



FALCON Pilot

Applying Open Standards for PLM
Systems Interoperability



TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

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Center, Warren, Michigan, USA

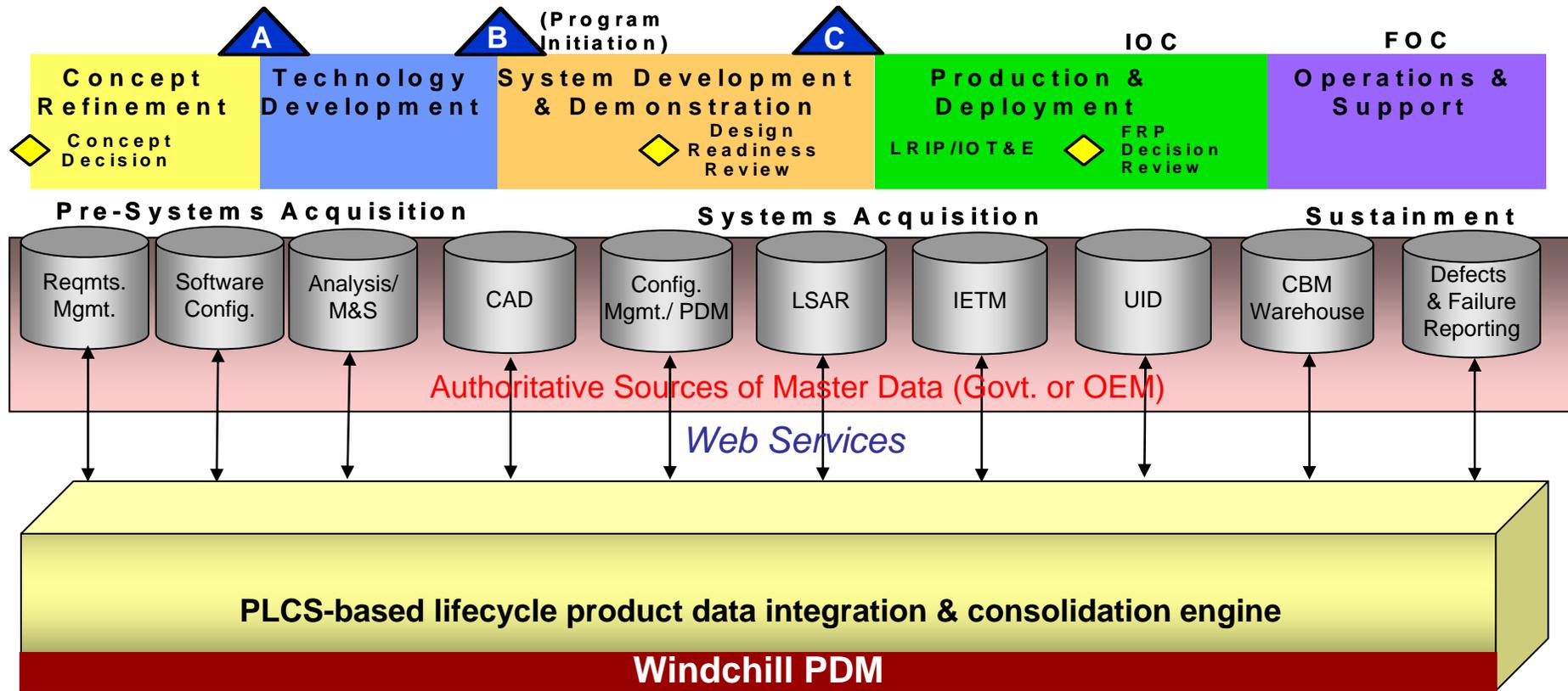
Report Documentation Page

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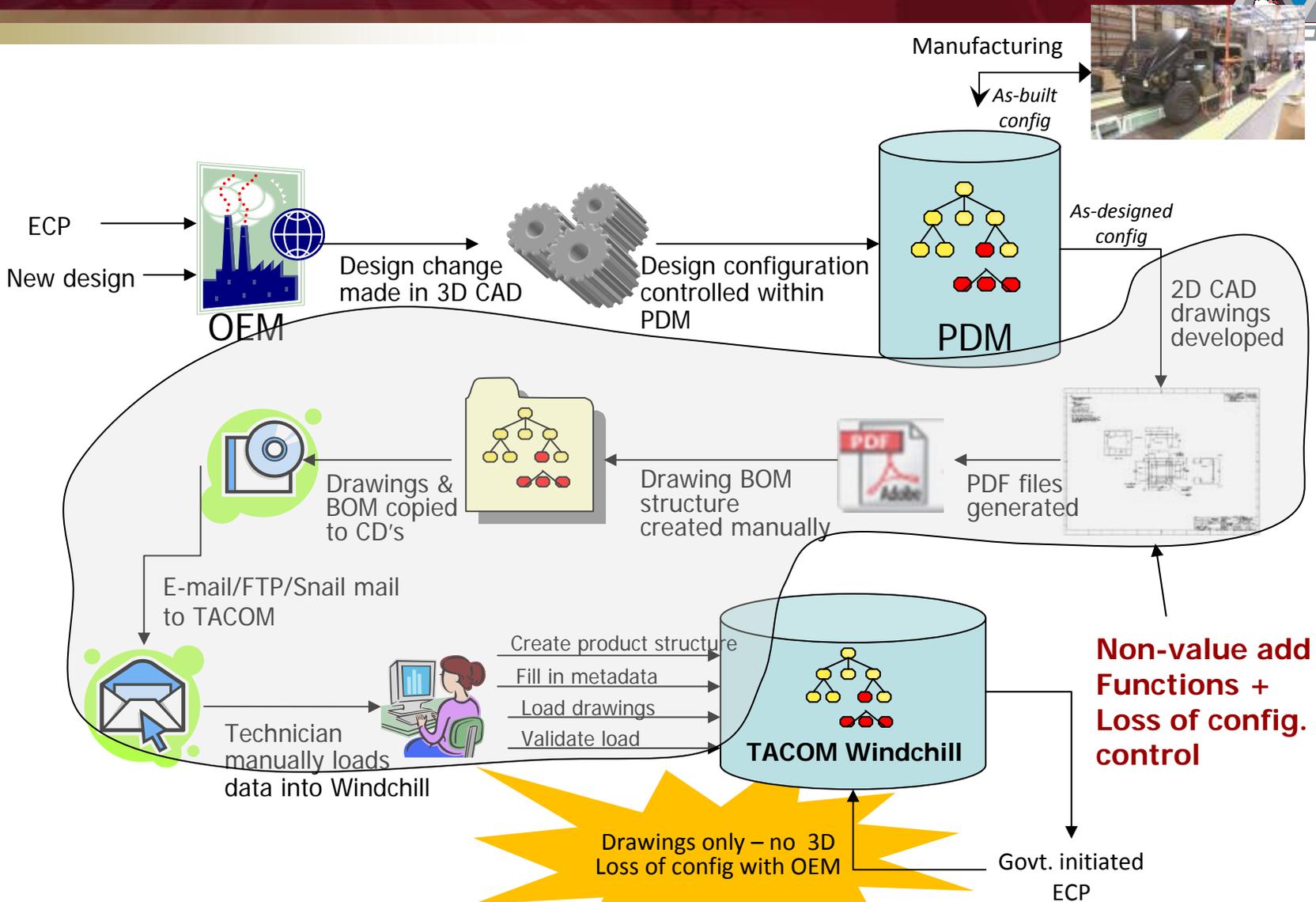
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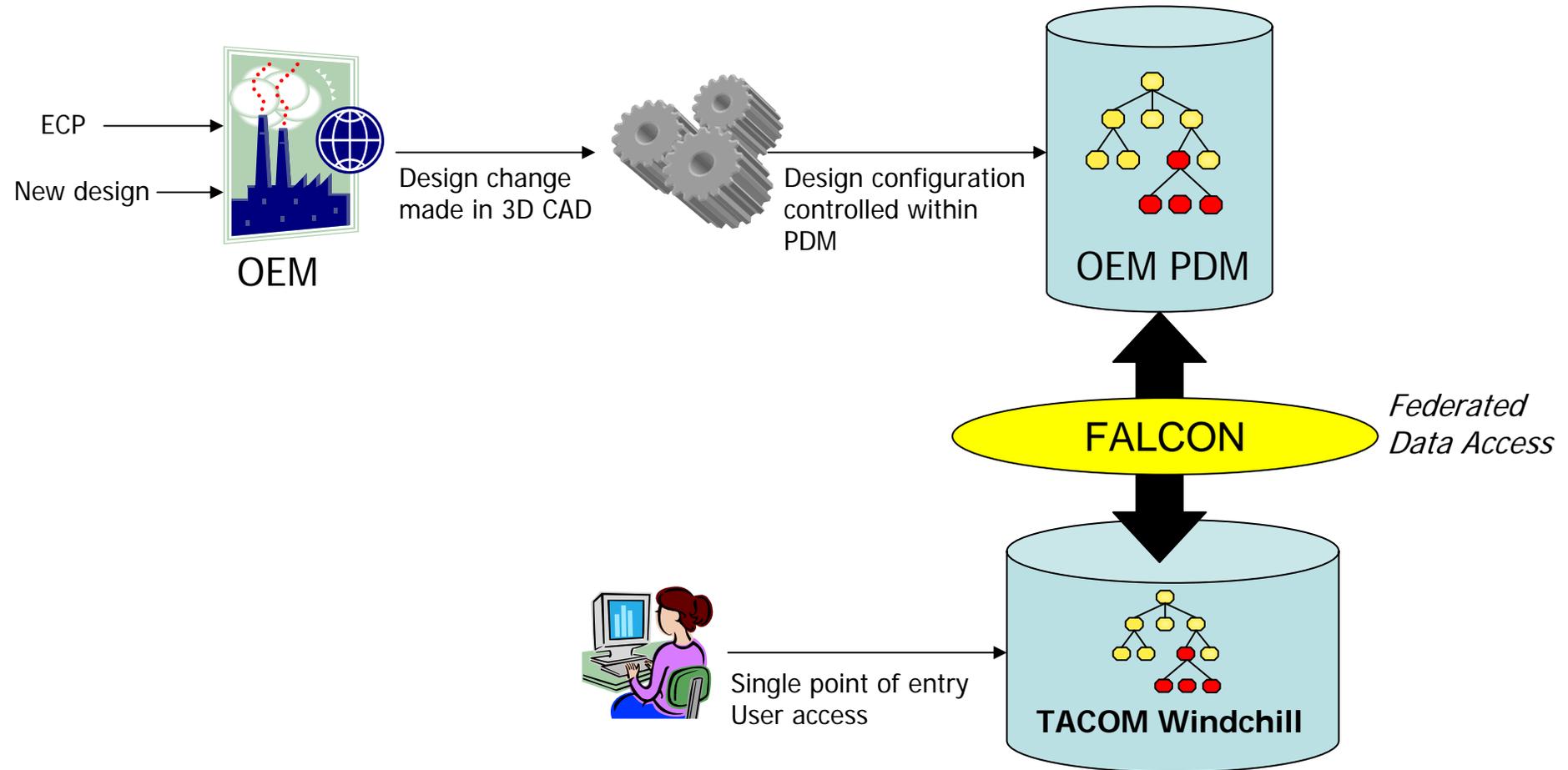
- Present the FALCON approach:
 - the application of the PLCS standard and Share-A-space technology as a “master data integrator” within the Falcon Program Architecture
- Demonstrate:
 - Improved data communication from AM General to TARDEC
 - Visibility of richer design data sets to TARDEC
 - Ability to compare
 - Access to details of individual delivered vehicles

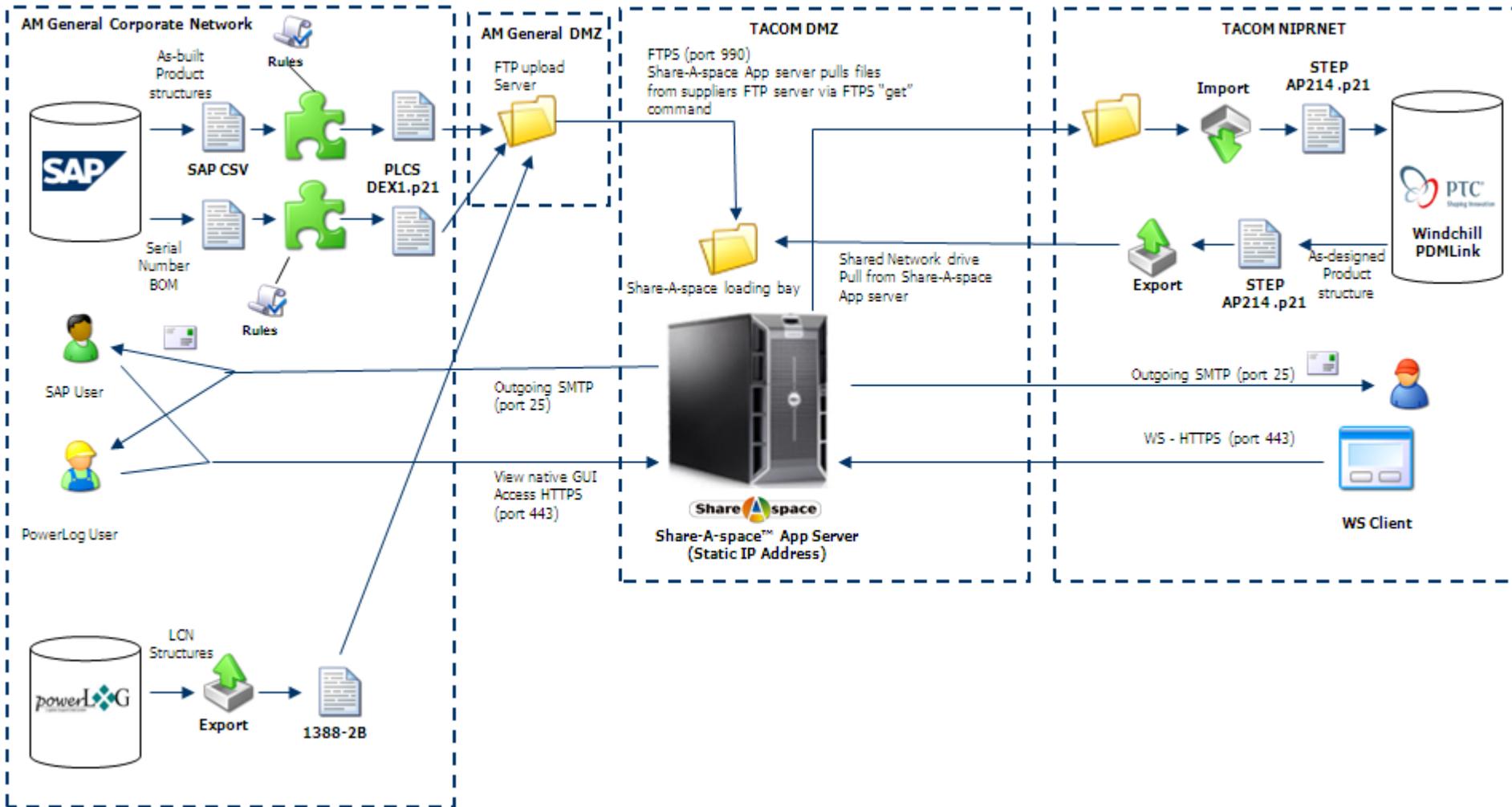


Lifecycle Applications	Collaboration	Product Improvements	Spare Part Buys	DLA Buys	Depot Reset/Recap
	Modeling & Simulation	CAVE	Online Design Reviews	Provisioning	Field Repair & Maintenance
	Configuration Management	Data Validation	What-if Analysis	Cataloging	

- The Army receives design data as drawings (pdf files)
- Drawings are held by the Army in Windchill
 - Corresponding meta data is entered manually
- Product structure is supplied as indented parts lists
 - Corresponding data is entered manually into Windchill
- LSAR data is also provided as 1388-2B
 - Including Initial Provisioning Lists (as a report)
- Change documentation held in the Windchill system
 - Other intermediate changes made by AMG held in SAP
- What happens in AM General is not seen by the Army
 - Changes to HMMWV design for manufacturing not delivered to Army by contract
 - Approved changes do not necessarily get into manufacture







1. Load AM General design data

2. Load TARDEC Windchill data



5. Load Vehicle instance data and view in Share-A-space



3. Load AM General powerLog (1388-2b) data

4. Consolidated product data review with plug-in



HMMWV Pilot – Demo Scenario

1. Initial Data Load – AM General SAP Data

- Extract “As Used To Manufacture” data from AM General’s SAP
- Map/transform SAP data to PLCS (ISO 10303-239)
- Load data into Share-A-space



Product structure System Help

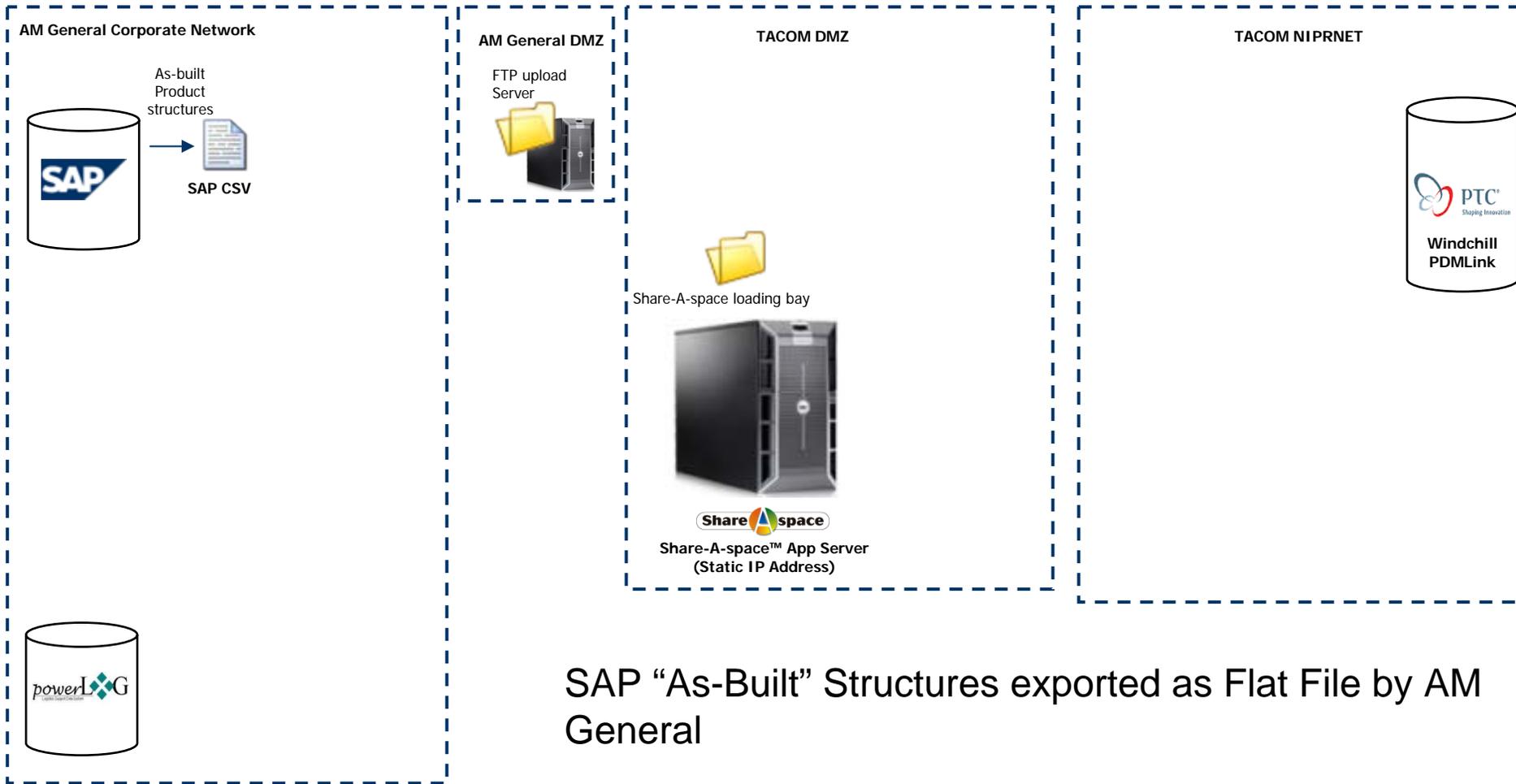
Product Structure: Validity date 07/06/2007

Product structure	Status	Descript	Values	Workb	Del Ind	Original
12460078		INSTL EXHAUST SYSTEM	5			
Revision Levels						
E1						
Change Number						
1716-S677		RELEASE LATEST LEVEL III TDP IN:				
Documents						
DRW 12460078 000 00	AR	INSTL EXHAUST SYSTEM	5			
DRW 12460078 000 01	FR	INSTL EXHAUST SYSTEM				
Versions						
Revision Levels						
Source Document						
Change Number						
1716-S677		RELEASE LATEST LEVEL III TDP IN:				
Object Links						
Classification						
Change Numbers						
Classification						
0272 L 9416918		1/4-20 HX SERR FLG LN CASE		4		
0280 L 2436163		3/8 FW TY B HRDND GM STD 2C		54		
0295 L EC12338340		BRACKET ASM MUFFLER MTG		1		
0300 L 12460081		HEAT SHIELD ASM 100		1		
Change Numbers						

Product structure System Help

CWEYERS sapprdc1 INS

Initial Data Load – AMG SAP



SAP “As-Built” Structures exported as Flat File by AM General



SAP export



```

AMG_SAP_Demo.txt - Notepad
File Edit Format View Help
Part
100 102581 | | "SCREW,SET SOCKET 5/16-18X3/8 " | "SCREW,SET SOCKET 5/16-18X3/8 109" | 31-Mar-2003
100 102670 | | 3/16 X .4375 BTN SM SOLID RVT | 3/16 X .4375 BTN SM SOLID RVT 201 | #N/A
100 106868 | | RIVET | RIVET 201 | #N/A
100 10-8-070102 | | "CONNECTOR, STRAIGHT MALE " | "CONNECTOR, STRAIGHT MALE 201" | 9-Jan-2006
100 10-8-070302 | | "ELBOW, 45 DEG.-MALE " | "ELBOW, 45 DEG.-MALE 201" | 9-Jan-2006
100 10871581 | | HINGE ASM | HINGE ASM 201 | #N/A
100 10871583 | | PIN | PIN 201 | #N/A
100 10871585 | | LEAF | LEAF 201 | #N/A
100 10875481 | | BAND | BAND 201 | #N/A

```

```

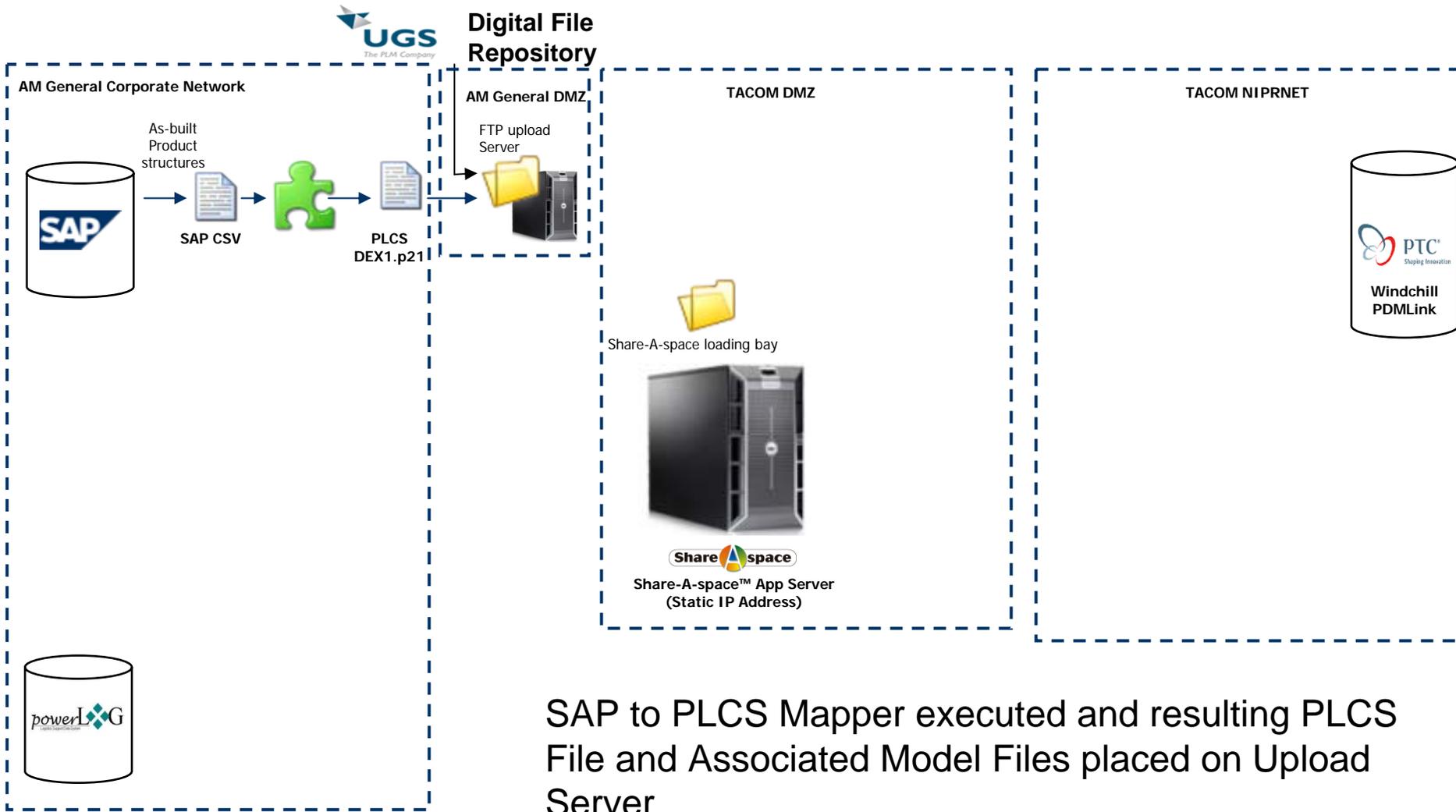
AMG_SAP_Demo.txt - WordPad
File Edit View Insert Format Help
Part
100 | 12460078 | E1 | INSTL EXHAUST SYSTEM | INSTL EXHAUST SYSTEM
100 | 102581 | | "SCREW,SET SOCKET 5/16-18X3/8 " | "SCREW,SET SOCKET 5/16-18X3/8
100 | 102670 | | 3/16 X .4375 BTN SM SOLID RVT | 3/16 X .4375 BTN SM SOLID RVT
100 | 106868 | | RIVET | RIVET
100 | 10-8-070102 | | "CONNECTOR, STRAIGHT MALE " | "CONNECTOR, STRAIGHT MALE
100 | 10-8-070302 | | "ELBOW, 45 DEG.-MALE " | "ELBOW, 45 DEG.-MALE
100 | 10871581 | | HINGE ASM | HINGE ASM
100 | 10871583 | | PIN | PIN

```

```

100 11613707 | | PLATE | PLATE 201 | #N/A
100 11613708 | | CONTACT | CONTACT 201 | #N/A
100 11614131 | | SWITCH ASM - ROTARY | SWITCH ASM - ROTARY 100 | #N/A
100 11614131-1 | | SWITCH | SWITCH 201 | #N/A
100 11614156 | 1A | COMPOSITE LIGHT (AMBER) | COMPOSITE LIGHT (AMBER) 100 | 13-Dec-2000
100 11614157 | 1A | COMPOSITE LIGHT (ALL DE | COMPOSITE LIGHT (ALL DE 100 | 13-Dec-2000
100 11639519-1 | | GASKET | GASKET 201 | #N/A
100 11639519-2 | | GASKET | GASKET 201 | #N/A
100 11639520 | | BODY ASSY | BODY ASSY 201 | #N/A
100 11639521 | | INSERT | INSERT 201 | #N/A
100 11639522 | | BODY | BODY 201 | #N/A
100 11639522-1 | | BODY | BODY 201 | #N/A

```



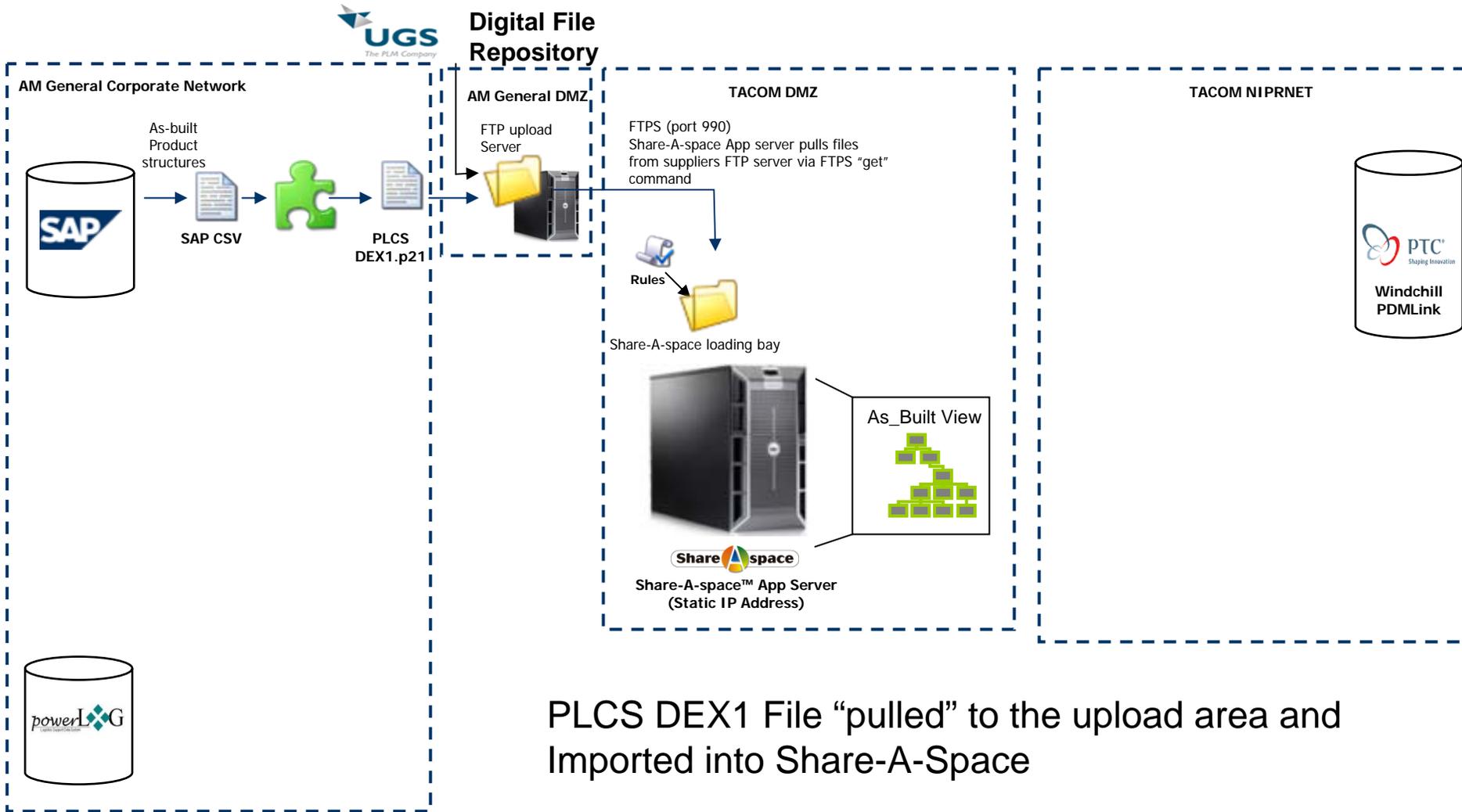
SAP to PLCS Mapper executed and resulting PLCS File and Associated Model Files placed on Upload Server



```

AMG_SAP_Demo.stp - WordPad
File Edit View Insert Format Help
[Icons]

#47063=IDENTIFICATION_ASSIGNMENT('12460072','/IGNORE','$',(#16450));
#47065=IDENTIFICATION_ASSIGNMENT('INSULATOR','/IGNORE','$',(#17648,#17124,#16450,#1764
#47067=IDENTIFICATION_ASSIGNMENT('12460076','/IGNORE','$',(#16451));
#47069=IDENTIFICATION_ASSIGNMENT('BATTERY BOX @ STORAGE','/IGNORE','$',(#16451));
#47071=IDENTIFICATION_ASSIGNMENT('12460077','/IGNORE','$',(#16452));
#47073=IDENTIFICATION_ASSIGNMENT('CUSSET TUNNEL SIDE','/IGNORE','$',(#16452));
#47075=IDENTIFICATION_ASSIGNMENT('12460078','/IGNORE','$',(#16453));
#47077=IDENTIFICATION_ASSIGNMENT('INSTL EXHAUST SYSTEM','/IGNORE','$',(#16453));
#16453=PART('/IGNORE','/IGNORE','/IGNORE');
#47079=IDENTIFICATION_ASSIGNMENT('12460079','/IGNORE','$',(#16454));
#47081=IDENTIFICATION_ASSIGNMENT('12460080','/IGNORE','$',(#16455));
#47083=IDENTIFICATION_ASSIGNMENT('SHIELD HEAT','/IGNORE','$',(#16461,#16455));
#47085=IDENTIFICATION_ASSIGNMENT('12460081','/IGNORE','$',(#16456));
#48=DOCUMENT_DEFINITION('/IGNORE','/IGNORE','/IGNORE',#49,(),#50);
#51=DOCUMENT_DEFINITION('/IGNORE','/IGNORE','/IGNORE',#52,(),#53);
#54=DOCUMENT_DEFINITION('/IGNORE','/IGNORE','/IGNORE',#55,(),#56);
#57=DOCUMENT_DEFINITION('/IGNORE','/IGNORE','/IGNORE',#58,(),#59);
#60=DOCUMENT_DEFINITION('/IGNORE','/IGNORE','/IGNORE',#61,(),#62);
#63=DOCUMENT_DEFINITION('/IGNORE','/IGNORE','/IGNORE',#64,(),#65);
#66=DOCUMENT_DEFINITION('/IGNORE','/IGNORE','/IGNORE',#67,(),#68);
#69=DOCUMENT_DEFINITION('/IGNORE','/IGNORE','/IGNORE',#70,(),#71);
For Help, press F1
NUM
  
```



PLCS DEX1 File “pulled” to the upload area and Imported into Share-A-Space

Share-A-space - falcon | 5.4.1 500 - Microsoft Internet Explorer

Address: http://essevm74/main/frameset/SASFrameset.aspx

Raj Iyer, TARDEC

TARDEC 2007-06-14 01:39:25 Update

- 8750315 R "HMMWV A2, M1097A2"
 - 0005 | 11643398 DECAL-NOISE WARNING
 - 0007 | 6500611 - "Splash Shield Install, LH "
 - 0009 | 6500612 "Splash Shield Install, RH "
 - 0012 | 12460152-1 B1 CABLE INSTL. RADIO POWER
 - 0013 | 12460078 G INSTL EXHAUST SYSTEM**
 - 0015 | 12338370 D ACCELERATOR CONTROLS
 - 0017 | 12338384-1 G AIR INTAKE ASM
 - 0020 | RCSK23650 - PWR STRG PUMP PIPING
 - 0027 QTY: 2 Count | EC12338839-1 D FOOTMAN LOOP
 - 0030 | 12338939 C1 HOOD SUPPORT ROD-INSTL.
- 0017 | 12338384-1 G AIR INTAKE ASM
- 0020 | RCSK23650 - PWR STRG PUMP PIPING
- 0027 QTY: 2 Count | EC12338839-1 D FOOTMAN LOOP
- 0030 | 12338939 C1 HOOD SUPPORT ROD-INSTL.
- 0032 | 12339056-2 A DECAL-NO STEP
- 0035 QTY: 4 Count | 12339057 DECAL-SLING
- 0040 QTY: 4 Count | 12339059 DECAL-TIE DOWN

Operations

- Edit
- View
- Structure
- Approval Status

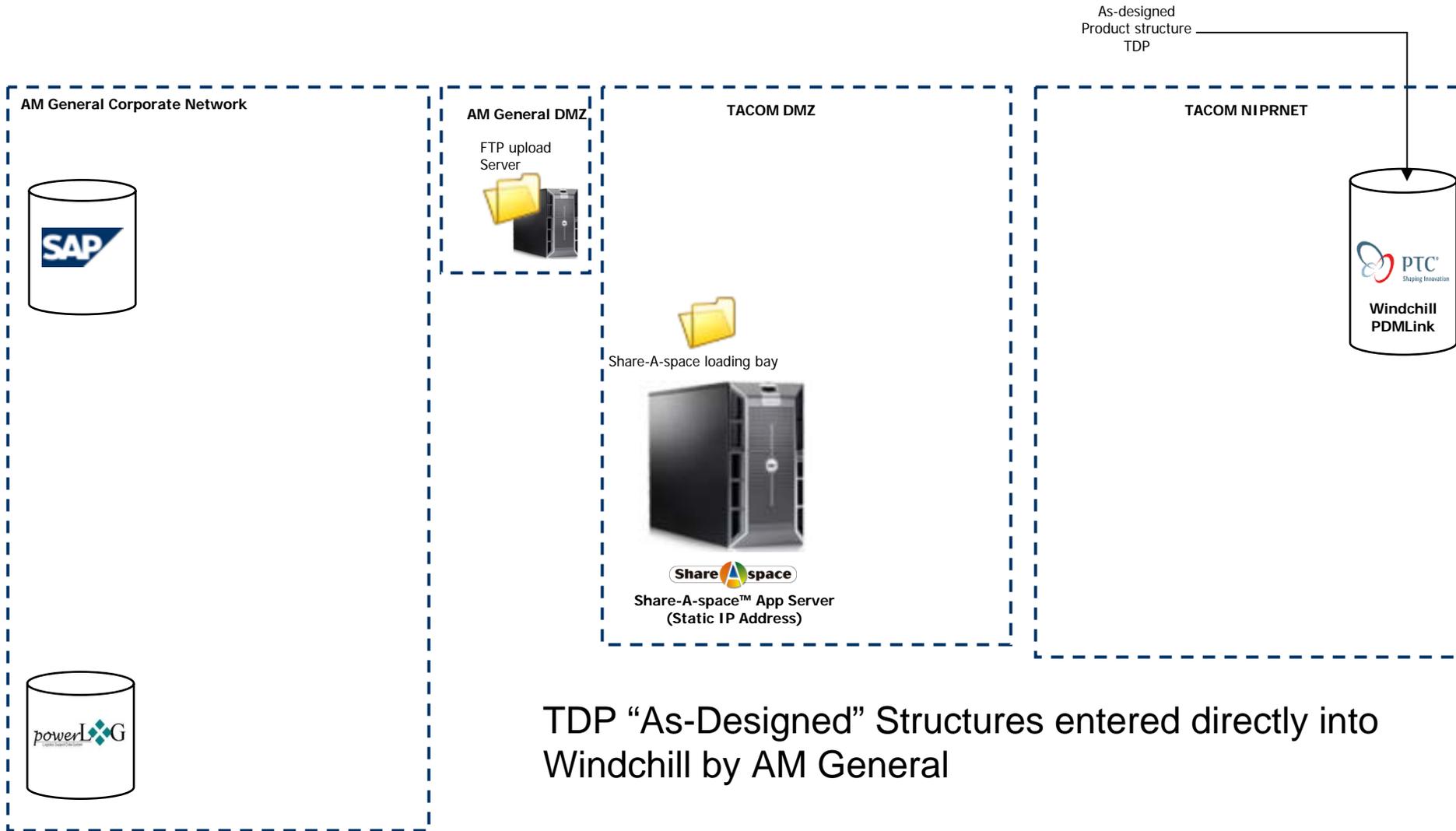
Eurostep AB 2007

Local intranet

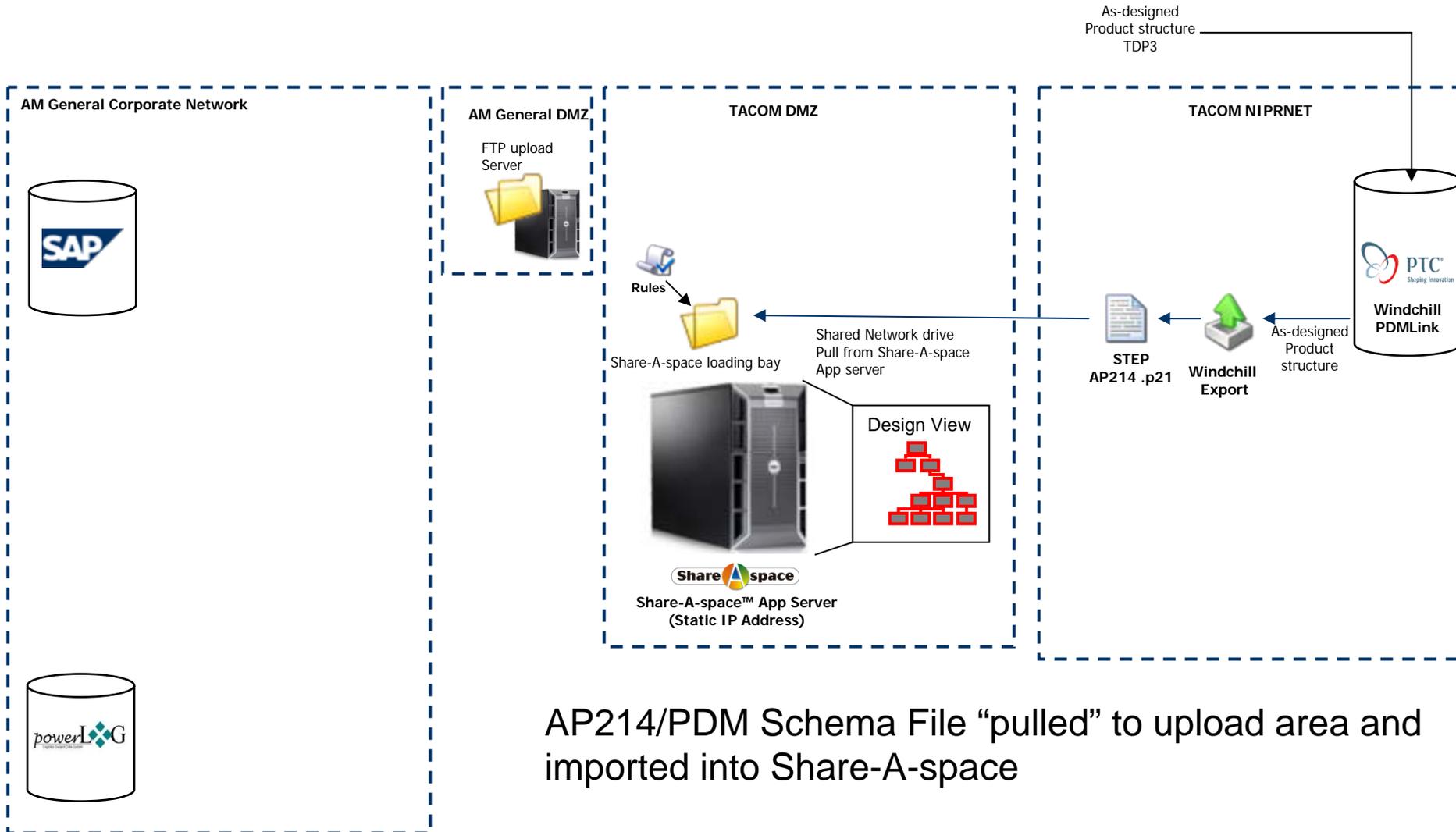
HMMWV Pilot – Demo Scenario

2. Initial Data Load – TARDEC Windchill Data

- Current content of TARDEC Windchill
- Extracted data from Windchill as STEP
- Loaded meta data into Share-A-space
 - Not supporting drawings/models
 - Used to enable comparison



TDP "As-Designed" Structures entered directly into Windchill by AM General



AP214/PDM Schema File “pulled” to upload area and imported into Share-A-space

```
STEP_EXP_2007-5-12_10-2-47.stp - Notepad
File Edit Format View Help
ISO-10303-21;
```

```
STEP_EXP_2007-5-12_10-2-47.stp - WordPad
File Edit View Insert Format Help
ISO-10303-21;
HEADER;
FILE_DESCRIPTION('Windchill STEP Data','windchill_schema','2;1');
FILE_NAME('C:\\ptc\\Windchill_8.0\\temp\\1181685770875_step\\STEP_EXP_2007-5-12_10-2-47.stp',
'2007-06-12T17:03:07',('author'),('Parametric Technology','Tech Marketing','Berlin','GE',
'11111'),'1.0','Windchill STEP Import/Export','ER');
FILE_SCHEMA('PDM_SCHEMA');
ENDSEC;

DATA;
#22= PRODUCT('12460078','EXHAUST SYSTEM INSTALLATION', 'EXHAUST SYSTEM INSTALLATION', (#3));
#1= APPLICATION_CONTEXT('mechanical design');
#3= PRODUCT_CONTEXT('',#1,'');
#4= APPLICATION_PROTOCOL_DEFINITION('version 1.1','pdm_schema',1998,#1);
#5= PRODUCT_RELATED_PRODUCT_CATEGORY('part',$, (#22,#24,#26,#28,#30,#32,
#34,#36,#38,#40,#42,#44,#46,#48,#50,#52,#54,#56,#58,#60,#62,#64,#66,#68,
#70,#72,#74,#76,#78,#80,#82,#84,#86,#88,#90,#92,#94,#96,#98,#100,#102,
#104,#106,#108,#110,#112,#114,#116,#118,#120,#122,#124,#126,#128,#130,
#132,#134,#136,#138,#140,#142,#144,#146));
#1574= PRODUCT_RELATED_PRODUCT_CATEGORY('Cage Code','24617',(#74));
#7= PRODUCT_DEFINITION_CONTEXT('part definition',#1,'design');
#40= PRODUCT('B1821BH038C200N','Screw,Cap,Hexagon Head',
'Screw,Cap,Hexagon Head',(#3));
#42= PRODUCT('9416918','NUT','NUT',(#3));
#44= PRODUCT('12338343-2','CLAMP ASSEMBLY, MUFFLER,3-INCH FULL CIRCLE',
```

Share-A-space - falcon | 5.4.1 500 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://essevm74/main/frameSet/SASFrameSet.aspx

Raj Iyer, TARDEC
 Project Role: Administrator, TARDEC
 Application Context: MecDev MecDes MaiSup
 Effectivity: 2007-06-14 01:39:25 : Actual
 Identifier Context: TARDEC

12460078, G, INSTL EXHAUST SYSTEM
 Description N/A Level State MecDes - Not In Level State System
 Creator Craig Wyers MecDev - Not In Level State System
 Created Date 2007-06-12 22:24:02
 Owner AM General

Item Structure

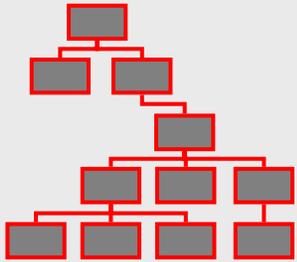
Presentation Options
 Application Context MecDes[Mechanical/Design] Effectivity Mode Actual
 Identifier Context TARDEC Current Effectivity 2007-06-14 01:39:25 Update

- 12460078 G INSTL EXHAUST SYSTEM
 - 0010 QTY: 2 Count | MS35842-14 CLAMP-HOSE
 - 0020 | 12460090 B MUFFLER CERAMIC FIBER
 - 0025 | 11608950-24 G1 8.62-2 HOSE CLAMP
 - 0030 QTY: 2 Count | 12338337 E INSULATOR PAD TAILPIPE
 - 0040 QTY: 2 Count | 12338338 INSULATOR RADIATOR SUPT
 - 0050 QTY: 3 Count | 12338339 GASKET - CAT COW TO MUFF
 - 0070 QTY: 6 Count | EC12338341 A2 PLATE-REINF-INSULATOR
 - 0080 QTY: 2 Count | 12338342 SEAL ASM EXHAUST MANIFOLD
 - 0090 | 12338343-1 C2 CLAMP ASM
 - 0100 QTY: 2 Count | 12338343-2 C2 CLAMP ASSY - MUFFLER
 - 0110 | 12338346 A2 HANGER ASM - TAILPIPE
 - 0130 | 12460082 B SHIELD ASM - HEAT
 - 0140 | 12338350 A1 TAILPIPE ASSEMBLY

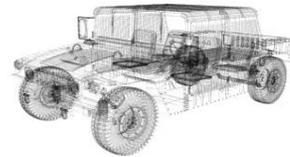
Operations
 Edit
 View
 Structure
 Approval Status

Eurostep AB 2007

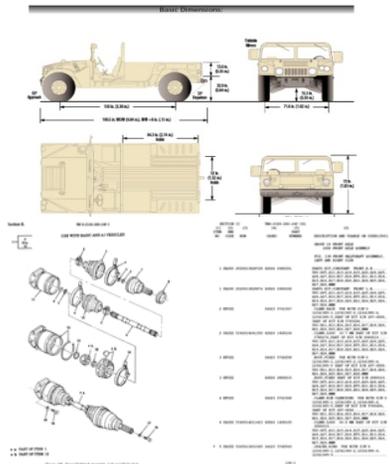
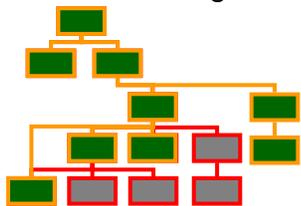
Done Local intranet



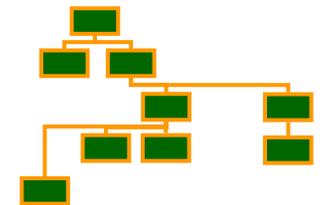
"As Used To Manufacture" Version Release



"As Used to Manufacture"
View + As Designed View



As Designed View



- Complete As-Manufactured data set loaded from AM General SAP to Share-A-space
 - 3030 parts plus example CAD models and drawings
- Partial data set loaded from TARDEC's Windchill system for demo
 - Exhaust sub system comprising 63 Parts

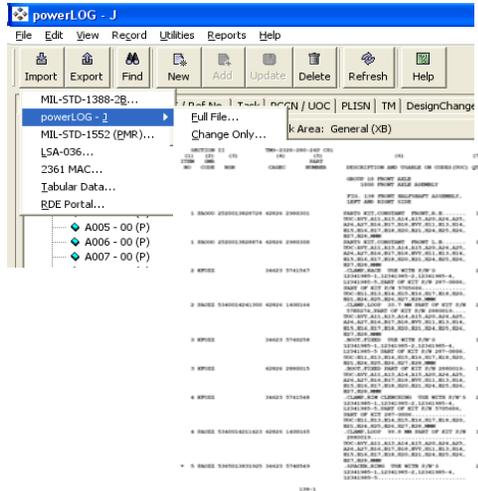
HMMWV Pilot – Demo Scenario

3. Initial Data Load – AM General powerLog Data

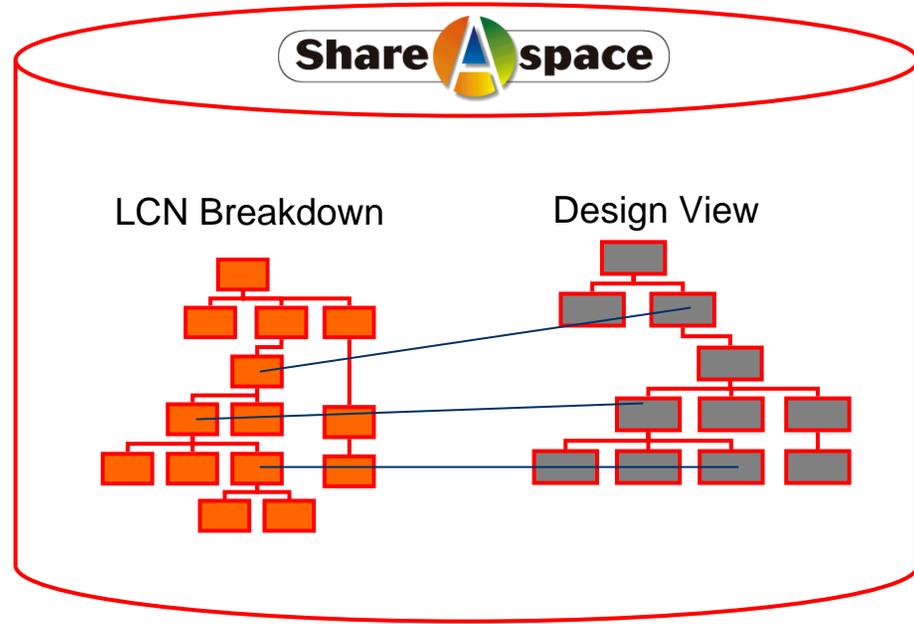
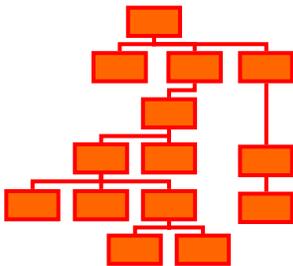
- Mil Std 1388 covers a broad scope of logistic support analysis (LSA) including failure modes, task analysis and spare-parts
 - This analysis is usually undertaken as part of designing the support system for a product
- AM General use a report generated from Mil Std 1388 data to supply provisioning list data to the Army
 - The data and report are created using the powerLog system
 - powerLog is the reference Mil Std 1388 implementation produced by LOGSA
- The data provided by AM General covers a limited subset of Mil Std 1388:
 - A breakdown of the end-item using Logistic Control Numbers (LCNs) to identify relevant positions
 - The data here is a physical breakdown (cf. functional) that corresponds to an assembly structure
 - Links from that breakdown to the corresponding parts
- As much more of Mil Std 1388 is relevant to PLCS it was decided to work with the data as held by powerLog rather than the output report
 - The reduced scope allowed use of existing PLCS DEX capabilities
 - Coverage of the full scope of Mil Std 1388 by PLCS DEXs is not yet in place

powerLXG
Logistics Support Data System

LSAR



LCN Breakdown



powerLOG - J

File Edit View Record Utilities Reports Help

Import Export Find New Add Update Delete Refresh Help

PLISN	TM	DesignChange	Facility	Skill	Job	Drawing
EIAC	Indentured Item	CAGE / Ref No.	Task	PCCN / UOC		

Work Area: Provisioning > Part Application (HG)

- HMV
 - A - 00 (P)
 - A01 - 00 (P)
 - A01A01 - 00 (P)
 - A01B - 00 (P)
 - A01B01 - 00 (P)
 - A01B02 - 00 (P)
 - A01B03 - 00 (P)
 - A01C - 00 (P)
 - A01C01 - 00 (P)**
 - A01C02 - 00 (P)
 - A01C03 - 00 (P)
 - A01C04 - 00 (P)
 - A01D - 00 (P)
 - A01D01 - 00 (P)
 - A01D02 - 00 (P)
 - A01D03 - 00 (P)
 - A01D04 - 00 (P)
 - A01E - 00 (P)
 - A01E01 - 00 (P)
 - A01E02 - 00 (P)
 - A01E03 - 00 (P)
 - A01F - 00 (P)
 - A01F01 - 00 (P)
 - A01F02 - 00 (P)
 - A01G - 00 (P)
 - A01G01 - 00 (P)
 - A01G02 - 00 (P)

CAGE	Reference Number	Item Name
9C234	12460083-1	BRACKET

General PTD MTD/RTD/RCT First Appearance Misc.

Key

CAGE Code 9C234

Ref No. 12460083-1

EIAC HMV

LCN A01C01

ALC 00

LCN Type P - Physical

PLISN

Prior Item PLISN

Indenture Code

Maintenance Action Code

Max. Allowable Operating Time

Essentiality Code

Line Replaceable Unit (LRU)

SMR Code

Quantity Per Assembly (QPA)

MRR 1

MRR 2

MRR Modifier

Work Unit Code

Check out <https://www.logsa.army.mil/alc/powerLOG-J/>

41 item(s) Showing all items mapped to EIAC HMV

start powerLOG - J The GIMP EN Type to search 16:41

AM General Corporate Network



AM General DMZ



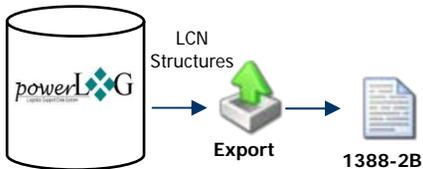
TACOM DMZ



TACOM NIPRNET



Share-A-space™ App Server
(Static IP Address)



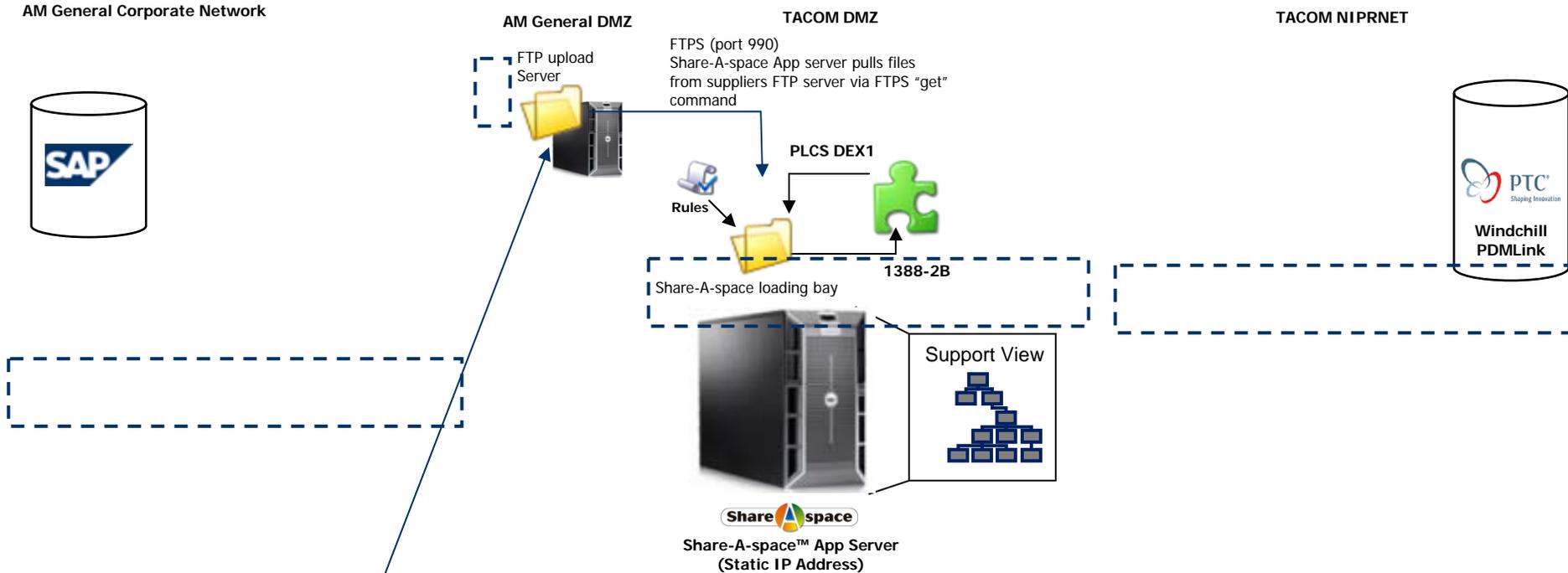
powerLog LSAR Data exported to MilStd 1388-2B format using powerLog Export capability



LSA data exported as 1388-2B format



```
demo.dat - WordPad
File Edit View Insert Format Help
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
|XA HMV      1212211111113
XB HMV      A          00PACHMMWVBVY
XB HMV      A01        00PBFRAME ASSY, COMPLET
XB HMV      A01A01     00PDCROSSMEMBER
XB HMV      A01B      00PCBRACKETS - FRAME
XB HMV      A01B01    00PDBRACKETS #4 - FRAME
XB HMV      A01B02    00PDBRACKETS #1 - FRAME
XB HMV      A01B03    00PDBRACKETS #1 - FRAME
XB HMV      A01C      00PCBRACKETS - FRONT AX
XB HMV      A01C01    00PDBRACKET - FRONT AXL
XB HMV      A01C02    00PDPLATE RH
XB HMV      A01C03    00PDBRACKET - FRONT AXL
XB HMV      A01C04    00PDPLATE LH
XB HMV      A01D      00PCBRACKETS - REAR AXL
XB HMV      A01D01    00PDBRACKET - REAR AXLE
XB HMV      A01D02    00PDBRACKET - REAR AXLE
XB HMV      A01D03    00PDPLATE RH
XB HMV      A01D04    00PDPLATE LH
XB HMV      A01E      00PCREINFORCEMENT FRAME
XB HMV      A01E01    00PDREINFORCEMENT
XB HMV      A01E02    00PDBRACKET LT
XB HMV      A01E03    00PDBRACKET RT
XB HMV      A01F      00PCENGINE MOUNTING
XB HMV      A01F01    00PDBRACKET, ENGINE SUP
XB HMV      A01F02    00PDGUSSET, ENGINE SUPP
XB HMV      A01G      00PCAIR LIFT MOUNTING
XB HMV      A01G01    00PDAIR LIFT MOUNTING R
XB HMV      A01G01AA  00PETUBE - AIRLIFT RH
XB HMV      A01G01AB  00PEPLATE - AIRLIFT RH
XB HMV      A01G01AC  00PEFIXINGS - AIRLIFT R
XB HMV      A01G01AD  00PEMOUNTING PLATE - AI
XB HMV      A01G01AE  00PEEYE - AIRLIFT RH
XB HMV      A01G01AF  00PECHANNEL - AIRLIFT R
XB HMV      A01G01AG  00PESPLASH SHIELD BRACK
XB HMV      A01G02    00PDAIR LIFT MOUNTING L
XB HMV      A01G02AA  00PEMOUNTING PLATE LH
XB HMV      A01G02AB  00PECHANNEL - AIR LIFT
XB HMV      A01G02AC  00PEEYE - AIR LIFT LH
XB HMV      A01G02AD  00PESPLASH SHIELD BRACK
XB HMV      A01G02AE  00PENWIRE HARNESS BRACKE
XB HMV      A01G02AF  00PEBRACKET - AIR LIFT
XB HMV      A01G02AG  00PEPLATE - AIR LIFT LH
XH 9C234
HA 9C234RCSK26020          AIR LIFT LH
HA 9C234RCSK26042          BRACKET, AIR LFT LH
HA 9C23412338150-9        BRACKET-FRONT AXXL
For Help, press F1
```



MilStd1388-2B File "pulled" to the upload area, and mapped to a PLCS DEX1 File

MilStd 1388-2B File put on Upload server

powerLog LSAR Data exported to MilStd 1388-2B format using powerLog Export capability

PLCS DEX1 File imported into Share-A-space and connected to the "As_Designed" structure



1388-2B export mapped to PLCs



The image shows two WordPad windows side-by-side. The left window, titled 'demo.dat - WordPad', contains a list of export data entries. The right window, titled 'AMG_LSAR_demo.stp - WordPad', contains a corresponding list of PLC identification assignments. A large grey arrow points from the left window to the right window, indicating the mapping process.

Export Data (demo.dat)	PLC Assignment (AMG_LSAR_demo.stp)
XA HMV 121221111113	#234=IDENTIFICATION_ASSIGNMENT('12338148','/IGNORE','\$',(#145));
XB HMV A	#236=IDENTIFICATION_ASSIGNMENT('BRK''T #4 X-MBR LT','/IGNORE','\$',(#145));
XB HMV A01	#238=IDENTIFICATION_ASSIGNMENT('A01B01','/IGNORE','\$',(#621));
XB HMV A01A01	#240=IDENTIFICATION_ASSIGNMENT('HMV_A01B02_00','/IGNORE','\$',(#106));
XB HMV A01B	#242=IDENTIFICATION_ASSIGNMENT('BRACKETS #1 - FRAME','/IGNORE','\$',(#106,#107));
XB HMV A01B01	#244=IDENTIFICATION_ASSIGNMENT('12338149-1','/IGNORE','\$',(#146));
XB HMV A01B02	#246=IDENTIFICATION_ASSIGNMENT('BRK''T, #1 X-MBR LT','/IGNORE','\$',(#146));
XB HMV A01B03	#248=IDENTIFICATION_ASSIGNMENT('A01B02','/IGNORE','\$',(#636));
XB HMV A01C	#250=IDENTIFICATION_ASSIGNMENT('HMV_A01B03_00','/IGNORE','\$',(#107));
XB HMV A01C01	#252=IDENTIFICATION_ASSIGNMENT('12338149-2','/IGNORE','\$',(#147));
XB HMV A01C02	#254=IDENTIFICATION_ASSIGNMENT('BRK''T, #1 X-MBR RT','/IGNORE','\$',(#147));
XB HMV A01C03	#256=IDENTIFICATION_ASSIGNMENT('A01B03','/IGNORE','\$',(#649));
XB HMV A01C04	#258=IDENTIFICATION_ASSIGNMENT('HMV_A01C_00','/IGNORE','\$',(#108));
XB HMV A01D	#260=IDENTIFICATION_ASSIGNMENT('BRACKETS - FRONT AX','/IGNORE','\$',(#108));
XB HMV A01D01	#262=IDENTIFICATION_ASSIGNMENT('A01C','/IGNORE','\$',(#660));
XB HMV A01D02	#264=IDENTIFICATION_ASSIGNMENT('HMV_A01C01_00','/IGNORE','\$',(#109));
XB HMV A01D03	#266=IDENTIFICATION_ASSIGNMENT('BRACKET - FRONT AXL','/IGNORE','\$',(#109,#111));
XB HMV A01D04	#268=IDENTIFICATION_ASSIGNMENT('12460083-1','/IGNORE','\$',(#148));
XB HMV A01E	#270=IDENTIFICATION_ASSIGNMENT('BRACKET','/IGNORE','\$',(#148,#151));
XB HMV A01E01	#272=IDENTIFICATION_ASSIGNMENT('A01C01','/IGNORE','\$',(#675));
XB HMV A01E02	#274=IDENTIFICATION_ASSIGNMENT('HMV_A01C02_00','/IGNORE','\$',(#110));
	#276=IDENTIFICATION_ASSIGNMENT('PLATE RH','/IGNORE','\$',(#110,#116));
	#278=IDENTIFICATION_ASSIGNMENT('12338150-5','/IGNORE','\$',(#149));
	#280=IDENTIFICATION_ASSIGNMENT('PLATE','/IGNORE','\$',(#153,#149));
	#282=IDENTIFICATION_ASSIGNMENT('A01C02','/IGNORE','\$',(#690));
XB HMV A01G	#284=IDENTIFICATION_ASSIGNMENT('HMV_A01C03_00','/IGNORE','\$',(#111));
XB HMV A01G01	#286=IDENTIFICATION_ASSIGNMENT('12338150-9','/IGNORE','\$',(#150));
XB HMV A01G01AA	#288=IDENTIFICATION_ASSIGNMENT('BRACKET-FRONT AXXL','/IGNORE','\$',(#150));
XB HMV A01G01AB	#290=IDENTIFICATION_ASSIGNMENT('A01C03','/IGNORE','\$',(#703));
XB HMV A01G01AC	#292=IDENTIFICATION_ASSIGNMENT('HMV_A01C04_00','/IGNORE','\$',(#112));
XB HMV A01G01AD	#294=IDENTIFICATION_ASSIGNMENT('PLATE LH','/IGNORE','\$',(#112,#117));
XB HMV A01G01AE	#296=IDENTIFICATION_ASSIGNMENT('A01C04','/IGNORE','\$',(#714));
XB HMV A01G01AF	#298=IDENTIFICATION_ASSIGNMENT('HMV_A01D_00','/IGNORE','\$',(#113));
XB HMV A01G01AG	#300=IDENTIFICATION_ASSIGNMENT('BRACKETS - REAR AXL','/IGNORE','\$',(#113));
XB HMV A01G02	#302=IDENTIFICATION_ASSIGNMENT('A01D','/IGNORE','\$',(#725));
XB HMV A01G02AA	#304=IDENTIFICATION_ASSIGNMENT('HMV_A01D01_00','/IGNORE','\$',(#114));
XB HMV A01G02AB	#306=IDENTIFICATION_ASSIGNMENT('BRACKET - REAR AXLE','/IGNORE','\$',(#114,#115));
XB HMV A01G02AC	#308=IDENTIFICATION_ASSIGNMENT('12338151-8','/IGNORE','\$',(#151));
XB HMV A01G02AD	#310=IDENTIFICATION_ASSIGNMENT('A01D01','/IGNORE','\$',(#738));
XB HMV A01G02AE	#312=IDENTIFICATION_ASSIGNMENT('HMV_A01D02_00','/IGNORE','\$',(#115));
XB HMV A01G02AF	#314=IDENTIFICATION_ASSIGNMENT('12338151-9','/IGNORE','\$',(#152));
XB HMV A01G02AG	#316=IDENTIFICATION_ASSIGNMENT('BRACKET - REAR AXLE','/IGNORE','\$',(#152));
XH 9C234	#318=IDENTIFICATION_ASSIGNMENT('A01D02','/IGNORE','\$',(#751));
HA 9C234RCSK26020	#320=IDENTIFICATION_ASSIGNMENT('HMV_A01D03_00','/IGNORE','\$',(#116));
HA 9C234RCSK26042	#322=IDENTIFICATION_ASSIGNMENT('12338151-5','/IGNORE','\$',(#153));
HA 9C23412338150-9	#324=IDENTIFICATION_ASSIGNMENT('A01D03','/IGNORE','\$',(#762));

Share-A-space - falcon | 5.4.1 500 - Microsoft Internet Explorer

powerLOG - J

File Edit View Record Utilities Reports Help

Import Export Find New Add Update Delete Refresh Help

Address http://essev74/main/frameset/SASFrameset.aspx

Google

Raj Iyer, TARDEC
Project Role: Administrator
Effectivity: 2007-06-14.0

HMV_A_00, CHMMWVBVY
Description
Creator: Craig Wyers
Created Date: 2007-06-13 04:25:27
Owner: AM General

Item Structure

Presentation Options
Application Context: MaiSup[Maintenance/Support_stage]
Identifier Context: TARDEC

- HMV_A_00 CHMMWVBVY
 - A01 | HMV_A01_00 FRAME ASSY, COMPLE
 - A01B | HMV_A01B_00 BRACKETS - FR
 - A01B01 | HMV_A01B01_00 BRAC
 - A01B02 | HMV_A01B02_00 BRAC
 - A01B03 | HMV_A01B03_00 BRAC
 - A01C | HMV_A01C_00 BRACKETS - FR
 - A01C01 | HMV_A01C01_00 BRAC
 - A01C02 | HMV_A01C02_00 PLATE
 - A01C03 | HMV_A01C03_00 BRAC
 - A01C04 | HMV_A01C04_00 PLATE
 - A01D | HMV_A01D_00 BRACKETS - RE
 - A01D01 | HMV_A01D01_00 BRAC
 - A01D02 | HMV_A01D02_00 BRAC
 - A01D03 | HMV_A01D03_00 PLATE

Work Area: Provisioning > Part Application (HG)

- HMV
 - A - 00 (P)
 - A01A01 - 00 (P)
 - A01B - 00 (P)
 - A01B01 - 00 (P)
 - A01B02 - 00 (P)
 - A01B03 - 00 (P)
 - A01C - 00 (P)
 - A01C01 - 00 (P)
 - A01C02 - 00 (P)
 - A01C03 - 00 (P)
 - A01C04 - 00 (P)
 - A01D - 00 (P)
 - A01D01 - 00 (P)
 - A01D02 - 00 (P)
 - A01D03 - 00 (P)
 - A01D04 - 00 (P)
 - A01E - 00 (P)
 - A01E01 - 00 (P)
 - A01E02 - 00 (P)
 - A01E03 - 00 (P)
 - A01F - 00 (P)
 - A01F01 - 00 (P)
 - A01F02 - 00 (P)
 - A01G - 00 (P)
 - A01G01 - 00 (P)
 - A01G02 - 00 (P)

CAGE 9C234 Reference Number 12460083-1

General PTD MTD/RTD/RCT First Appearance Misc.

Key
CAGE Code: 9C234
Ref No.: 12460083-1
EIAC: HMV
LCN: A01C01
ALC: 00
LCN Type P - Physical

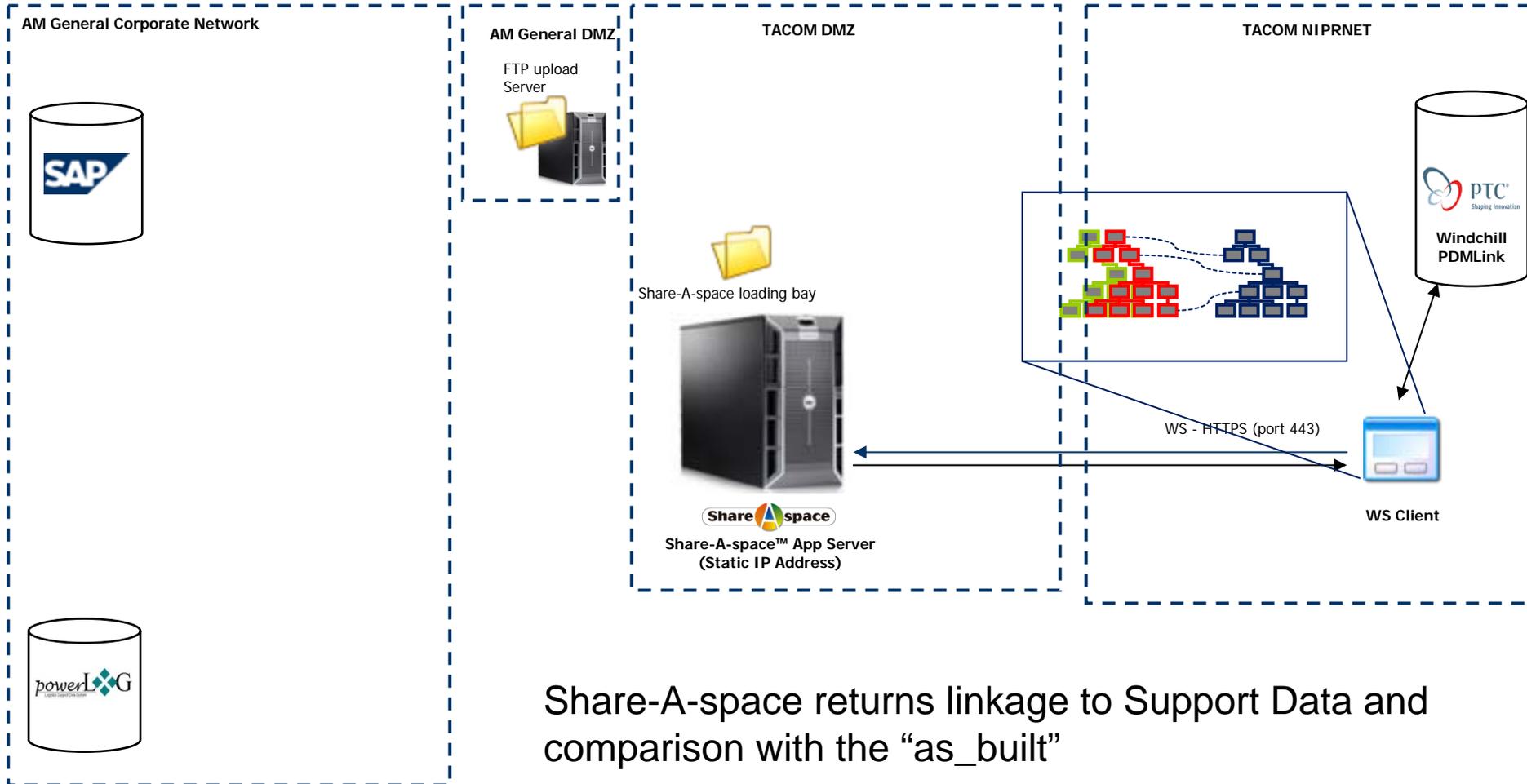
PLISN
Prior Item PLISN
Indenture Code
Maintenance Action Code
Max. Allowable Operating Time
Essentiality Code
Line Replaceable Unit (LRU)
SMR Code
Quantity Per Assembly (QPA)
MRR 1
MRR 2
MRR Modifier
Work Unit Code

Check out <https://www.logsa.army.mil/alc/powerLOG-J/>

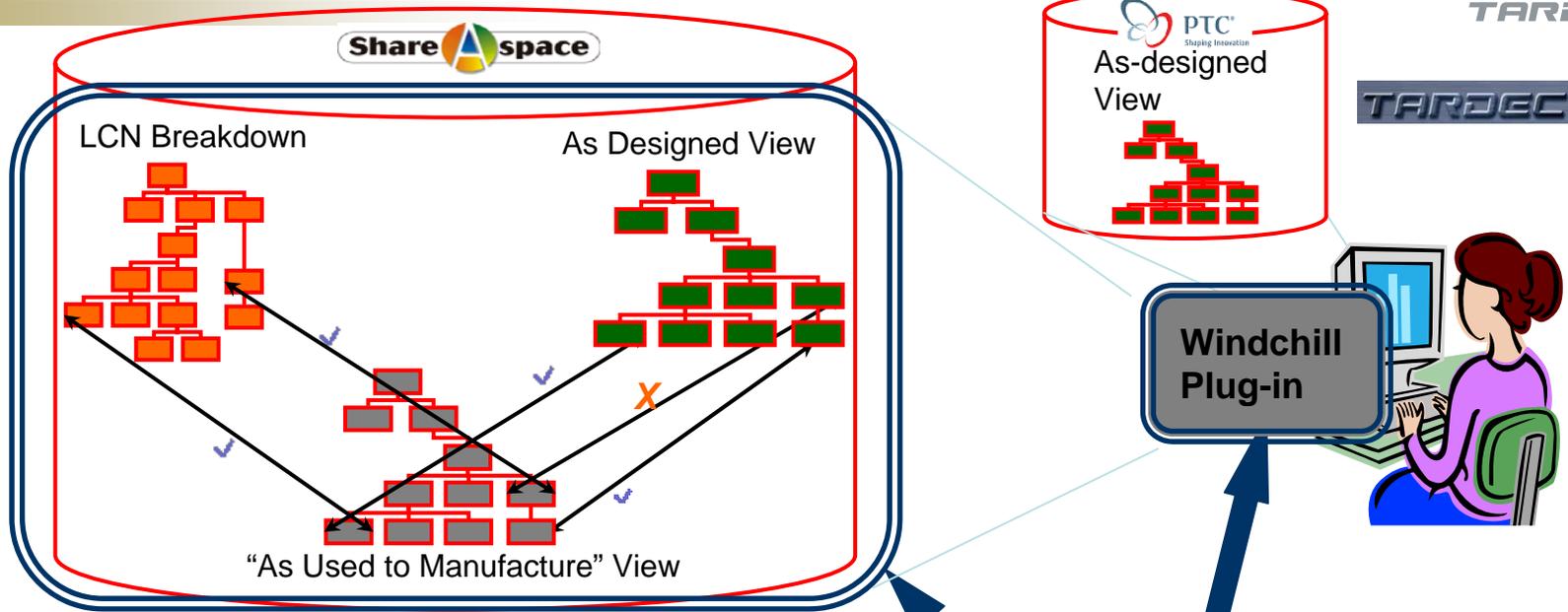
start powerLOG - J The GIMP

HMMWV Pilot – Demo Scenario

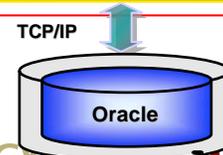
4. Consolidated Product Data Review with Windchill Plug-in



Share-A-space returns linkage to Support Data and comparison with the “as_built”

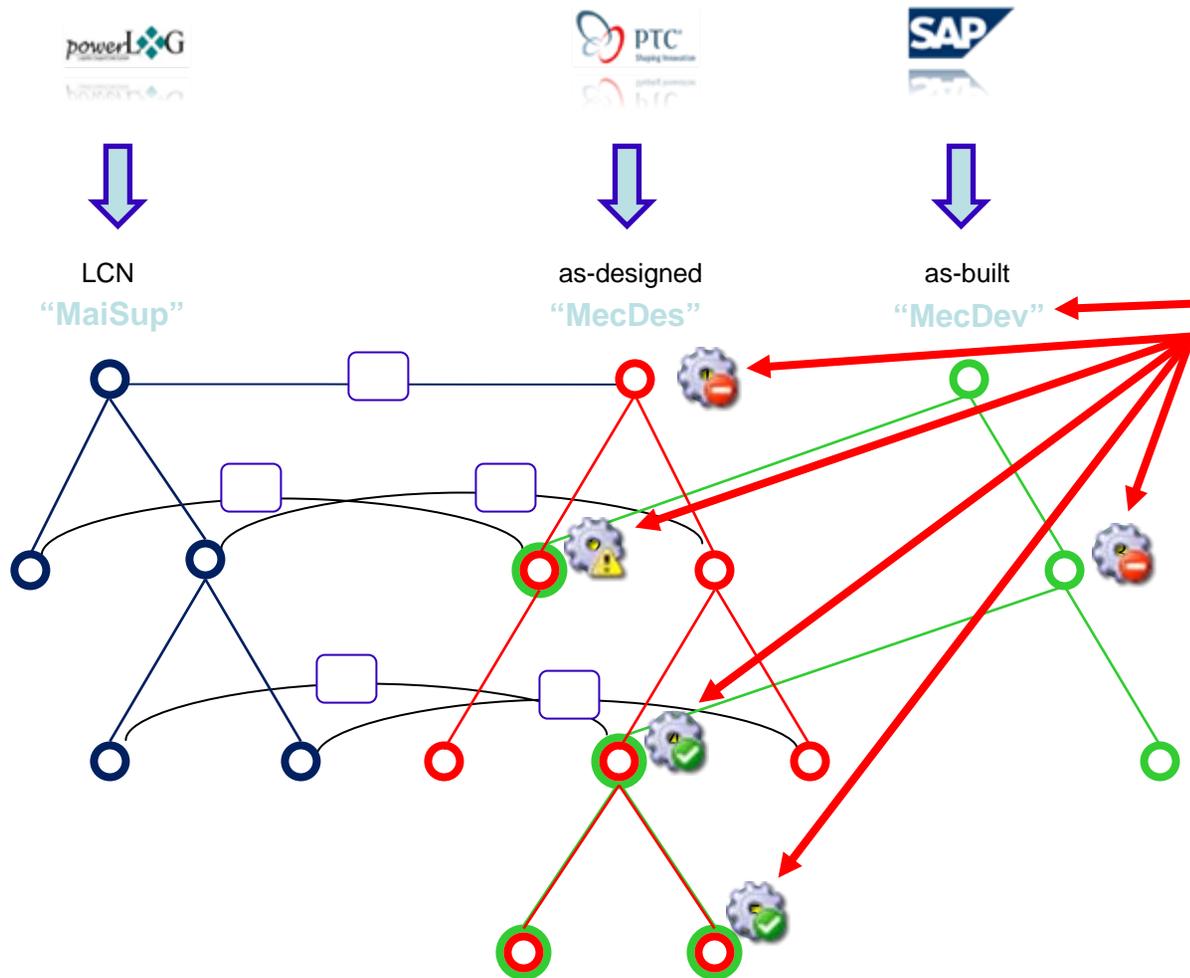


PLCS Master Data Integrator



- As-Designed data for the exhaust system comes from TARDEC's Windchill
- As-Manufactured data for the entire M1097-A2 comes from AM General's SAP system
- (Plus the LSA data from powerLog)
- Both sets of data are now available to navigate and view
 - Via the Share-A-space interface
 - Via a plug-in to Windchill
- Can now look at consistency between As-Manufactured and As-Designed structures
 - The following slide shows how differences in the structures are presented by use of icons

Data Consolidation ~~AGN Building Depth~~ “As_Designed Structure”



NOT THE SAME

Applications
Do not have
consistent
views of the
Children and
Each data set is
Different
given a label that
is used in the
Plug-in

HMMWV Pilot – Demo Scenario

5. Load Vehicle instance data and view in Share-A-space

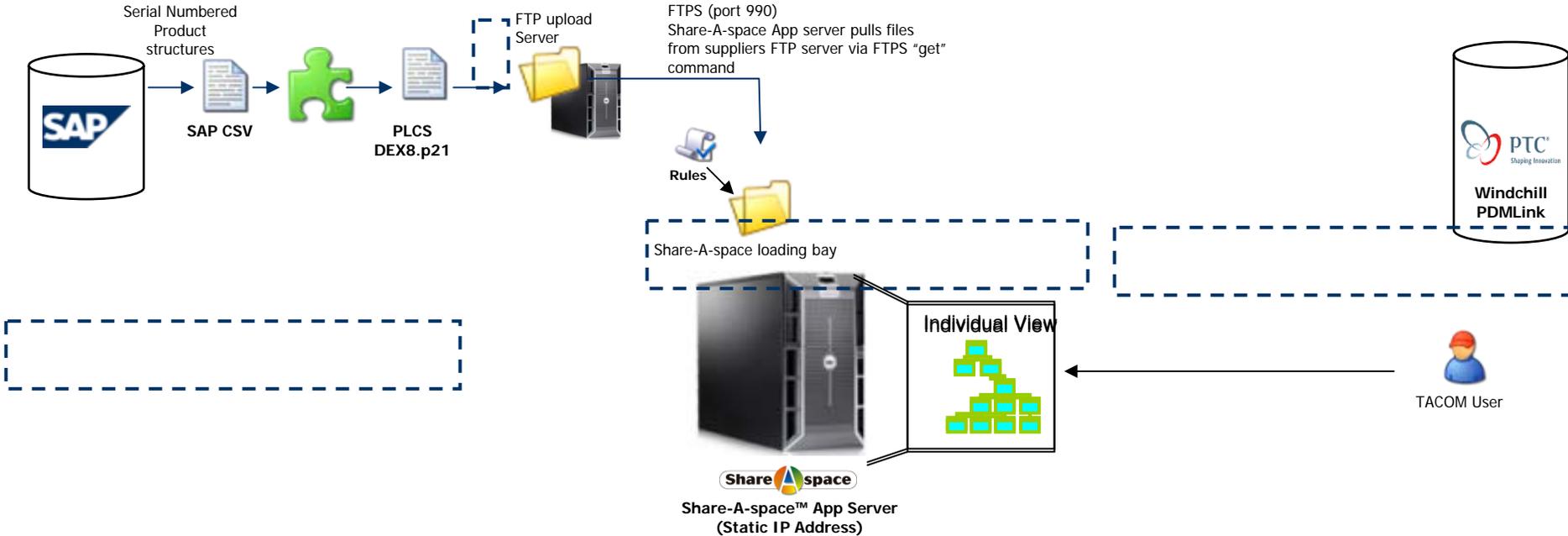
- Data on serial numbered structures exported from SAP
- Mapped into PLCS
- Loaded into Share-A-space
- Four serial numbered items per vehicle
 - plus the vehicle itself

AM General Corporate Network

AM General DMZ

TACOM DMZ

TACOM NIPRNET



SAP CSRP is still under development. The 'Individual View' of the data can be viewed in Share-A-space. A Plug-in to be developed.

Equipment Edit Goto Extras Structure Environment System Help

SAP

Display Equipment : SerNo.Detail

Class overview Measuring points/counters

Equipment 1000120823 Category T Military Vehicle

Description HMMWV, M1097A2

Status ECUS

Valid from 08/21/2006 Exp.date 12/31/9999

Structure Warranty Sales and Distribution Ser. data Vendor data/D...

General

Material S0016001AW

HMMWV, M1097A2

Serial number 236239

Last SerialNo 236239 History

Stock information

Stock type Plant StorageLocation Stock batch Special stock Customer Sales order Owner of stock

Company Code Master batch Vendor WBS element

CWEYERS sapprda1 OVR

The serial number of a 1097A2 as held in SAP

SAP

Assignment Edit Goto Value assignment Extras Environment System Help

Display Equipment : Classification

Object

Equipment 1000120823 HMMVV, M1097A2

Class type 002 Equipment class

Assignments

Class	Description	Std...	S...	lc...	ltm
MILITARY-VEHICLE	MILITARY-VEHICLE	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	10

Entry 1 / 1

Values for Class MILITARY-VEHICLE - Object 1000120823

General

Characteristic description	Value
BODY SERIAL NUMBER	00202217
Trim Feeder Line	Track 1
ENGINE SERIAL NUMB...	100HM C1116061
REPLACEMENT ENGINE	
ACCEPTANCE LOT NU...	
RETAIL DELIVERY DATE	
BUILD DATE	06/01/2006
TRANSMISSION-NUMBER	616KYPH00013711
TRANSFER-CASE NUM...	PEC12447125SBK469180
REGISTRATION NUMBER	NONE

Inconsistent

CWEYERS | sapprda1 | OVR

Component serial numbers for the same 1097A2 as held in SAP



SAP export - Serial numbered data as Ascii file



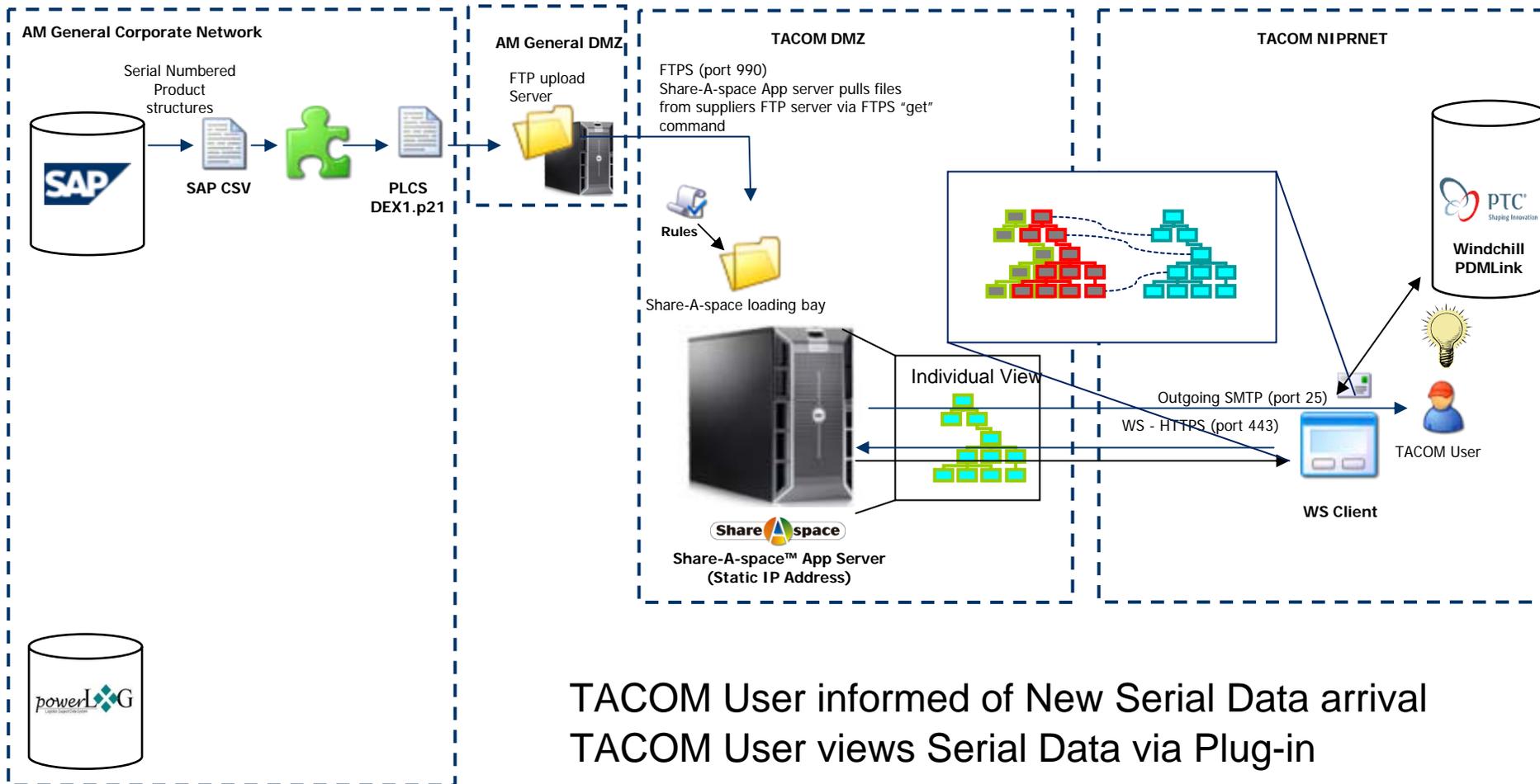
600	229934	S0016001AU	"HMMWV, M1097A2"	2-Dec-2005	8750315	R	1000113361	000000001000113361
600	229940	S0016001AU	"HMMWV, M1097A2"	2-Dec-2005	8750315	R	1000113367	000000001000113367
600	229948	S0016001AU	"HMMWV, M1097A2"	2-Dec-2005	8750315	R	1000113374	000000001000113374
600	229952	S0016001AU	"HMMWV, M1097A2"	2-Dec-2005	8750315	R	1000113378	000000001000113378
600	229958	S0016001AU	"HMMWV, M1097A2"	2-Dec-2005	8750315	R	1000113384	000000001000113384
600	229970	S0016001AR	"HMMWV, M1097A2"	3-Dec-2005	8750315	R	1000113396	000000001000113396
600	229976	S0016001AR	"HMMWV, M1097A2"	3-Dec-2005	8750315	R	1000113402	000000001000113402
600	229992	S0016001AR	"HMMWV, M1097A2"	3-Dec-2005	8750315	R	1000113417	000000001000113417
600	229996	S0016001AR	"HMMWV, M1097A2"	3-Dec-2005	8750315	R	1000113421	000000001000113421
600	230002	S0016001AR	"HMMWV, M1097A2"	3-Dec-2005	8750315	R	1000113427	000000001000113427
600	230008	S0016001AR	"HMMWV, M1097A2"	5-Dec-2005	8750315	R	1000113433	000000001000113433
600	230014	S0016001AR	"HMMWV, M1097A2"	5-Dec-2005	8750315	R	1000113439	000000001000113439
600	230022	S0016001AR	"HMMWV, M1097A2"	5-Dec-2005	8750315	R	1000113475	000000001000113475
600	230038	S0016001AR	"HMMWV, M1097A2"	5-Dec-2005	8750315	R	1000113490	000000001000113490
600	230048	S0016001AR	"HMMWV, M1097A2"	5-Dec-2005	8750315	R	1000113500	000000001000113500
600	230064	S0016001AR	"HMMWV, M1097A2"	6-Dec-2005	8750315	R	1000113515	000000001000113515
600	230592	S0016001AR	"HMMWV, M1097A2"	6-Jan-2006	8750315	R	1000114074	000000001000114074
600	230600	S0016001AR	"HMMWV, M1097A2"	6-Jan-2006	8750315	R	1000114082	000000001000114082
600	230624	S0016001AR	"HMMWV, M1097A2"	20-Dec-2005	8750315	R	1000114105	000000001000114105
600	230644	S0016001AR	"HMMWV, M1097A2"	20-Dec-2005	8750315	R	1000114124	000000001000114124
600	230652	S0016001AR	"HMMWV, M1097A2"	20-Dec-2005	8750315	R	1000114132	000000001000114132
600	230776	S0016001AS	"HMMWV, M1097A2"	23-Dec-2005	8750315	R	1000114251	000000001000114251
600	230890	S0016001AR	"HMMWV, M1097A2"	3-Jan-2006	8750315	R	1000114365	000000001000114365
600	230902	S0016001AR	"HMMWV, M1097A2"	3-Jan-2006	8750315	R	1000114376	000000001000114376
600	230908	S0016001AR	"HMMWV, M1097A2"	3-Jan-2006	8750315	R	1000114382	000000001000114382
600	230920	S0016001AR	"HMMWV, M1097A2"	4-Jan-2006	8750315	R	1000114394	000000001000114394
600	230926	S0016001AR	"HMMWV, M1097A2"	4-Jan-2006	8750315	R	1000114399	000000001000114399
600	230936	S0016001AR	"HMMWV, M1097A2"	4-Jan-2006	8750315	R	1000114409	000000001000114409
600	230944	S0016001AR	"HMMWV, M1097A2"	4-Jan-2006	8750315	R	1000114417	000000001000114417
600	230966	S0016001AR	"HMMWV, M1097A2"	4-Jan-2006	8750315	R	1000114438	000000001000114438
600	230980	S0016001AR	"HMMWV, M1097A2"	5-Jan-2006	8750315	R	1000114451	000000001000114451
600	230992	S0016001AR	"HMMWV, M1097A2"	9-Jan-2006	8750315	R	1000114463	000000001000114463
600	231008	S0016001AR	"HMMWV, M1097A2"	5-Jan-2006	8750315	R	1000114478	000000001000114478
600	231010	S0016001AR	"HMMWV, M1097A2"	5-Jan-2006	8750315	R	1000114480	000000001000114480
600	231028	S0016001AR	"HMMWV, M1097A2"	6-Jan-2006	8750315	R	1000114498	000000001000114498
600	231038	S0016001AR	"HMMWV, M1097A2"	6-Jan-2006	8750315	R	1000114507	000000001000114507
600	231044	S0016001AR	"HMMWV, M1097A2"	6-Jan-2006	8750315	R	1000114513	000000001000114513
600	231143	S0016001AR	"HMMWV, M1097A2"	10-Jan-2006	8750315	R	1000114653	000000001000114653
600	231159	S0016001AT	"HMMWV, M1097A2"	10-Jan-2006	8750315	R	1000114668	000000001000114668
600	231161	S0016001AR	"HMMWV, M1097A2"	10-Jan-2006	8750315	R	1000114670	000000001000114670
600	231183	S0016001AT	"HMMWV, M1097A2"	11-Jan-2006	8750315	R	1000114691	000000001000114691



Serial Numbered data mapped to PLCS



```
#2=PRODUCT_AS_INDIVIDUAL('/IGNORE','/IGNORE','/IGNORE');
#3=PRODUCT_AS_INDIVIDUAL('/IGNORE','/IGNORE','/IGNORE');
#4=PART('/IGNORE','/IGNORE','/IGNORE');
#5=PRODUCT_AS_INDIVIDUAL_VIEW('/IGNORE','/IGNORE','/IGNORE',#6,(),#7);
#8=PRODUCT_AS_INDIVIDUAL_VIEW('/IGNORE','/IGNORE','/IGNORE',#6,(),#9);
#10=EXTERNAL_CLASS('/IGNORE','Serial_identification_code','/IGNORE',#11);
#12=EXTERNAL_CLASS('/IGNORE','Organization_identification_code','/IGNORE',#11);
#14=EXTERNAL_CLASS('/IGNORE','Version_identification_code','/IGNORE',#11);
#15=EXTERNAL_CLASS('/IGNORE','In-Service','/IGNORE',#11);
#16=EXTERNAL_CLASS('/IGNORE','Maintenance','/IGNORE',#11);
#17=EXTERNAL_CLASS('/IGNORE','Part_identification_code','/IGNORE',#11);
#18=EXTERNAL_CLASS('/IGNORE','Development_stage','/IGNORE',#11);
#19=EXTERNAL_CLASS('/IGNORE','Mechanical_design','/IGNORE',#11);
#20=EXTERNAL_CLASS('/IGNORE','Name','/IGNORE',#11);
#21=EXTERNAL_CLASS('/IGNORE','Start_Date','/IGNORE',#11);
#11=EXTERNAL_CLASS_LIBRARY('urn:plcs:rdl:std','/IGNORE');
#36=CLASSIFICATION_ASSIGNMENT(#10,(#23),'/IGNORE');
#37=CLASSIFICATION_ASSIGNMENT(#12,(#38),'/IGNORE');
#53=CLASSIFICATION_ASSIGNMENT(#21,(#54),'/IGNORE');
#55=CLASSIFICATION_ASSIGNMENT(#10,(#33),'/IGNORE');
#56=CLASSIFICATION_ASSIGNMENT(#13,(#32),'/IGNORE');
#57=CLASSIFICATION_ASSIGNMENT(#20,(#35),'/IGNORE');
#58=CLASSIFICATION_ASSIGNMENT(#13,(#34),'/IGNORE');
#59=CLASSIFICATION_ASSIGNMENT(#21,(#60),'/IGNORE');
#7=PRODUCT_AS_REALIZED('/IGNORE','/IGNORE',#2);
#9=PRODUCT_AS_REALIZED('/IGNORE','/IGNORE',#3);
#61=PART_VERSION('/IGNORE','/IGNORE',#4);
#6=VIEW_DEFINITION_CONTEXT('/IGNORE','/IGNORE','/IGNORE');
#49=VIEW_DEFINITION_CONTEXT('/IGNORE','/IGNORE','/IGNORE');
#62=PRODUCT_CATEGORY('/IGNORE','part','/IGNORE');
#63=PART_VIEW_DEFINITION('/IGNORE','/IGNORE','/IGNORE',#49,(),#61);
#64=PRODUCT_DESIGN_VERSION_TO_INDIVIDUAL(#61,#7);
#65=PRODUCT_DESIGN_VERSION_TO_INDIVIDUAL(#61,#9);
#66=PRODUCT_DESIGN_TO_INDIVIDUAL(#4,#2);
#67=PRODUCT_DESIGN_TO_INDIVIDUAL(#4,#3);
#54=DATE_OR_DATE_TIME_ASSIGNMENT(#68,'/IGNORE',(#7));
#60=DATE_OR_DATE_TIME_ASSIGNMENT(#69,'/IGNORE',(#9));
#68=CALENDAR_DATE(2005,12,2);
#69=CALENDAR_DATE(2005,12,3);
#23=IDENTIFICATION_ASSIGNMENT('229934','/IGNORE','$',(#2));
#38=IDENTIFICATION_ASSIGNMENT('9C234','/IGNORE','/IGNORE',(#1));
#25=IDENTIFICATION_ASSIGNMENT(' ','/IGNORE','$',(#7,#9));
#27=IDENTIFICATION_ASSIGNMENT('8750315','/IGNORE','$',(#4));
#29=IDENTIFICATION_ASSIGNMENT('R','/IGNORE','$',(#61));
#31=IDENTIFICATION_ASSIGNMENT('S0016001AU','/IGNORE','$',(#2));
```



TACOM User informed of New Serial Data arrival
TACOM User views Serial Data via Plug-in

- The architecture proposed for FALCON has been successfully demonstrated with AM General
 - The PLCS standard and Share-A-space technology provide a “master data integrator” function
 - TARDEC and AM General continue to use existing systems
- Through FALCON, TARDEC can have access to a richer data set from OEMs
 - As-used-to-manufacture data and LSAR data available at TARDEC as well as approved design
 - Access to the data can be made available through TARDEC’s existing tool (Windchill)
- FALCON enables a route for improved data synchronization between AM General and TARDEC
 - Automated processes can be established
 - Manual intervention in the exchange of data can be eliminated
 - Out of Sync data can be identified

- FALCON delivers improved Data Quality
 - Inconsistencies identified between As-released and As-used-to-manufacture
 - Version differences
 - Part numbering and naming differences
 - Different names between LSAR and As-released for same part
- FALCON enables use of simple add-on services via web-services
 - Bill-of-Material comparator (part of the Plug-in)
- FALCON offers the possibility of a through life approach
 - Individual (serialized) data from SAP now available to TARDEC
 - Starting point for tracking configuration of individual vehicles
 - Individual and support data in line with PLCS

- FALCON's use of PLCS as the mediation format and Share-A-space as a host technology provide:
 - Reconciliation of product data cross-application
 - Configuration control of lifecycle views
 - Transparent interoperability services
 - Independence between OEM and Army IT systems
 - Platform for additional application capability
 - Absence of data lock-in
- FALCON approach applicable to other vehicle programs
 - Demonstration achieved using open approaches without company specific developments