sequencing Optimization

Overview

Opcenter SC has enhanced functionality to deal with complex scheduling problems. It offers additional optimizations rules that can be further customized for each application. Standard dispatching rules include those that attempt to Minimize Setup time, Minimize Late Orders, use a Preferred Sequence at each resource, Bottleneck Scheduling (Theory of Constraints) and Campaigning.

Rules can be made to be customer, product or resource specific and virtually any logic can be built into a customized scheduling rule. These can be built using PESP tool, a scripting language with standard building blocks, or by using a programming language such as VB.NET thanks to Opcenter SC API.

- Event based or order based sequencing rules
- Set of predefined APS rules available from standard configuration
- Possibility to built any logic within a customized sequencing rule
- Possibility to create multi pass sequencing rules thanks to PESP tool
- Possibility to apply different logic and constraint model to each resources, work centers or shop floors.







Opcenter Scheduling What if simulations

Overview

Opcenter SC the user has access to a number of reports that help him analyze a schedule or compare one saved schedule with another. These include: Order Analysis data, Order Comparison Data, Order Make span bar chart, and Order Net Change Summary.

Opcenter SC also contains comparison reports on a number of different indicators such as utilization by day and week by resource, by resource group and by secondary constraint.

Graphic comparison from Gantt chart display or comparison reports are available.

- Possibility to display in parallel 2 scenarios on the same Gantt chart.
- Comparison reports on orders, resources and scenarios
- No limitations in the number of scenarios which could be simulated
- Possibility to release a new scenario as live schedule at any time
- Possibility to upload any scenario to SaaS Viewer for stakeholder approval



Order Com	parison						
Base Line Sched	ule : Due Date						
omparative Sc	hedule : Priority						
riteria :	Due Date Pe	rformance					
Order No	Due Date	Priority	Net Ch	ange			
A001	61 Hours 30 Mins	249 Hours 40 Mins	188 Hours	10 Mins			
A002	93 Hours 13 Mins	95 Hours 11 Mins	1 Hours	58 Mins			
A003	153 Hours 12 Mins	133 Hours 19 Mins	19 Hours	53 Mins			
A004	128 Hours 31 Mins	129 Hours 19 Mins	0 Hours	48 Mins			
A005	10 Hours 29 Mins	12 Hours 17 Mins	1 Hour:	Order Comp	parison		
A006	52 Hours 48 Mins	68 Hours 12 Mins	121 Hours				
A007	101 Hours 12 Mins	11 Hours 28 Mins	112 Hou	Base Line Schedu	le : Due Date		
A008	108 Hours 40 Mins	35 Hours 32 Mins	73 Hou	Comparative Sch	edule : Priority		
A009	108 Hours 30 Mins	105 Hours 22 Mins	3 Hour	Criteria :	Order Cost		
A010	39 Hours 0 Mins	39 Hours 48 Mins	0 Hours	Order No	Due Date	Priority	Net Change
A011	62 Hours 8 Mins	77 Hours 56 Mins	15 Hour	A001	487.48	582.41	94.93
A012	101 Hours 50 Mins	59 Hours 56 Mins	41 Hour	A002	547.51	591.82	44.31
A013	7 Hours 46 Mins	8 Hours 34 Mins	0 Hour:	A003	306.86	282.74	24.12
A014	47 Hours 48 Mins	164 Hours 12 Mins	212 Hours	A004	156.25	165.42	9.17
A015	84 Hours 40 Mins	8 Hours 32 Mins	76 Hou	A005	744.45	738.22	6.23
A016	59 Hours 58 Mins	30 Hours 42 Mins	29 Hour	A006	357.79	347.86	9.93
	3			A007	511.90	588.60	76.70
				A008	154.19	196.25	42.06
				A009	571.78	523.41	48.37
				A010	562.37	583.97	21.60
				A011	302.27	267.61	34.66

Opcenter Scheduling Impact analysis & schedule repair

Overview

When things change, the tools are provided within Opcenter SC to clearly display the impact of the change (breakdown, material shortage, staff level change...).

- Schedule validation tool in case of manual changes (constraints and sequence checks)
- Automatic repairing tool
- Planning comparison reports to visualise impact of changes
- Staff level simulation with usage plots









Opcenter Scheduling Measure Planning Efficiency

Overview

Opcenter SC is proposing a set of standard reports and KPIs. It is using standard SQL reporting technology. Reports can be amended or new reports can be added.

Opcenter SC is also providing graphical KPIs based on lateness analysis, resource utilization, setup times, WIP, stocks levels, orders lead times ... Different levels of aggregation such as resource, work centre, shop floor and plant could be available.

Specific KPI's can be added thanks to our Opcenter API module if necessary.

- Graphical indicators and reports on due date adherence
- Utilization of resources
- Work to list
- Material shortages
- Work orders statistics
- Projected stocks plots
- Planning comparison reports to visualize impact of changes
- Staff level simulation with usage plots

Fle Lot Yew Sequence Look Window Help 『この・J・T、保守場点で語 時ののの習俗感点。 アマロ 日の ウ・マ・日間群人に回回 でに 4 『マッジ」Nofiler selected - 1955	&•© , ≣ ∎ \$;	jo te to	6%%;
『てきよいればすね』』を見ていた。 「でした」」で、 「でした」」で、 「でした」」で、 「でした」」で、		jo te to , 172 173 , 283	87676∓
0 12 + 12 Ho miler selected ↓ 10 =	0		
R COnserview X Colliteration X	7)		
Utilization (11-01-2000 22:06 - 17-01-2000 18:37)			^
Unavailable Setup Working Idle Over 01-2000 13-01-2000 14-01-2000 15-01-2000 00/00 00/00 00/00 00/00	100% 16-01-2000 00;00	17-01-2000 00;00	
Component Assembly 10013 85% 10038 8458 100% 100%	100% 100%	100% 100%	
Final Assembly 100% 100% 100% 84% 100% 100% 100%	160% 160%	10075 10075	
Metal Workers 50% 50% 51% 50% 50% 100% 50% 50% 50%	100% 50% 50%	100% 50% 50%	
Paint Sprayers 50% 36% 53% 38% 50% 50% 65% 50% 50% 100% 50% 50%	100% 50% 50%	100% 50% 50%	
Welders 50% 42% 659% 50% 40% 100% 50% 50% 100% 50%	100% 50% 50%	100% 50% 50%	
Component Assembly 100% 85% 100% 84% 100% 100% 100%	100% 100%	100% 100%	
Metal Worker 1 50% 50% 56% 50% 50% 100% 50% 50% 100% 50%	100% 50% 50%	100% 50% 50%	
Painting 50% 36% 5338 38% 50% 50% 6538 50% 50% 50% 50% 50% 50%	100% 50% 50%	100% 50% 50%	
Final Assembly 100% 100% 100% 84% 00335 00335 10335	100% 100%	10075 10075	
Welder 2 50% 49% 75% 50% 50% 100% 50% 50% 100% 50%	100% 50% 50%	100% 50% 50%	
Welder 1 50% 36% 5223 30% 50% 100% 50% 100% 50% <th< td=""><td>100% 50% 50%</td><td>100% 50% 50%</td><td></td></th<>	100% 50% 50%	100% 50% 50%	
Metal Worker 2	100% 50% 50%	100% 50% 50%	
Power 95% 00% 39% 95% 100% 100% 100% 100%	100% 100%	100% 100%	
Assembly Onerator			> *
Ready			



Opcenter Scheduling Operation Status/Progress

Overview

Getting shop floor data regarding real order progress is a must have to keep a schedule up to date. Deviations between schedule and real execution are identified very often for various reasons (machine breakdowns, late PO, staff availability,...) and then needs to be taken into accounts before recalculating and releasing a new schedule to the shop floor. In Opcenter SC you can enter (manually or automatically integrated) a mid-batch update for a batch at an operation. For example you may wish to enter the quantity complete and time for part of a batch. Opcenter SC re-calculates the process time per item. It also provides a convenient and visual way of tracking the progress of an operation. As a mid-batch quantity and time is entered for an operation, part of the bar color will change equivalent to the progress made. The change color is definable by the user.

Main Features

- Automatic integration of order progress based on shop floor data
- Possibility to receive real time messages/updates from MES for order completion
- Possibility to display order progress graphically on each bar scheduled on the Gantt
- Possibility to highlight operation currently in progress or completed
- Scheduled vs actual time comparison possibility



SIEMENS

Opcenter Scheduling Distributed Scheduling – Multi Factory/Shop Floor synchronization

Overview

We understand the nature of modern business means operations are often split over several sites. Whether it is the complexity of the work or the specific knowledge of processes or customers held by individuals, or even basic organizational or geographic issues, the responsibility for making scheduling decisions is often divided.

That's why APS is equally at home scheduling with multiple planners as it is with a single user.

- A single application can standardize the shop floor and extend well into the supply chain execution model for a diversified corporation
- Reduce uncertainty, conflict, error & misunderstanding in coordinating tasks across the organization
- Knowledge rises from individual level to the group level minimizing risk of single point of failure in complex scheduling while improving dynamic decision making
- Schedulers communicate with common purpose





Opcenter Scheduling Order Enquiry (CTP)

Overview

Where there is an inbuilt table of routing information, a (possible) multi-level BoM and sub-assemblies, the user can use the Order Enquiry button to find the earliest delivery date for a batch of product.

Where a multi-level BoM and sub-assemblies exist, Opcenter SC will leverage the routing and BoM explosion features, allowing for orders to be created for all of the required items which are currently in a shortage state.

- Unlimited number of enquiries
- CTP on material/semi finished/Finished product level
- BOM explosion





Opcenter Scheduling Unattended Scheduling

Overview

It allows automatic or periodic maintenance and repair of a schedule without the need for a user to interact with it. Scheduling tasks are run by a console application. Its execution, without dialog boxes, produces the same results as the standard application.

Main Features

There are four main console executables

Sequencer Console: The Sequencer Console allows a user to generate and modify a schedule without having to open the schedule. Users are able to generate a schedule using the scheduling directions and order or by shipped and user-created APS Rules.

SMC Console: it is used to perform any SMC Rules that have been defined in the Configuration. It is used to perform Material Control **Import/Export Console**: It allows data to be imported or exported by running Import/Export Scripts.

PESP Console: it allows the running of PESP scripts.



ConsoleSequencer.exe -c "C:\Users\Admin\Documents\Opcenter APS Configurations\Opcenter SC Ultimate\Opcenter SC Ultimate.prcdf" -dataset Schedule -d Forward -o Priority



Opcenter Scheduling SaaS and Hybrid offering and evolution

Overview

The classic on-premise product is being joined by a new cloud-based product line.

Cloud Companion Viewer

Standalone APS SaaS

Anywhere Viewer Main Features

Interactive SaaS browser-based Gantt Chart Visualization Utilization diagram Multiple What-if Scenarios Analysis Multi-plant

Opcenter APS SaaS Main features

Full SaaS Opcenter Scheduling Capabilities Natively integrated with other Opcenter SaaS modules Multi-plant / Multi-User



IT Integration & Security



Restricted | © Siemens 2023 | Siemens Digital Industries Software

Opcenter Scheduling ERP/MES integration

Overview

Opcenter SC provides a wide range of features that enable you to integrate data from an almost limitless range of sources including file exchange (txt, csv, XML, ...) or databases such as SQL Server, Oracle or OLE DB data sources.

To enable support for those scenarios Opcenter SC provides a consistent, high performance and extensible integration pipeline built using Microsoft® ADO.NET. It provides five main technologies to support data integration with 3rd party systems.

Typically, a Opcenter SC configuration will make use of many, if not all of these technologies to provide a complete solution. Web services can also be used to import or export data to or from Opcenter SC

- File exchange or Database connection
- On user demand, preschedule or Event driven (real time) integration
- Graphical mapping
- Import/Export scripts





Opcenter Scheduling MOM Integration

Opcenter Scheduling is integrated with the following MOM Portfolio products :

- **Opcenter Execution (MES)**
 - Medical Devices and Diagnostics
 - Electronics
 - Discrete
 - Process
 - Semiconductors
- **Opcenter Scheduling SMT** (fka Valor LX)
- Opcenter RD&L
- Opcenter Reporting (PoC)
- Opcenter Planning





Offering a solution with native and effective positioning in the manufacturing landscape



Opcenter Scheduling Security module

Overview

The security module allows Opcenter Scheduling users to connect to it and manage authorizations within the system.

There are 3 Authentication Modes:

- None; Security module is disabled
- Basic: User details are stored in the database
- Windows: Users are granted permission to Opcenter Scheduling but must authenticate with the domain to gain access.

With the role setup within the Opcenter Scheduling security module, it is possible to define the level of access for each data table and link it to each user profile. Each user will have the possibility to access only the data based on their role permission. Also when data is loaded from the Database server to the client, it is possible to encrypt these based on standard SQL server mechanism (SSL).

Main Features

- Managing permissions
- Possibility to manage access via LDAP dictionary
- Data encryption possibilities
- User specific workspace



General

Logins

Roles



Outlook Opcenter APS



Restricted | © Siemens 2023 | Siemens Digital Industries Software

APS Release Timeline





Thank You!

