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Smarter decisions, better products.





- SPLM战略方向概述
- 产品配置简介
  - 产品配置概念概述
  - 定义和管理产品线
  - 选项字典
  - 跨产品重用选项和规则
  - 配置规则的类型
- 配置实例
- 功能发布版本
- 预览 未来新功能

# 集成产品定义 – Integrated Product Definition (IPD) 主要能力

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# 虚拟与现实世界的一体化

#### 配置, 体系结构和程序管理

- Single reusable definition of variability
- Leverage product architectures to organize and navigate variability
- Configurator rules define option compatibility

#### 产品明细, BOM管理和生产制造



- Single, central source for Part Masters
- Coordinated evolution and downstream consumption of the product design and the physical product BOM
- Integrated BOM serving Engineering, Manufacturing, After Sales, etc.

#### 设计**数据管理**



- Flexibility in how a product is organized to support a variety of disciplines
- Recipe driven contexts for up to date background data
- Optimized for concurrent design, performance, and scalability

### 变更



Change management that coordinates the impact across architectures, configurations and variability, designs, and physical Bills of Materials

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### 什么是产品配置?

挑战:公司今天都面临越来越大的压力,因为产品种类越来越多,客户对产品变形要求越来越高

解决方案:产品配置能够使得客户能够通过一套产品来清晰的描述和管理他们想要的产品变形;

通过以下方式可以最大限度的重用 和提高产品的变形度:

- 始终在一个产品中管理所有的变形;
- 管理企业产品不同阶段的所有选项构成的变形"字典";
- 对每一个产品或产品模型,准确的指定相关/允许的选项子集;
- 用户界面基于是网格、表格—更加直观、高效;
- 实现配置数据和产品数据的配置分开管理;
- 允许市场营销用户、工程师和甚至经销商和销售工程师来定义、反馈并通过产品定义过程来影响
   产品的可变性;





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#### 产品模型和用户选择

用户根据需求来选择最适合自己的产品模型:

- 特征
- 成本

不需要客户进行专业定制

- 客户决定确定需要的特征
- 基于最好的选配来确定产品模型
- 用户可以对产品做额外的选择



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#### 产品选择的层级影响配置的规则

- 用户的一个选择:产品模型
- 产品规则只用于内部产品开发使用
- 配置规则来指导用户选择适合自己的 产品
- 通过规则产生反馈,使得用户可以指 定正确的选择





#### 核心概念 – 选择字典和产品线



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### 核心概念 – 选择族种类

选择族(Option Families)代表了配置问题,选择值(Option Values)是回答这些问题的允许值

# 选择族和选择值的类型如下:

文本	Option Values are text strings; String option values are generally an enumerated list
<u>整型</u>	Option Values are integers
浮点数类型	Option Values are any numeric value
布尔类型	Option Values are True and False
日期类型	Option Values are dates (desired date display format configurable)
自由形态	For any option family type, allow the values to specified by free user entry, optionally within a defined range



### 核心概念- 配置规则

对每个产品来说,通过配置规则来控制允许/必需的选项选择的组合

Availability Rule	指定分配到产品环境的选项是否允许应用到一个指定的产品模型上 ; 只有可用的选项可以 显示在产品模型的用户操作界面上
	假设在配置中用户或包含的规则没有定义这些选项 , 系统将指定值 ; 一旦制定后 , 用户 可以将其覆盖掉。
🚈 Inclusion Rule	当指定的选项被选择以后,额外的选项会被自动添加在配置中
Exclusion Rule	当指定的选项被选择以后,额外的选项会被自动排除在配置中
💒 🛛 Feasibility Rule	(未来)当选择特定选项后,额外的选项就不允许选择了;用户将会收到违反的反馈, 并且必需要手动更新配置来履行规则

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# 核心概念 – 引导配置和保存配置



#### 应用保存好的配置

- 1. 在Guided Interactive Configuration视图(左图)来调整选 择;
- 2. 在Saved Variant Rule (下图)视图中加载;

🔨 Hon

3. 在Content Application (比如4GD)中来配置产品内容

		🗧 Home Use Printer Solutions (Variant Expression Editor) 🗙			
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		Rule Criteria			
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Lines - Danie Duielet	United Denie Duinks Configuration	White reltlack Text			× *
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Home Photo F7	Home Photo E7 Configuration	2" Color LCD		**	1 4
Home Photo E2	nome Photo Ez Coningaradori	4" Photo Crisp LCD		× .	× *
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	nome front to configuration	Jet Black		*	
Scan Wizard Pro	Scan Wizard Pro Configuration	Matte Grey Midnisht Blue	1		11
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Users III and Costana	Users Illerk Costers Configuration	Legal - 6.5"×11" - 6.5"×14"			- 2
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		Home Work Custon			
		Home Work Pro, Supports of your Work at Home needs		*	
		Scan Waard Pro, Keep business cards and expense receipts managed with no fust on your desits	v		<i>.</i>

**Saved Configurations** 

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# 核心概念 – 配置内容和数据的独立性



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### 核心概念 – 配置内容和数据的独立性



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#### 配置关键点: 总结和提取细节



# How does product data know what Options and Rules are relevant? 产品数据如何知道选项和规则是相关的



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# Teamcenter配置规则的核心

Teamcenter配置规则包含3个关键的要素来优化效率和重用:



# Teamcenter配置规则的核心

Teamcenter配置规则包含3个关键的要素来优化效率和重用:



# Configurator Options and Rules: Efficient Notation 配置选项和规则:高效工具

 在很多情况下一个单独的入口或引用会用来总结多个选项,通过总结(Summary)、打包选项 (Package Options)和总结/打包产品模型来实现这个需求;

#### **Summary Options**

 Example: Scanners may include a camera, Some display types are shatterproof. If a camera option is selected, must have a shatterproof display

IF	Accessories =	MUST	Display Type =		
	Includes Camera	HAVE	Shatterproof Displays		

Summary Product Models

 Example: Advanced Dust / Moisture Rating only offered for Heavy Duty Models

Product Models =	MUST	Dust_Moisture Rating
Heavy Duty	HAVE	= IP69 OR IP71

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# 配置选项和规则:高效工具

 在很多情况下一个单独的入口或引用会用来包含多个选项,通过总结(Summary)、打包选项 (Package Options)和总结/打包产品模型来实现这个需求;

Package Options

#### **Summary Options**

 Example: Scanners may include a camera, Some display types are shatterproof. If a camera option is selected, must have a shatterproof display

IF	Accessories =	MUST	Display Type =		
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#### Summary Product Models

 Example: Advanced Dust / Moisture Rating only offered for Heavy Duty Models

Product Models =	MUST	<b>Dust_Moisture Rating</b>
Heavy Duty	HAVE	= IP69 OR IP71

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Example: Mobile Warehouse Package includes several GPS / Wireless options **GPS = Advanced Locate** Mobile IF Wireless = WLAN AND Warehouse SET SELECTED HSPA+ Package **Remote Locator = Yes** Package Product Models Typically used if there are specific "key" option values that are always included for this model such that they help define the model Siemens PLM Software

Offer a set of option values that comes

for user when package is selected

packaged together and are automatically set

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# 配置对象的影响分析

						En 000025-Printer Solutions-Home Lice Product Line (Variant Onlines)
						Search Text Q Q Mere: Used Depth: One Level
						r∉ Scan/001
						Rule: All Display: Object
😼 000025-Printer	Solutions	s-Hom	ie Use	Produ	ct Line	Filter by Item 💽 at All Levels 💌 🗖 Indude Subtypes
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E Models     Pr     Device Usage     Fa	amily Group	000025		String	NO	1000025-Printer Solutions-Home Use Product Line-
E E Functions Op	ption Family	Solution		String	Yes	1000020-Home Use Printer Solutions-
ې Print Op	ption Value					Solution Printer-Printer Solution Ontion Dictionary
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						🖶 DE000044/001;1-Scanner Lid—

#### 000025-Printer

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I Functions/001

### 举例:打印机解决方案产品线



Home Basic Home Photo EZ Home Work Pro Home Work Custom Scan Wizard Pro Scan Wizard Portable

Small Office Desktop Office Mobile Workstation Commercial Heavy Duty Commercial Point of Sale

#### **Market-Facing Product Models**

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# 举例:打印机解决方案 构建选项

- 公司为打印机生产线来为市场提供多个特征定义
  - 要提供什么类型的产品模型?
- 定义顾客面临的选项:
  - 顾客如何如何使用机器?
  - 媒介的类型和大小?
  - 顾客会用打印机做什么,打印文档或照片?打印内容是黑白或者 彩色?
  - 这台机器使用的频率有多大?
  - 顾客需要无线网络吗?
  - 等等...
- 基于顾客选择和不允许的选项组合来定义和默认包含的选项内容
- 逻辑分组的组选项:
  - 由配置用户来集中管理
  - 提交并由顾客选定

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Home Use Printer Solutions (Variant Options) 🗙	Printer Solution Op
Home Use Printer Solution	าร
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Home Use Printer Solutions	Configuration Prod
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Home Basic	Product Model
Home Basic Bright	Product Model
Home Photo EZ	Product Model
Home Work Custom	Product Model
Home Work Pro	Product Model
Scan Wizard Portable Slimline	Product Model
a Scan Wizard Pro	Product Model
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e Print	Option Value
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Commercial	Option Value
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E Custom Print Rate - Pages Per Day?	Option Family
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40 page per min	Option Value
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Slack Only	Option Value
Slack and Color	Option Value
🚈 Photos	Option Value

Family Group

Option Family

Option Value

Option Value

Option Value

Option Value

Option Family

Option Value

Option Value

Option Value

Option Value

Family Group

Option Family

🖂 🍺 Scanner

Scanner Primary Use

Photos

🐗 Flatbed

🚈 None

😑 🍺 Transfer / Storage

🖃 🗐 Data Transfer

🐗 Roller Feed

🖂 🗐 Scanner Type

B&W Documents

Color Documents

🐗 Varied (All Purpose)

🐗 Multi-Page Feed

# 举例:打印机 / 扫描仪解决方案 产品线详细分解

Product Line	Product Model	Marketing Description
Home Use Printers / Scanners	Home Basic	Easy-to-Setup, Easy-to-Use; All the basics you need for home use with no frills, no fuss
	Home Photo EZ	Optimized for all your photo needs. Adjust photos and print right from camera or storage card
	Home Work Pro	Supports all your Work at Home needs
	Home Work Custom	Choose exactly the Work at Home features you want
	Home Scanner Wizard	Keep business cards and expense receipts managed with no fuss
Commercial Printers / Scanners	Small Office Desktop	Straightforward, Full-Featured Desktop Unit
	Office Mobile Workstation	Robust and Reliable Office Support: High Throughput, Low Maintenance Free Standing
	Commercial Heavy Duty	High Capacity, Heavy Duty for High-Traffic Use
	Commercial Point of Sale	Heavy Duty Pay-Per-Use Print / Scan / Copy / Fax

#### Home Use Printer Solutions

ID	Туре	Description
🖃 🌆 Home Use Printer Solutions	Configuration Product Context	
🗆 / 🔄 Model	Product Model Family	
🚈 Home Basic	Product Model	Easy-to-Setup, Easy-to-Use - All the basics for home use with no frills, no fuss
🚈 Home Basic Bright	Product Model	Home Basic with Gloss Red Body
🚈 Home Photo EZ	Product Model	Optimized for photo needs. Adjust & print right from camera or storage card
🚈 Home Work Custom	Product Model	
🚈 Home Work Pro	Product Model	Supports all your Work at Home needs
🚈 Scan Wizard Portable Slimline	Product Model	Keep business cards and expense receipts organized on the go
🚘 Scan Wizard Pro	Product Model	Keep business cards and expense receipts managed with no fuss on your desktop

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# 打印机解决方案举例 产品线子设置和可变形的重用

	8 Printer Solution Option Dictionary			🐞 Home Use Printer Solution	s	•	Home Use Printer Solutions (Avail	ability View) 🔀	
	ID  Printer Solution Option Dictionary	Type Configuration	Droduct	ID	Type Configuration Prod		W Home Use Printer Solution	s 🗦 / > kome B	Basic/001
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	re r en	Option Value		Home Photo EZ	Product Model		E Enctions	Option Family	
Family (	🖷 Scan	Option Value	(defined within	Home Work Custom	Product Model		🖷 Fax	Option Value	
Groups	🔎 🖃 Intended Use	Option Family	product line)	Home Work Pro	Product Model	_	🖛 Print	Option Value	
Groups	asual Home 🖉	Option Value	produce mie)	Scan Wizard Portable Slimline	Product Model		差 Scan	Ontion Value	
	Commercial	Option Value	_	Scan Wizard Pro	Product Model			Option Family	
	Professional Home	Option Value		E Bunctions	Pamily Group	_	E of plack and white LCD	Option Family	
	💌 🃂 Printing	Family Group			Option Value	_		Option value	
Option /	E Custom Print Rate - Pages Per Day?	Option Family	_	v≡ r ux v≡ Print	Option Value		🖂 📰 Data Transfer	Option Family	
Eamilian	E := Ink Cartridge Capacity	Option Family	_	√≣ Scan	Option Value	_	🐗 USB DirectConnect	Option Value	
Families	🗢 100 page	Option Value		🖂 📄 Intended Use	Option Family		🖂 🗐 🚍 Scanner Type	Option Family	
	v≡ 200 page	Ontion Value		🛋 Casual Home	Option Value		🐗 Flatbed	Option Value	
	↓ = 000 page	Option Value		🐗 Professional Home	Option Value		□ 💷 Printer Lise	Ontion Eamily	
	E I E Print Volume	Option Family		🖃 🍺 Printing	Family Group		Black and Color	Option Value	
	🐗 5 page per min	Option Value		I≡ Custom Print Rate - Pages Per Day?	Option Family			Option Value	
	🛋 20 page per min	Option Value	Allocato	□ i≡ Ink Cartridge Capacity	Option Family			Option value	
	🐗 40 page per min	Option Value	Allocate	√≡ 100 page	Option Value	Specify Options	IIIIII Scanner Primary Use	Option Family	
	🖂 🗐 🚍 Printer Use	Option Family	Allowed Option	✓= 200 page	Option Value		🐗 Varied (All Purpose)	Option Value	
	🖷 Black Only	Option Value		v≕ 500 page	Option Value		🗐 Button Type	Option Family	
	and Color 🗸 🖉	Option Value	Groups, Families	Print Volume	Option Family		🐗 White w/Black Text	Option Value	
	r Photos	Option Value		s page per min	Option Value	Product Model	E Intended Lise	Option Eamily	
	E 📴 Scanner	Family Group	and values	a poge per min	Option Value			Option Value	
	E Scanner Primary Use	Option Family		🐗 40 page per min	Option Value				
Option	B&W Documents	Option Value		🖃 🗐 🚍 Printer Use	Option Family		🖃 🗐 Storage Type	Option Family	
Values	Color Documents	Option Value		🖷 Black Only	Option Value		🐗 Embedded Memory 1GB	Option Value	
values	Photos	Option Value	—	and Color 🖛	Option Value		🖂 🕸 Ink Cartridge Capacity	Option Family	
	Scapper Type	Option Family		🖷 Photos	Option Value		🐗 100 page	Option Value	
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	Multi-Page Feed	Option Value	_	E Scanner Primary Use	Option Family		差 5 page per mip	Option Value	
	a None	Option Value		Baw Documents	Option Value	_		Option Family	
	差 Roller Feed	Option Value		Photos	Option Value	-		opdon Family	
				Varied (All Purpose)	Option Value	I	🗲 Letter - 8.5" x 11"	Option Value	I
				E E Scanner Type	Option Family				
	公司诜顶空曲			Flatbed	Option Value	_			
				🐗 Multi-Page Feed	Option Value		家田基本产品模	型的可用	洗伍
				v None	Option Value				
				🐗 Roller Feed	Option Value				

家用打印机产品线

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# **打印机解决方案-产品模型和值分配** Demo 1

# 你将看到:

- 打印机选项字典中含有不只是对家用打印机还有对商用打印机生产线的所有变形内容(选项族和选项值)
- 我们将根据家用打印机解决方案的产品线来定义与产品线相关的可变形内容。这个工作是通过从字 典拷贝/粘贴或者拖放选项到产品线来实现的;
- 这种场景的起始是系统中已经定义了许多家用打印机解决方案产品线的许多可用的变形;然后从中 定义分配我们想要的配置;
- 用户可以多选或配置单个选项值、选项族或者选项族组;
- 如果在字典中拥有大量的选项族和选项值的集合,可以用应用文本检索来快速定位到所感兴趣的内容;



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# **举例:家用打印机解决方案** 配置规则举例

#### 尽管没有定义产品模型过滤,无线网络仅仅对家用专业 工作和扫描便携设备可用,因为只有这两种产品模型符 合前置条件。

Rule Type	Applicability Pre-Condition (Optional)	Constraint	Model Filter (Optional)
Inclusion	Wireless Networking = Yes	Data Transfer = Wireless	
Default	Function = Scan AND Intended Use = Casual Home	Scanner Type = Flatbed	Model = Basic Home OR Home Work Pro
Exclusion	Function = Scan	Scanner Type != None	
Exclusion	Intended Use = Casual Home	Print Volume = 30 page/min OR 50 page/ min	
Exclusion	Intended Use = Commercial	Machine Color = Midnight Blue OR Deep Red	

and the second s	2		E 🕄 🗳
Home Use Printer Solutions > H	lo	me	Use Printer Solutions (Exclusion Rules)
Exclusive Constraint Applicability Model			
Option	101186	10187	
🗆 Scanner Type			
None	×		
- Power			
Rechargeable		0	
Exclusive Constraint: Power != Rechargeable Applicability:			
Model: Model = 'Scan Wizard Portable Slimline'			
Configurate	0	r F	Rule Grid View

2	Home Use Printer S	olutions (Exclusio	n Rules) 🗙				
	- 🕻 Home	Use Prin	ter Solutions				
	Group: 🔭 Family:	: 🔭 Value: 💌	🔽 Info 🗹 Warning 🔽 Error 🛛 🔍 Search				
	ID	Severity	Message	Exclusion Expression	Applicability Ex	Model Expression	<b>A</b>
	186	Error	If Function=Scan then Scanner Type cannot be None.	'Scanner Type' = None	Functions = Scan		Τ
	187	Error	Rechargeable Power is required for this model.	Power != Rechargeable		Model = 'Scan Wizard Portable Slimline'	
		*	*	*			
E		1					11

配置规则列表视图

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# **打印机解决方案 – 可用性和约束** Demo 2

### 你将看到:

- 可用性 –通过前面为家用打印机解决方案配置的可变形性,我们可以更进一步的限制每个产品模型中 哪些选项族和选项值是可用的;
- 下一步将会看到各种类型的配置约束,并且了解选项视图、约束列表视图和网格视图之间的相互工作 的逻辑;
- 在不同的地方可以让用户来查看同一形式的约束表达式,这样使用起来更加方便。
  - 列表视图
  - 网格视图中的图标
  - 在网格视图底部显示的布尔表达式
  - •标准的Teamcenter总结视图



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## 打印机解决方案-配置保存和交互 Demo 3

#### 你将看到:

- 创建和保存配置、练习使用配置规则;
- 保存的配置
  - 在网格视图中一起查看配置的列表和正确的选择
- 执行交互配置 通过带规则的选项选择流程来获取指导,有2个选项:
  - 按需模式
  - 指导配置模式







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# 带可变形的合格的产品数据

CD000001;1-Printer Solutions (Content Explorer) 🗙 🛕 Content Explorer								
A > @ CD000001;1-Printer Solutions > @ Parti Working(Current User); Any Status  No Effect	tion Scheme Functional Qualify ivity 🔞 No Variant Configuration	Architect ontent (DI	ure (Partitions Es) with Variar	s) and Engine nt Conditions	eering s			
Object	Variant Formula	Category	Туре	Effectivity Formula				
CD000001;1-Printer Solutions			Collaborative Design					
PTN000001/001;1-Printer			Partition Functional					
PTN000015/001;1-Catridge Assembly	[Solution_Printer]Functions = Print		Partition Functional					
PTN000016/001;1-Ink storage			Partition Functional					
🖶 DE000020/001; 1-Small	[Solution_Printer]'Ink Cartridge Capacity' = '100 page'	Promissory	Design Element					
🖶 DE000021/001; 1-Medium	[Solution_Printer]'Ink Cartridge Capacity' = '200 page'	Promissory	Design Element					
🖶 DE000022/001; 1-Large	[Solution_Printer]'Ink Cartridge Capacity' = '500 page'	Promissory	Design Element					
🖶 DE000023/001; 1-Extra Large	[Solution_Printer]'Ink Cartridge Capacity' = '1000 page'	Promissory	Design Element					
PTN000017/001;1-Printer Ink			Partition Functional					
🖶 DE000024/001; 1-Black and Color	[Solution_Printer]'Printer Use' = 'Black and Color'	Promissory	Design Element					
🖶 DE000025/001; 1-Black	[Solution_Printer]'Printer Use' = 'Black Only'	Promissory	Design Element					
PTN000018/001;1-Output			Partition Functional					
DE000026/001; 1-5 pages per minute	[Solution_Printer]'Print Volume' = '5 page per min'	Promissory	Design Element					
DE000027/001; 1-20 pages per minute	[Solution_Printer]'Print Volume' = '20 page per min'	Promissory	Design Element					
🖶 DE000028/001; 1-40 pages per minute	[Solution_Printer]'Print Volume' = '40 page per min'	Promissory	Design Element					
PTN000025/001;1-Housing			Partition Functional					
🖶 DE000040/001;1-Bottom Housing - Grey	[Solution / Printer [2006-07-01T00:00:00+00:00 - 2007	Promissory	Design Element					
🖶 DE000041/001; 1-Bottom Housing - Red	[Solution / Printer [2006-07-01T00:00:00+00:00 - 2007	Promissory	Design Element					
🖶 DE000042/001; 1-Bottom Housing - Black	[Solution / Printer [2006-07-01T00:00:00+00:00 - 2007	Promissory	Design Element					

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# 应用选项配置来定义产品内容

CD000001;1-Printer Solutions (Content Explorer) 👷 🚺	Content Explorer
<u>م</u>	🖥 🏦 🍪 🥙 😘 🎦 🖏 🔁 Filter Text
🔪 > 🃦 CD000001;1-Printer Solutions 🗦 🗊 Parti	tion Scheme Functional
Working(Current User): Any Status 📧 No Effect	ivity 🕅 No Variant Configuration
Working(current osci), Any Status Vario Enecc	
Nert	Variant Formula
CD000001:1-Printer Solutions	Vananci ornidia
PTN000001/001:1-Printer	
PTN000015/001:1-Catridge Assembly	[Solution Printer]Functions = Print
PTN000016/001:1-Ink storage	
BE000020/001:1-Small	[Solution Printer]'Ink Cartridge Capacity' = '100 page'
B DE000021/001:1-Medium	[Solution_Printer] Int cartridge Capacity' = '200 page'
PE000022/001:1-Large	[Solution Printer] Ink Cartridge Capacity = '500 nane'
PE000023/001:1-Extra Large	[Solution Printer]'Ink Cartridge Capacity' = '1000 name'
HELPTN000017/001:1-Printer Ink	too page
B DE000024/001:1-Black and Color	[Solution_Printer]'Printer Use' = 'Black and Color'
B DE000025/001:1-Black	[Solution_Printer]'Printer Use' = 'Black Only'
E PTN000018/001:1-Output	
DE000026/001:1-5 pages per minute	[Solution Printer]'Print Volume' = '5 page per min'
DE000027/001:1-20 pages per minute	[Solution Printer]'Print Volume' = '20 page per min'
DE000028/001:1-40 pages per minute	[Solution Printer]'Print Volume' = '40 page per min'
E #LPTN000025/001:1-Housing	
DE000040/001:1-Bottom Housing - Grev	[Solution / Printer [2006-07-01T00:00:00+00:00 - 2007
DE000041/001:1-Bottom Housing - Red	[Solution / Printer [2006-07-01T00:00:00+00:00 - 2007
DE000042/001:1-Bottom Housing - Black	[Solution / Printer [2006-07-01T00:00:00+00:00 - 2007
DE000044/001:1-Scanner Lid	[Solution Printer]Eunctions = Scan
B DE000045/001:1-Top Housing	
E LPTN000004/001:1-Scapper	
E #LPTN000005/001:1-Scanner Bed	
B DE000057/001:1-Scanner Bed Std.	
E PTN000006/001:1-Scanner Optics	
DE000058/001:1-Scanner Optics Standard	
PTN000019/001;1-Fax	[Solution Printer]Functions = Fax
PTN000020/001;1-Storage and Data transfer	
E PTN000021/001; 1-Data Transfer Assembly	
EDE000034/001; 1-Wireless Assembly	[Solution Printer]'Data Transfer' = Wireless
DE000035/001;1-CAT5 Assembly	[Solution Printer]'Data Transfer' = 'CAT 5 Wired Network'
PTN000022/001; 1-Memory Storage	
E PTN000023/001:1-Embedded	
E PTN000024/001:1-External	
PTN000026/001;1-Paper Feeder	
🖶 DE000046/001; 1-Intake Gear	1
BE000047/001;1-Gripper	
E PTN000027/001; 1-Print Mechanism	[Solution_Printer]Functions = Print
BE000043/001; 1-Paper Holder	- ·
DE000051/001; 1-Print Roller	
E000052/001;1-Cartridge System	
DE0000E2/001+1 Distance Cride	

#### Variable Product Definition – **Home Printer Solutions**

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Variant

**Option Selections -Saved Configuration** 

Siemens PLM Software

#### 覆盖多个已保存的配置



#### @ CD000001;1-Printer Solutions (Content Explorer) > Custom Configuration

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#### 基于选择的内容配置

- 在任何配置中可以选择一个内容来查看和它共存的其他内容;
- 系统构建了一个针对产品的所有选择内容的变形条件和解决方案的集合
- 配置视图会自动基于选择的内容填入;通过这种方式,可以捕捉保存的配置(变量规则) 便于将来应用

E PTN000028/001; 1-PaperTray		
E PTN000029/001;1-Body		Update Design Element
E . PTN000025/001; 1-Housing		Configure based on selection(s)
🖶 DE000040/001;1-Bottom Housing - Grey	[Solution / Printer [2006-07-01T00:	Subscribe
🖶 DE000041/001; 1-Bottom Housing - Red	[Solution / Printer [2006-07-01T00:	Subscription Manager
Black DE000042/001; 1-Bottom Housing - Black	[Solution / Printer [2006-07-01T00:	Subscriptor Manager
🖶 DE000044/001; 1-Scanner Lid	[Solution_Printer]Functions = Scan	📮 Add To Favorites
📇 DE000045/001; 1-Top Housing	[Solution_Printer]Functions I= Scan	Pro

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#### **打印机解决方案- 变量条件, 配置保存交互和选配** Demo 4

### 你将看到:

- 首先我们将看到家用打印机产品线的产品分解。这个包括了用于配置不同类型的打印机的所有设计 元素。
- 基于当前存在的配置来加载:
  - 单个保存的配置
  - 覆盖彼此重叠的多个配置
- 通过交互的配置视图可以做到
  - 基于保存的配置来加载和配置产品
  - 通过两种工作模式来交互配置产品类型
- 为产品数据应用配置
- 影响分析
  - 基于选择的内容来配置



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# 发布版本



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# 产品配置预览-未来能力

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Smarter decisions, better products.

#### **Preview: Upcoming Capabilities**

Guided Configuration that prevents user from invalid choices

- At 10.1.3 Guided Configuration view evaluates constraints only when user is switching between groups.
- Due to significant optimizations we' ve made to the solve engine, rules evaluation will be done upon each selection
- In addition to applying the existing rules that directly impact the configuration (setting defaults and applying inclusion rules), the system will evaluate all rules and hide or grey out any selections that have become invalid
- System will also distinguish between selected that have been set by user vs. those set by system
- Thus, an end user like a Customer, Dealer, or Sales Engineer will be let through the whole configuration process assured that they should not have to see or debug errors and that there will always be a valid configuration path remaining for them based on the selections they' ve made so far

#### Available with 10.1.5 / 11.2.1 Unrestricted © Siemens AG 2014

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# **Preview: Upcoming Capabilities** Enhanced Expression Editor

- Grid-based expression editor re-oriented for more straightforward at-a-glance evaluation and editing of multiple rules
- Model Filter, Pre-Condition, and Constraint Expression can all be seen together in grid view

### Available with 10.1.5 / 11.

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🞐 Summary 😤 000025-Printer Solutions-Home Use Product Line (Variant Expression Editor) 🗙 🛛 🕀 🖃 🛫	Filter	r Tex	đ				Pro	Juct
😿 000025-Printer Solutions-Home Use Product Line > 000025-Printer Solutions-Home Use Product Line (Variant Constraints)								
	Т							
		<del>1</del>	5	151	12	2	162	<u>8</u>
<b>D</b> -Y	2	Å.	St.	2	Å.	ã	2.	2
Option		_	_	-	_			_
Home Basic, Easy-to-Setup, Easy-to-Use - All the basics for home use with no frills, no fuss		~			~		× 1	
Home Basic Bright, Home Basic with Gloss Red Body		1			×		×	
Home Photo EZ, Optimized for photo needs. Adjust & print right from camera or storage card		~			~		~	
Home Work Custom, Select exactly the Home Printer capabilities you need		~			~		×	
Home Work Pro, Supports all your Work at Home needs		~			<b>~</b>		×	
Scan Wizard Portable Slimline, Keep business cards and expense receipts organized on the go							•	1
- Applicability								
□ : [Solution_Printer]Functions								
v Print								
🚈 Scan						<b>~</b>		
□ := [Solution_Printer]Ink Cartridge Capacity								
🛁 200 page								
🚎 500 page								
🚎 1000 page								
🖂 🚌 [Solution_Printer]Custom Print Rate - Pages Per Day?, (1100)								
>1 & <10			<					
>10 & <25				<				
>25					≮.			
□ 🚌 [Solution_Printer]Scanner Type								
vie None								
🖻 🚌 [Solution_Printer]Data Transfer								
🚓 Wireless								
□ 🚌 [Solution / Printer [2006-07-01T00:00:00+00:00 - 2007-06-30T23:59:59+00:00]]Wireless Networking								
👍 Wireless Networking	<b>~</b>							
□ 🚌 [Solution / Printer [2006-07-01T00:00:00+00:00 - 2007-06-30T23:59:59+00:00]]Power								
🖟 Rechargeable	┢	_		_		_		_
Constraint								
□ : [Solution_Printer]Functions								
rint -	_	~						
scan								
□ := [Solution_Printer]Ink Cartridge Capacity								
🚈 200 page			~	_				



#### **Preview: Upcoming Capabilities** Heterogeneous Rule Viewing / Editing

- Browse and edit different rule types together within a single view
- Enhanced filter / expand / collapse and improved usability makes it straightforward to manage a heterogeneous rules set
- Users can still deal with one rule type at a time if desired

D	Constraint Type	Severity	Message	Rule Expression	Applicability Expression	Model Expression
2148	🗾 Inclusive	Error	Wireless networking should be available if d	[Solution_Printer]'Data Transfer' =	[Solution / Printer [2006-0	
2149	Tindusive 🔤	Error	Print function should be selected in all non	[Solution_Printer]Functions = Print		([000025]Models = 'Home
2150	🗾 Indusive	Warning	▲ If pages per day is less than 10, ink catridg	[Solution_Printer]'Ink Cartridge Cap	(([Solution_Printer]'Custo	
2151	🚈 Indusive	Warning	If pages per day is less than 25 but greate	[Solution_Printer]'Ink Cartridge Cap	(([Solution_Printer]'Custo	
2152	🗾 Inclusive	Warning	If pages per day is greater than 25 then th	[Solution_Printer]'Ink Cartridge Cap	(([Solution_Printer]'Custo	([000025]Models = 'Home
2160	🧏 Exdusive	Error	Scanner type cannot be none	[Solution_Printer]'Scanner Type' = N	[Solution_Printer]Function	
2162	🧏 Exclusive	Error	Power cannot be rechargable for Home mo	[Solution / Printer [2006-07-01T00:0		([000025]Models = 'Home
2168	🚈 Indusive	Information	If model is portable the printer should be re	[Solution / Printer [2006-07-01T00:0		[000025]Models = 'Scan
	*	*	*	*		RECORDED FOR CONTRACTOR AND AND AND A

#### Available with 10.1.5 / 11.2.1

#### **Preview: Upcoming Capabilities** Effectivity, Revisioning, Revision Rule Filtering

- Revise and specify effectivity for Option Values and Rules
  - Control when each is introduced and obsoleted, including option availability per product model
- Apply revision rules to filter Configurator data for authoring and to control maturity of rules for solve operations (i.e. configuration should only be executed against released

🐞 000025-Printer Solutio	ons-Home Us	e Produc	ct Line	3	🖄 Any Status; Working	🖲 No Effectivity		🗊 Global	
🛞 Any Status; Working 🛞 No Effectiv	vity 🗊 Global			Π	Stinnon2E Drinter Solutio	Family Namespace	Туре	Global	Unit
Any Status; No Working Any Status; Working	ace Type Configuration C	Description	Value D L	Jnit	Models/001	000025	Prod	👝 Home Basic Bright	
Latest by Alpha Revision Order Latest by Creation Date	Product Model F Family Group		String		Printing/001     Printing/001	,	Famil	Home Basic Home Photo EZ	
Latest Working Precise Only	Family Group Family Group				B Scanner/001     B Fransfer / Storage		Famil Famil	Home Work Custom	-
Precise; Any Status Precise; Working	Family Group Family Group				By Media Size/001     Aesthetics/001		Fami Fami	Scan Wizard Pro	
Working(Current Group); Any Status Working(Current User); Any Status	Family Group Family Group						Famil	🛥 Scan Wizard Portable Slimline	
Working; Any Status									_

### **Preview: Upcoming Capabilities** Shared and Global Rules

- Author configurator rules that apply universally to all products
- Author configurator rules that apply to multiple products, or extend existing rules for additional products

🖉 Feasibility Rule	
ID:	19
Description:	
Type:	Feasibility Rule
Owner:	🧕 tcadmin (tcadmin) 🔻
Group ID:	🔓 dba 🔻
Last Modifying User:	S tcadmin (tcadmin)
Product Items:	000021-Scanner Solutions
	000025-Printer Solutions-Home Use Product Lin
Message:	Cord option is not applicable for Rechargable *
Severity:	Error
Applicability Expression:	(([SolutionPrinter]'Cord Length' > 0))





# Teamcenter 产品配置- 核心价值

#### 产品的变化:灵活、直观

- 变形定义的单一性和可重用性
- 将可用的变形从选项字典应用到每个产品中
- 表格/网格的操作更加直观易用

#### 配置规则:可控性、易分析

- 通过配置规则来定义选项
- 直观的影响分析查看
- 最大限度应用- 为特定产品、前置条件制定的规则

#### 产品配置和产品数据的独立分立

- 为产品配置和产品数据分立人员和生命周期
- 确保工程数据同配置规则的一致性

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# Thank You