



Reference Data Management - Not just in “SPE World”

Chris Why

Business Development Manager

Material Management & Project Control

INTERGRAPH

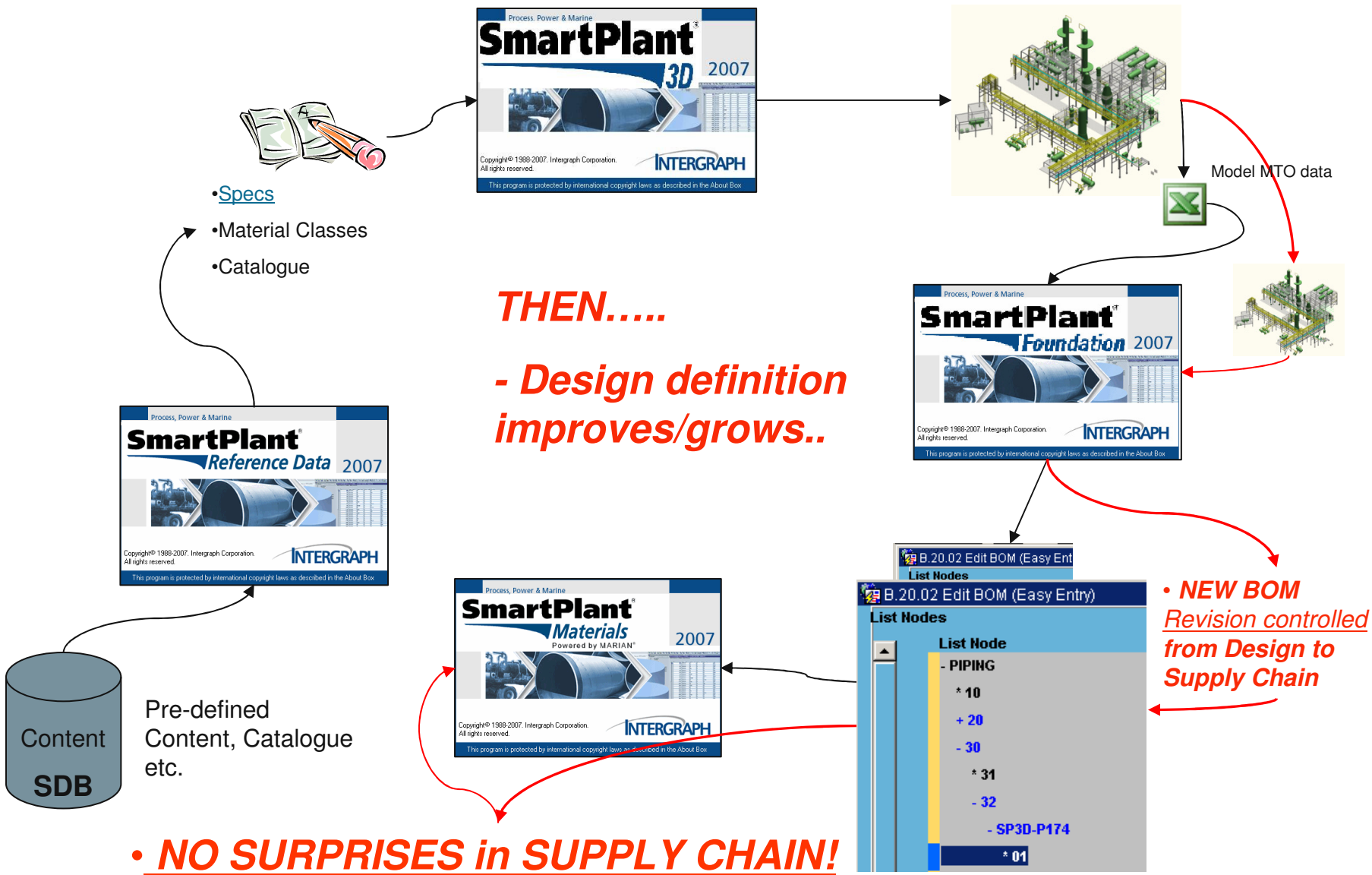
P2C2

P2C2

Lets talk Business Process not Feature Functions.... "Example" data flow...

NOTE:

This does not have to start at "3D" stage, could be P&ID, Line List, Early MTO, data from SPIn & SPEI



- Specs
- Material Classes
- Catalogue

THEN.....
- Design definition improves/grows..

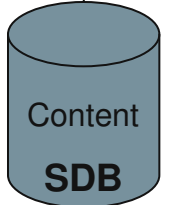
• NEW BOM Revision controlled from Design to Supply Chain

• NO SURPRISES in SUPPLY CHAIN!

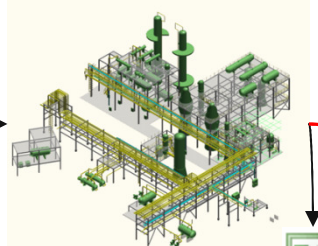
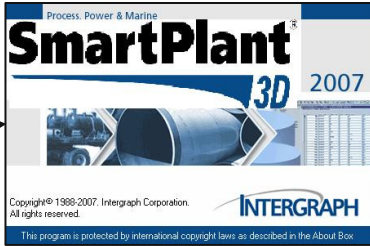
B.20.02 Edit BOM (Easy Ent)

List Nodes

List Node
- PIPING
* 10
+ 20
- 30
* 31
- 32
- SP3D-P174
* 01



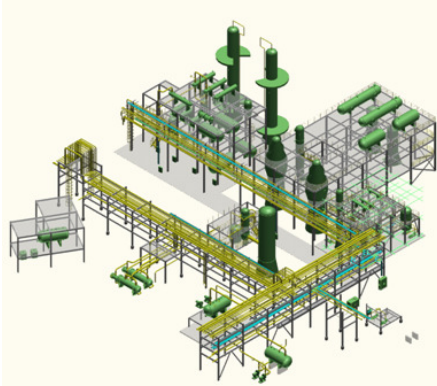
Pre-defined Content, Catalogue etc.



Where does SmartPlant Materials fit in?

P2C2

SmartPlant
Enterprise



SmartPlant
Materials



Example ERP

R.30.01 Mainte...
Requisition Nodes

B.20.03 Adv Maintain BOM

- CIVIL
- EQUIPMENT
- MECH

Flat View Drag and Drop

Selected Node
 Full Tree
 Ordered by

Intergraph Corporation		MARIAN Example Reports		Training Database		
Enterprise Engineering Solutions		Productgroup: Intergraph		User: John		
Huntsville/Alabama		Discipline: Piping		Department: EES		
Forecast Code	Run Number	Sh...	Description	Type	Job Status	Start Date
FORECAST	1	Forecast R...	RECASTED	N/A
Issue Status	List Status	...	Storage	Split Type	Split Attribute	Calc
Best Qty	0	...	Class Optimized (Any)	None	N/A	No
BOM Nodes						
BOM Path	Total List Qty	Total Resv Qty	Total Qty	Actual Resv Qty	Resv	
PIPING/A38/4W...	27	0.000	0.000	7.800		
PIPING/A38/4W...	0.000	0.000	0.000	13.000		
PIPING/A38/4W...	0.000	0.000	0.000	2.000		
PIPING/A38/4W...	0.000	0.000	0.000	36.000		
PIPING/A38/4W...	12.900	0.000	0.000	4.000		
PIPING/A38/6W...	6.000	0.000	0.000	1.000		
PIPING/A38/6W...	70	0.000	0.000	69.750		
PIPING/A38/8W...	53	0.000	0.000	13.000		
PIPING/A38/8W...	24.2	0.000	0.000	25.000		
BOM Positions completely unavailable						
BOM Path	Ident Code	Ident Description	Pos Commodity Code	Size 1	Size 2	Tag Number
PIPING/A38/6WC380401-CS600			34 PFWNCA4M10A5	6	0	UNTAGGED
	15557	6"/SCH80 Flange WN CS A234-WPB-W RFFE Cl.600 ASME-B16.5				

Construction Planning

Back to splash screen

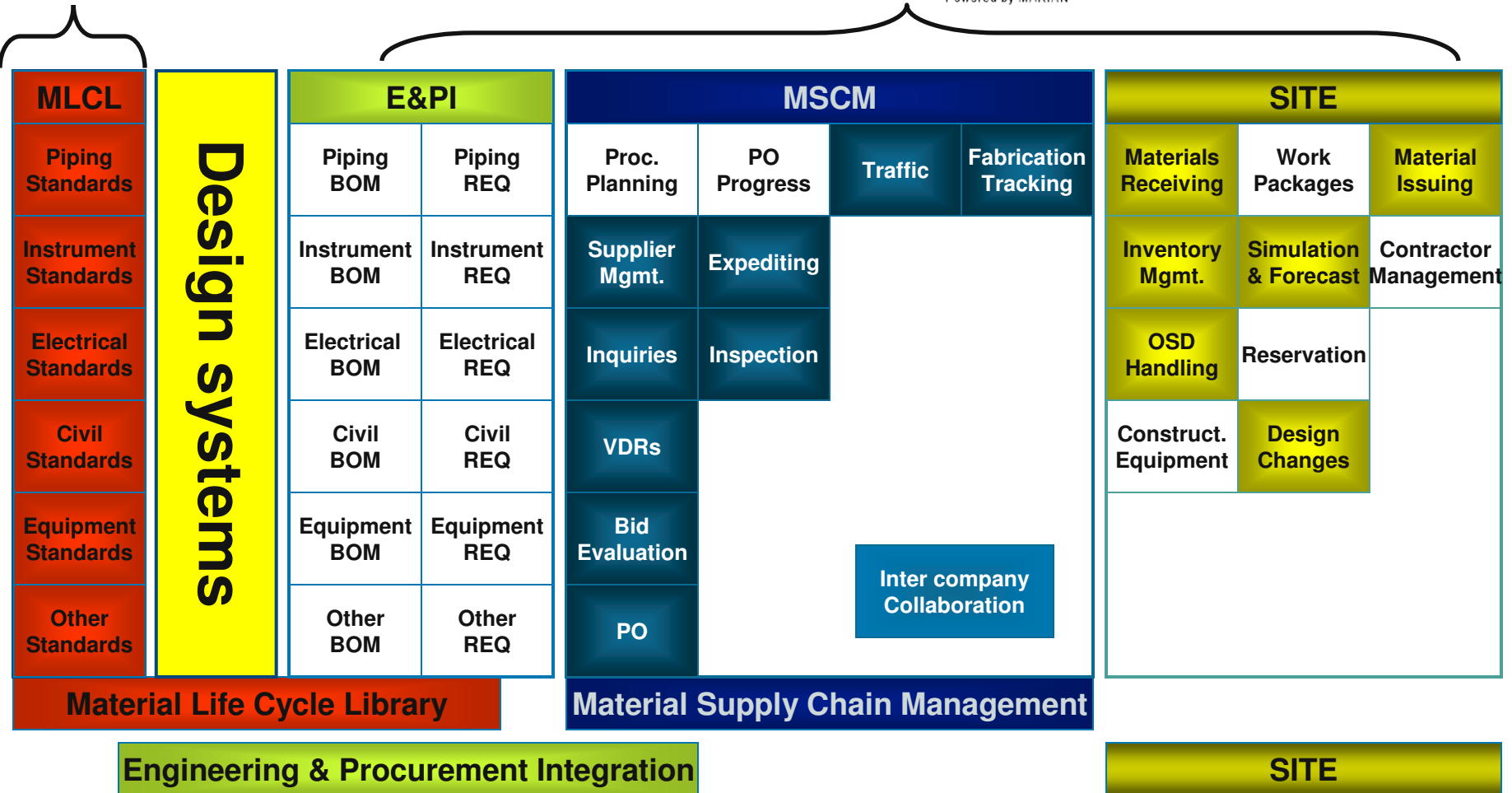
SmartPlant RefData and Materials

– Major Work Processes –



SmartPlant[®]
Reference Data

SmartPlant[®]
Materials
Powered by MARIAN[®]



What is the “SDB” = Standard Database for SPRD



- Introduction -
 - [It's Content for SPRefDat!](#)
 - Preconfigured recommended practice solution – **Started off with PIPING focus** (more coming, see later)
 - A comprehensive catalog of industry standard multi-discipline material parts, **organised and described for 'out of the box' use**
 - 12,500 Commodity Codes (ASME/ANSI, ASTM, MSS & API for metallic parts)
 - 1.5 Million Idents
 - All table details pre-defined for ease of adding new Commodities
 - Dimensional data (per ASME)
 - Weight information
 - ASIC Structural Shapes (Beams, columns, Angles etc etc)
 - Steel Plate also
 - Content is **pre-configured** to enable catalog and piping specification interfaces to intelligent 3D applications (initially SmartPlant 3D).
- Collateral
 - [Initial Document \(AsiaPac\)](#) - [Management Summary](#)
 - [Solution Sheet](#)

What benefits does the “SDB” offer?

P2C2

■ Client

- **New pricing scale**
 - Based on Company size
- **Shortens implementation time** = faster return on s/w investment
- **Lower cost of implementation** = less resistance to buying s/w
- **Standardised content linked from Design through supply chain**
(Left hand knows what right hand means!!)
- **Standardisation of codification** across their projects
- Imagine **re-using your catalog** and just MAPPING to your Client
- **Lower Client resource costs** as we maintain the data in SDB
- **Correct material identification** = lower material costs through correct procurement = greater Return on Investment =
 - **MORE PROFIT!**

Back to
workflow....

MLCL Explorer

0 idents in cart

Search NLS Descriptions Search Options: Start with Co

- CJ -Core Jacket Pipe/Fit
- CJFITTINGS -Core Jacket Fittings
- PA -Piping Assemblies
- PB -Ppg B&S Ftgs
- PD_BOLT -PDMS SKS Bolts
- PD_ELBOW -PDMS Elbow
- PD_FLANGE -PDMS Flanges
- PD_GASKET -PDMS Gaskets
- PD_PIPE -PDMS Pipe
- PD_VALVE -PDMS Valves
- PF -Ppg Flanges
 - BL -Flg Blind
 - PFBL11FPPVAF - Flg Blind B16.1 C
 - PFBL11FPVCSF - Flg Blind B16.1 C
 - PFBL1VFDIAGE - Flg Blind B16.1 C
 - PFBL1VFFPV00 - Flg Blind B16.1 C
 - PFBL1VFPPA00 - Flg Blind B16.1 C
 - PFBL4EFCAAAF - Flg Blind AWWA

MLCL Explorer: Window 7

Commodity Code

PFBL11FPPVAF

Short Desc

Flg Blind B16.1 Class 150 FFFE ASTM D1784 CPVC STD FIN

Description

Piping Flange, Blind ASME B16.1 Class 150 FFFE ASTM D1784 CPVC Standard Finish

Group	Short Desc	Description
PF	Ppg Flanges	Piping Flanges
BL	Flg Blind	Piping Flange, Blind
P_FLGS	Ppg Flgs	Piping Flanges

Commodity Type	Special Table	Object	Ctrl
Table Detail Based		D1	1

Detail
Attributes

Digit from / to	Tablename	Group	Detail	Short c
5 / 5	P_DSGN_STD	FLANGES	1	B16.1
6 / 6	P_RATING	FLANGES	1	Class
7 / 7	P_END_TYPE	FLANGES_BI	F	FFFE
8 / 10	P_MATL	FLANGES_NI	PPV	ASTM
11 / 12	P_FLGS_ALIAS	FLANGES	AF	STD FI

Back to workflow....

S.50.06 Specification Management

Specification Headers

Display Options

Project Only
 Product Group Only
 All
 Both
 Not issued and highest Rev

Spec Type	Spec Code	Ctrl	Rev	Issued	Published	Active	Date	XRev	Version
PROCESS	12CG0T01	1	0	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
PROCESS	12CG0T01	1	0	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
PROCESS	12CS1T01	1	0	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
PROCESS	12PD0H01	1	0	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
PROCESS	12PD0H80	1	0	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
PROCESS	1CB2S01	1	0	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
PROCESS	1CS1F80	1	0	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
PROCESS	1CS1J01	1	0	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
PROCESS	1CS1S01	1	1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
PROCESS	1CS1S01	1	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			

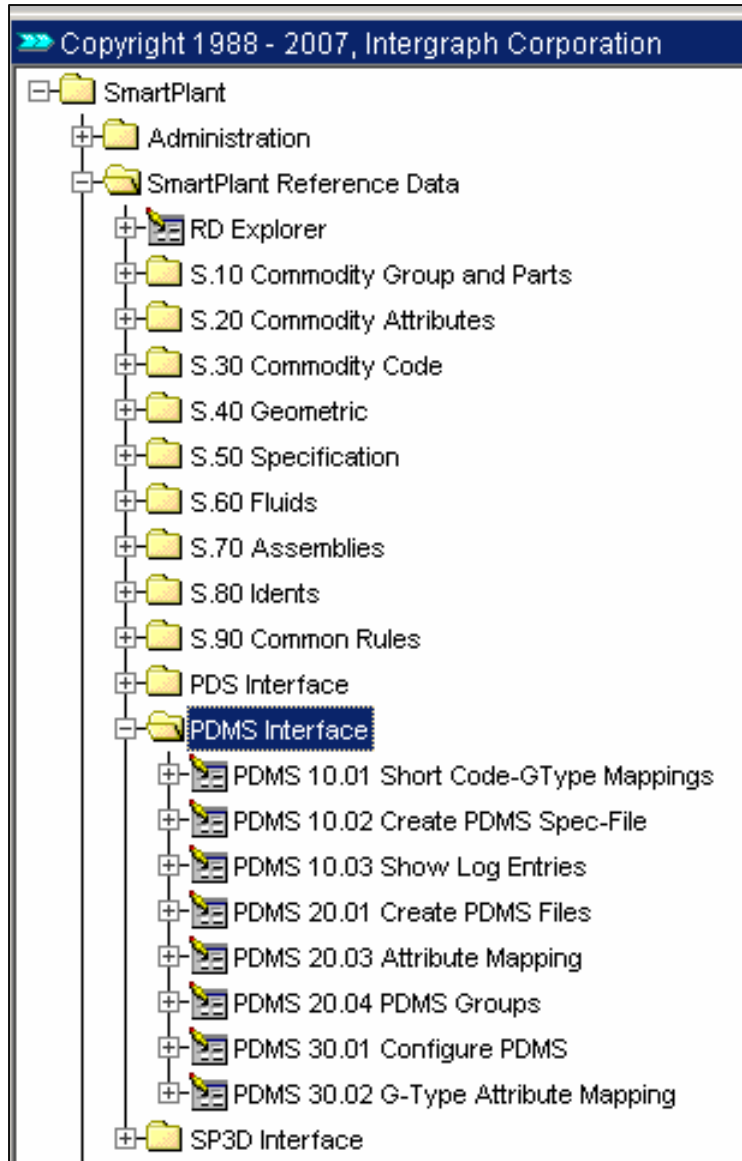
Seq	Tablename	Group
1	SERVICE	ALL
2	RATING CLASS	ALL
3	TEMPERATURE LIMIT	ALL
4	MATERIAL	ALL
5	DESIGN CODE	ALL

Specification Items

Seq	Short Code	Group	Part	Option	Commodity Code
1	P-PIPE	PP	P	1	PPPAMTGC3EA0
2	P-PIPE	PP	P	1	PPPAMBGC3EA0
31	TRN-45	PR	E4	1	PRE43F1AAAAA
32	TRN-90	PR	E9	1	PRE93F1AAAAA
33	BR-TEE	PR	TE	1	PRTE3F1AAAAA
34	BR-CRS	PR	XE	1	PRXE3F1AAAAA
36	BR-TRED	PR	TR	1	PRTR3E1AAAAA

L A Y O U T

Generate the Export from SPRD



SPRD - PDMS Interface

- Data is “Design System Neutral”
- Simply require to configure ‘mapping’
- Export the data !

Export file for Design Systems



```
new_PDMS_SPEC1_5121.spec - WordPad
File Edit View Insert Format Help
|
| $* Piping specification File for all items
| $* Created by MARIAN 2007 (6.2.3) SP 4 - Copyright 1988 - 2007, Intergraph Corporation
| $* MARIAN - PDMS SPECS INTERFACE - SPEC CREATING DATE : 16-OCT-07
| $* on 16-10-2007 at 13:57
| $* Number of Records: 127
| $*-- ****      Project - No.      *****
| $* PROJECT 'Best_Practice'
| $*-- ****      Project - No.      *****
| NEW SPECIFICATION /PDMS_SPEC1
| MATREF =0
| FLUREF =0
| RATING 0.100
| LINETYPE NULL
| Text 'PIPING'
| BLTM 'NEW'
| HEADING
| TYPE NAME BDIA BTYP CATREF DETAIL MATXT CMPREF BLTREF
| DEFAULTS
| - - - =
| BOLT */I5424934 24in !NDF /PDSB---357- /5424934-D /357_14620-M /5424934-C =0
| BOLT */I5424938 24in !NDF /PDSB---357- /5424938-D /357_14620-M /5424938-C =0
| BOLT */I5424951 26in !NDF /PDSB---357- /5424951-D /357_14620-M /5424951-C =0
| BOLT */I5424959 26in !NDF /PDSB---357- /5424959-D /357_14620-M /5424959-C =0
| BOLT */I5424968 26in !NDF /PDSB---357- /5424968-D /357_14620-M /5424968-C =0
| BOLT */I5424971 30in !NDF /PDSB---357- /5424971-D /357_14620-M /5424971-C =0
| BOLT */I5424987 30in !NDF /PDSB---357- /5424987-D /357_14620-M /5424987-C =0
| BOLT */I5424918 22in !NDF /PDSB---357- /5424918-D /357_14620-M /5424918-C =0
| BOLT */I5424925 22in !NDF /PDSB---357- /5424925-D /357_14620-M /5424925-C =0
| BOLT */I5424926 22in !NDF /PDSB---357- /5424926-D /357_14620-M /5424926-C =0
```

Example Clients with PDMS Interface



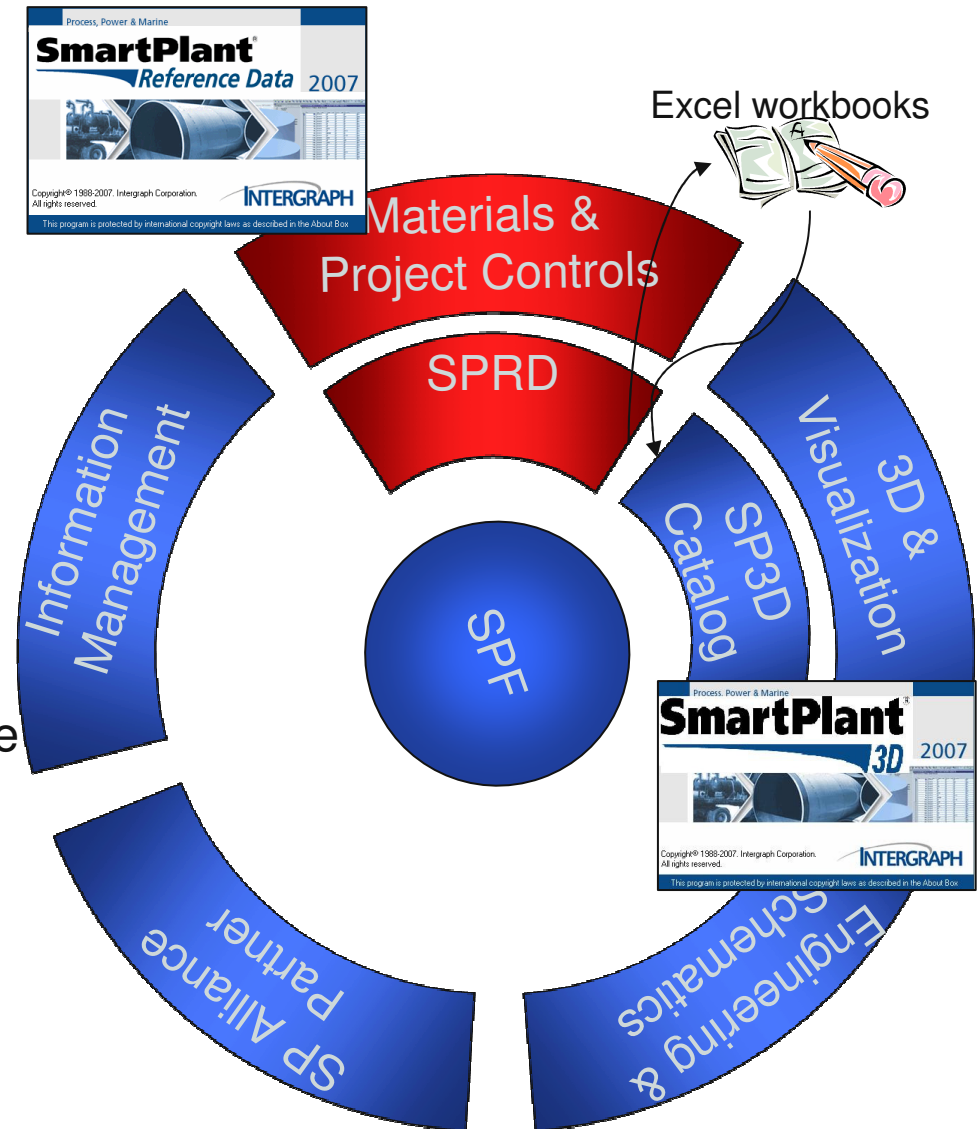
Back to workflow...

Reference Data Integration

- SP3D and SPRD

P2C2

- Creation and maintenance of Material Component Libraries
- Creation and Maintenance of Materials Specifications, Classes and Revisions
- Creation and Maintenance of Miscellaneous Information and Rules
- New Projects with new SP3D catalogs require a **one-time** upload of the SPRD Specifications and the SPRD Component Library
- Revisions and ad-hoc Updates can be transferred at any time



SP3D \leftrightarrow SPRD Integration

P2C2

Export Jobs

Microsoft Excel - 1CS150_WBK.xls

Head Start	SpecName	ShortCode	OptCode	FirstS	EngineeringT	Commodity	Fabrication	Supply	Respon	Fir
6	ICS150	45 Degree Dir	1	0,5		OE45AB2SSVACGZ22				
7	ICS150	45 Degree Dir	1	0,75		OE45AB2SSVACGZ22				
8	ICS150	45 Degree Dir	1	1		OE45AB2SSVACGZ22				
9	ICS150	45 Degree Dir	1	1,5	1,5	OE45AB2SSVACGZ22				
10	ICS150	45 Degree Dir	1	2		BE4LABMBEACKZ22				MF
11	ICS150	45 Degree Dir	1			BE4LABMBEACKZ22				MF
12	ICS150	45 Degree Dir	1			BE4LABMBEACKZ22				MF
13	ICS150	45 Degree Dir	1			BE4LABMBEACKZ22				MF
14	ICS150	45 Degree Dir	1			BE4LABMBEACKZ22				MF
15	ICS150	45 Degree Dir	1			BE4LABMBEACKZ22				MF
16	ICS150	45 Degree Dir	1	12		BE4LABMBEACKZ22				MF
17	ICS150	45 Degree Dir	1	14		BE4LABMBEACKZ22				MF
18	ICS150	45 Degree Dir	1	16		BE4LABMBEACKZ22				MF
19	ICS150	45 Degree Dir	1	18		BE4LABMBEACKZ22				MF
20	ICS150	45 Degree Dir	1	2		BE4LABMBEACKZ22				MF
21	ICS150	45 Degree Dir	1			BE4LABMBEACKZ22				MF
22	ICS150	45 Degree Dir	1	26		BE4LABMBEACKZ22				MF
23	ICS150	45 Degree Dir	1	30	30 in	BE4LABMBEACKZ22				MF
24	ICS150	45 Degree Dir	1	36	36 in	BE4LABMBEACKZ22				MF
25	ICS150	45 Degree Dir	1	42	42 in	BE4LABMBEACKZ22				MF
26	ICS150	45 Degree Dir	1	48	48 in	BE4LABMBEACKZ22				MF
27	ICS150	90 Degree Dir	1	0,5	0,5 in	OE90AB2SSVACGZ22				MF
28	ICS150	90 Degree Dir	1	0,75	0,75 in	OE90AB2SSVACGZ22				MF
29	ICS150	90 Degree Dir	1	1	1 in	OE90AB2SSVACGZ22				MF
30	ICS150	90 Degree Dir	1	1,5	1,5 in	OE90AB2SSVACGZ22				MF
31	ICS150	90 Degree Dir	1	2	2 in	BE3LABMBEACKZ22				MF
32	ICS150	90 Degree Dir	1	3	3 in	BE3LABMBEACKZ22				MF
33	ICS150	90 Degree Dir	1	4	4 in	BE3LABMBEACKZ22				MF
34	ICS150	90 Degree Dir	1	6	6 in	BE3LABMBEACKZ22				MF
	ICS150	90 Degree Dir	1	8	8 in	BE3LABMBEACKZ22				MF
	ICS150	90 Degree Dir	1	10	10 in	BE3LABMBEACKZ22				MF
	ICS150	90 Degree Dir	1	12	12 in	BE3LABMBEACKZ22				MF
	ICS150	90 Degree Dir	1	14	14 in	BE3LABMBEACKZ22				MF
	ICS150	90 Degree Dir	1	16	16 in	BE3LABMBEACKZ22				MF
	ICS150	90 Degree Dir	1	18	18 in	BE3LABMBEACKZ22				MF

SmartPlant Reference Data 2007

SmartPlant 3D 2007

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