Experience at SAMSUNG Electronics company Migrating from I-deas TDM

Taedong, Kim
Senior Engineer
Samsung Electronics Co. Ltd
tdkim@samsung.com

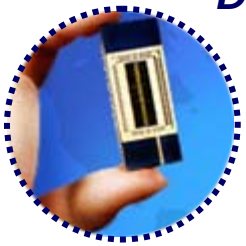
Premium Partners:

SAMSUNG Electronics Co.

Main Products

World Best !

DRAM

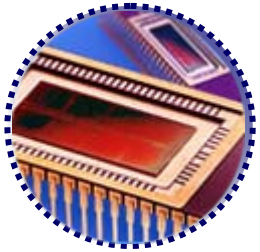


Color TV

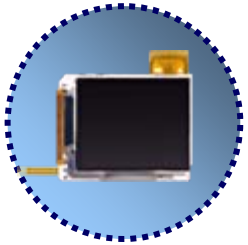
Flash Memory

Monitor

SRAM



TFT-LCD



LDI

MCP

Q4, 2005

Digital-ε Valley (suwon)

- Foundation : January 6, 1969
- Location : Suwon city, Gyeonggi province, Korea

Migration of TDM to Teamcenter Engineering

- Background
- How to solve?
- Data Migration Strategy
- Data Migration Path
- Effectiveness
- Current Status

1. Background

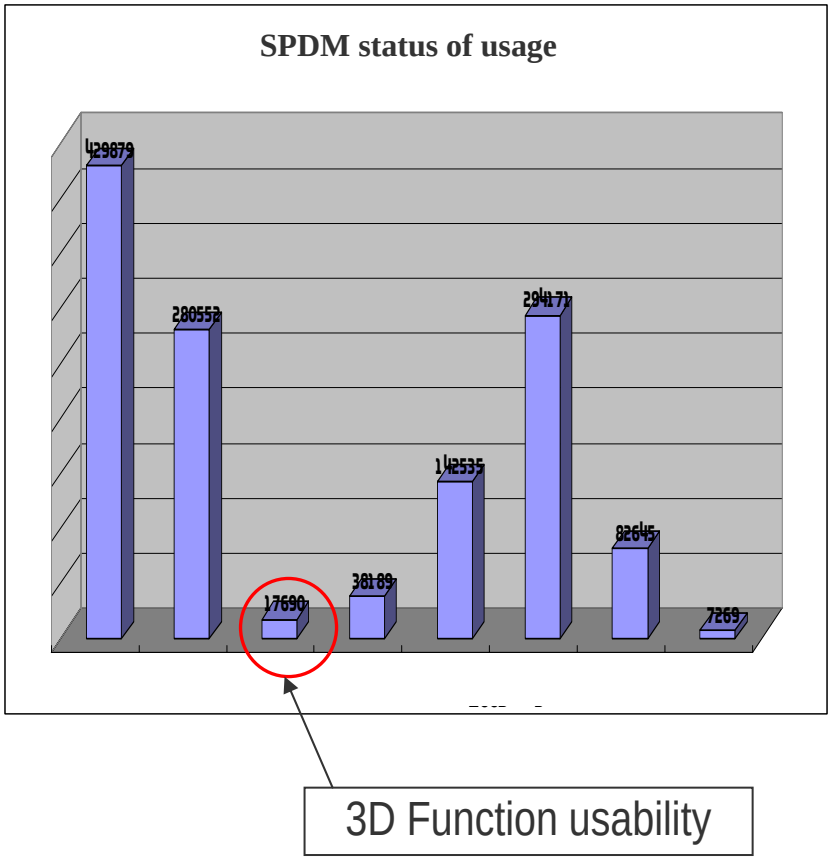
Major Issues of TDM & PDM

◆ Overlapping of 3D Data

- 3D Cad data managed in two systme TDM /PDM, It can confuse engineers what is the final data

◆ Low Usability & Functionality

- Complexity of 3D registering (4 steps)
- Too Much Time (Max : 2 Hours)
- Not sufficient function for mangement of mechanical CAD data



SPDM : Samsung Product Data Management

1. Background

- Analysis of Major Problem

Process	Major Problem
Design	-. It's difficult to use engineering data in design site -. No Regulation for interfacing b/w design and Engineering data
Engineering	-. We cannot use the assembly Data in PDM (Only used Parts) -. Complexity of 3D release process
Simulation/ Mock-Up	-. There is no system to manage Digital MockUp Data (jt file) and CAE Data
Change	-. Running CAD Data is in the TDM and Released Data in the PDM It can confuse Mechanical engineer to manage final data
Common	-. There isn't common parts library system and cad to BOM (Bill of materials) Integration system

1. Background

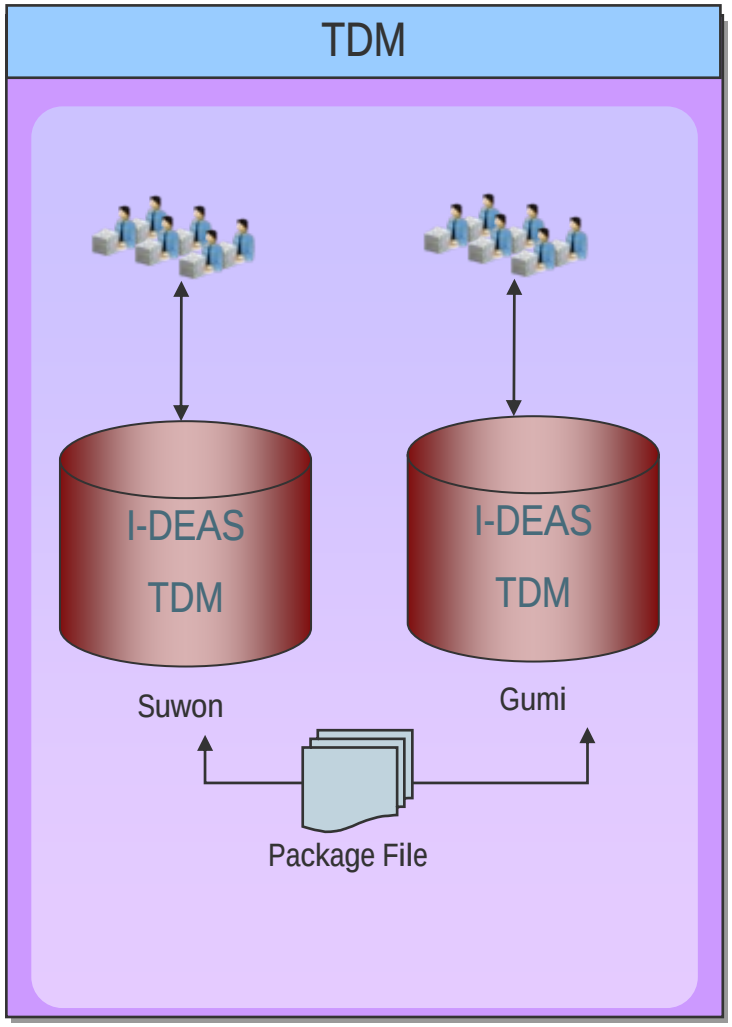
- Comparing Teamcenter Engineering with TDM

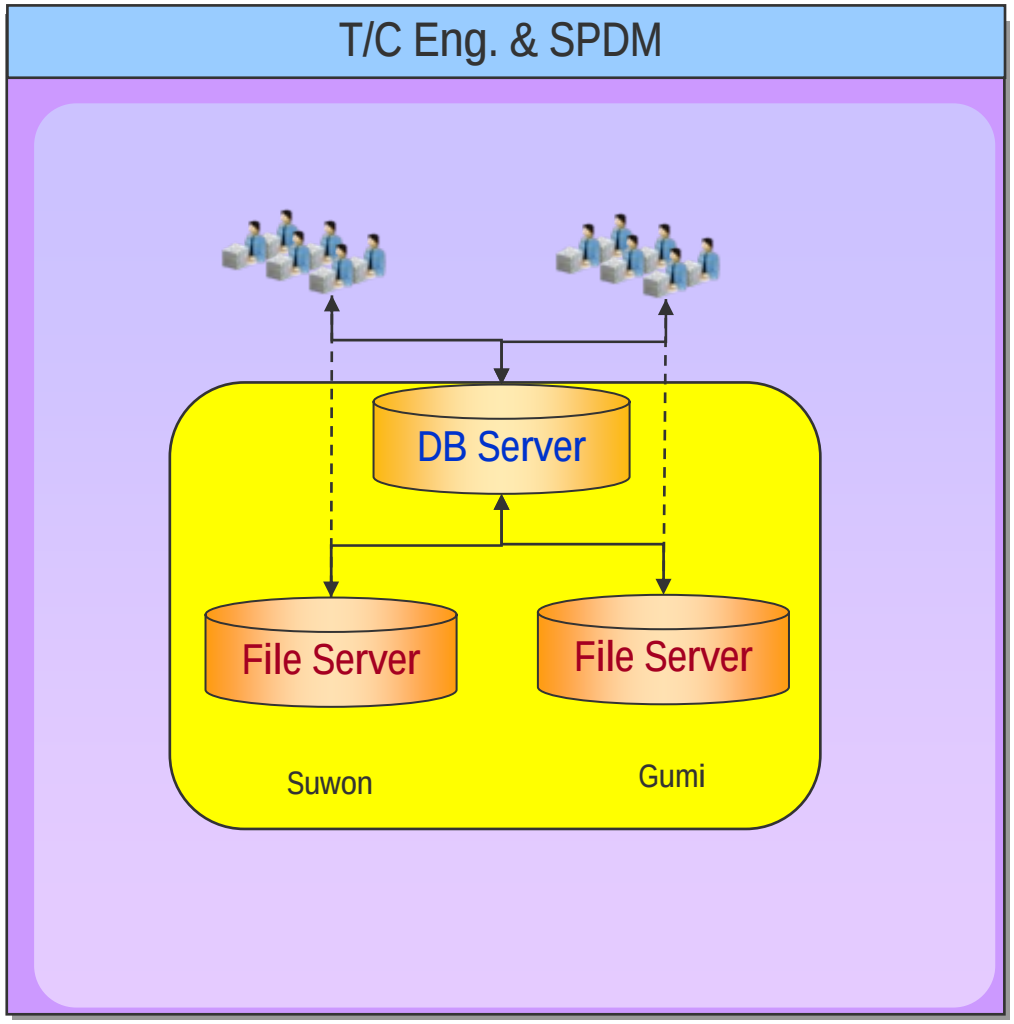
TDM	Teamcenter Engineering
• TDM manage Part Number and Part Name at the same time • Only I-DEAS users can connect to the data • Support File Format : Part/Assy/ Drawing/FEM Data • TDM uses its own DBMS (File DB) • TDM use Network mount Driver	• TCE manage a data using unique Part Number • Users who don't have I-DEAS S/W Can connect to the cad data they wish • Support File Format : TDM Format + JT File, document • TCE uses Oracle data base • TCE uses socket method

1. Background

- Comparing Teamcenter Engineering with TDM

➢ System Configuration

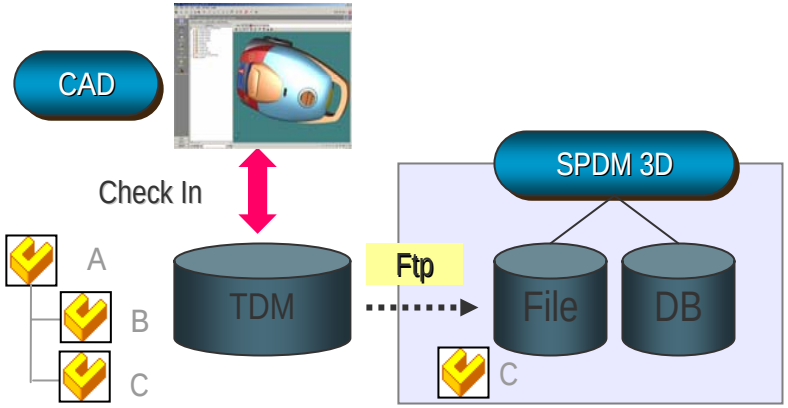




2. How to solve ?

- Improve PDM 3D Module

As-Is



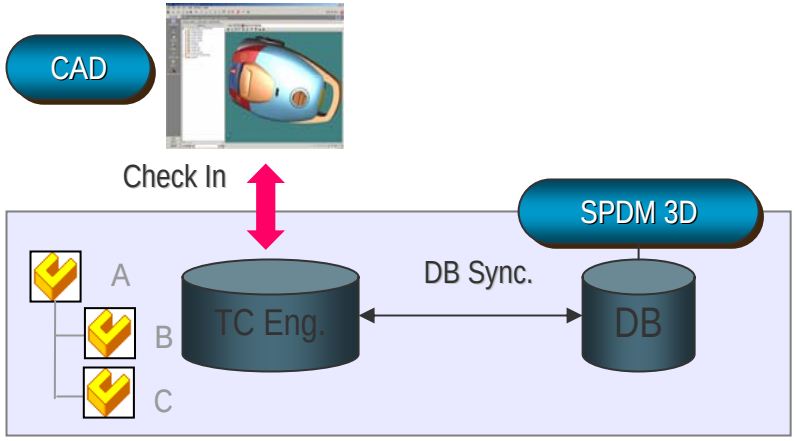
CAD -> TDM -> SPDM Structure

· It takes much time and confuse engineer due to complexity

TDM & SPDM Interface

· TDM & SPDM Interface can not use Assembly data

To-Be



Teamcenter Engineering Structure

· Engineer uses only Teamcenter engineering.

TC Eng. & SPDM Integration

· Use Assembly data and Easy to update

2. How to solve ?

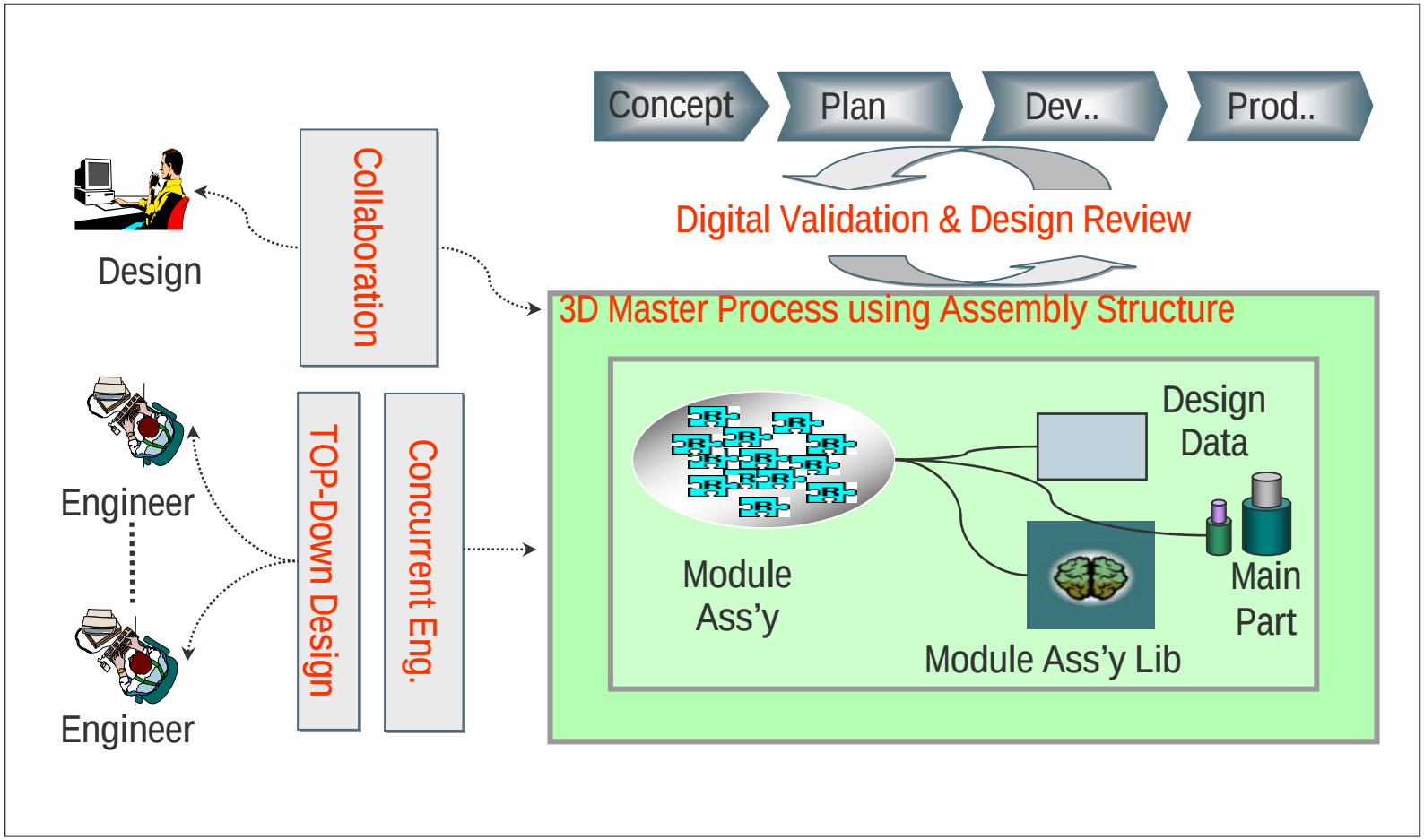
- Improve Process

Process	Result
Design	-. Sharing Teamcenter Engineering b/t Design & Engineering
Engineering	-. We cannot use the assembly Data in PDM (Only used Parts) -. Complexity of 3D release process
Simulation/ Mock-Up	-. There is no system to manage Digital MockUp Data (jt file) and CAE Data
Change	-. Running CAD Data is in the TDM and Released Data in the PDM It can confuse Mechanical engineer to manage final data
Common	-. There isn't common parts library system and cad to BOM (Bill of materials) Integration system

2. How to solve ?

- System Architecture

Assembly design Environment was realized in SPDM



3. Data Migration Strategy

-. Shedule

Schedule	Readiness(3 W)	Implementation (0.5W)	ME&S(1.5W)
ITEM	•Checking the TDM & SPDM 3D Data in divisions - TDM & SPDM Data Size - Eliminating abnormal data ↓ • Developing Migration Utility and Test - Administrator Education	• TeamCenter Server Installation ↓ • Data Migration ↓ • Validation of Data ↓ • Engineer Education	• Help Desk ↓ • Migrating the remain data manually ↓ • System Tuning

3. Data Migration Strategy

-. Schedule

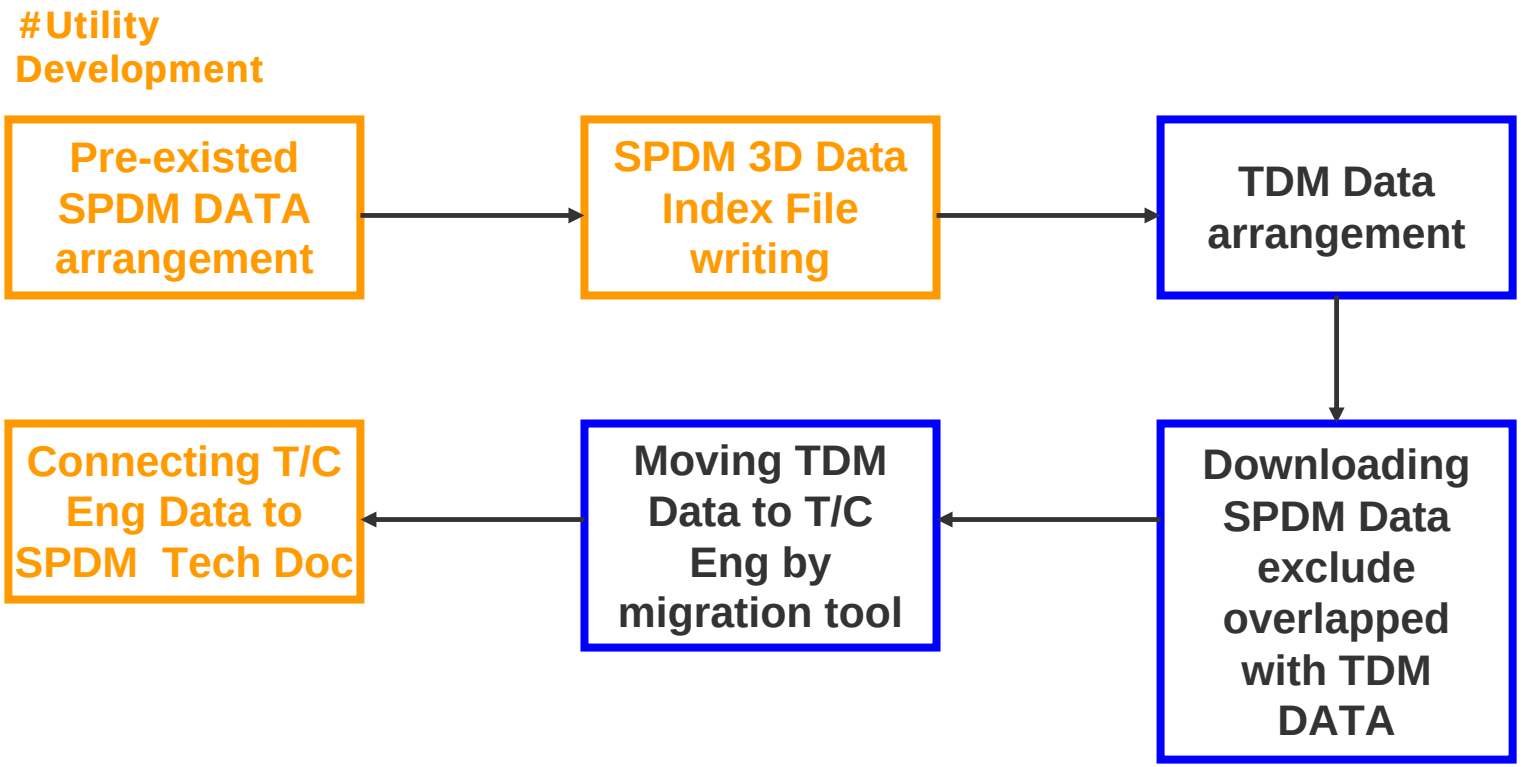
(week)

Division	Env./Server Setting	Data Arrangement (SPDM/TDM)	Migration	Examination /Education	Total
Division A	1	2	0.5	1	4.5
Division B	1	1	0.5	1	3.5
Division C	1	1	2	0.5	4
Division D	1	3	0.5	1	5.5

4. Considerations for Migration

For Migration
As I-DEAS Manager manages the model data with part code not by part name, part code should be arranged first.
AS I-DEAS Manager manages model data for each unique item, original version and latest version should be discriminated among the copied version.
One division uses several TDM server ➔ TDM server should be integrated to one server before migration
Project management system in TcEng should be same as TDM's for reuse the moved data.

5. Data Migration Path



5. Data Migration Path

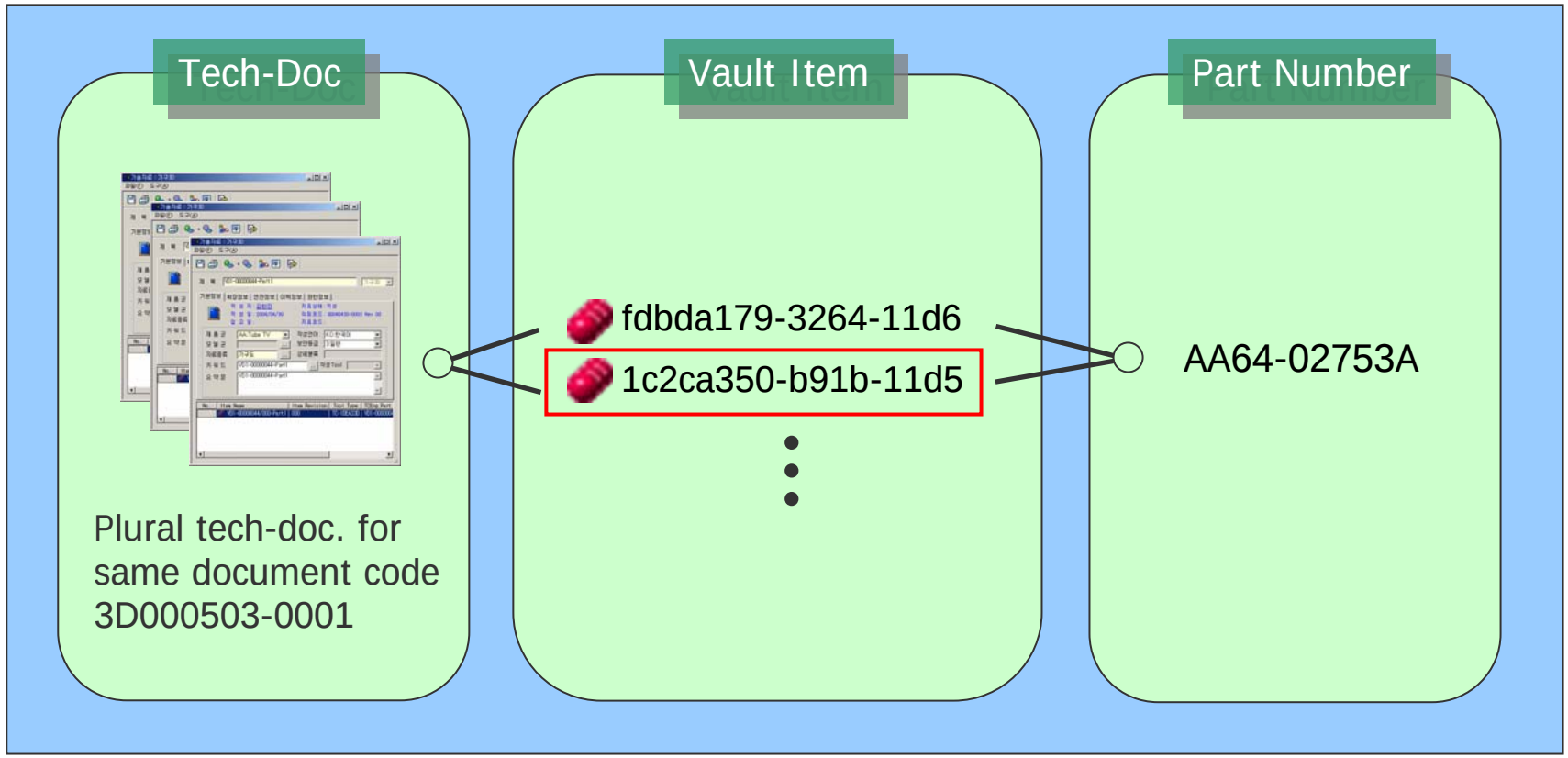
1. SPDM Data Migration

- Each Division established below condition for migration of SPDM data.
- Condition :
  - Tech Doc : Vault Item : Part Code = 1:1:1

5. Data Migration Path

1. SPDM Data Migration

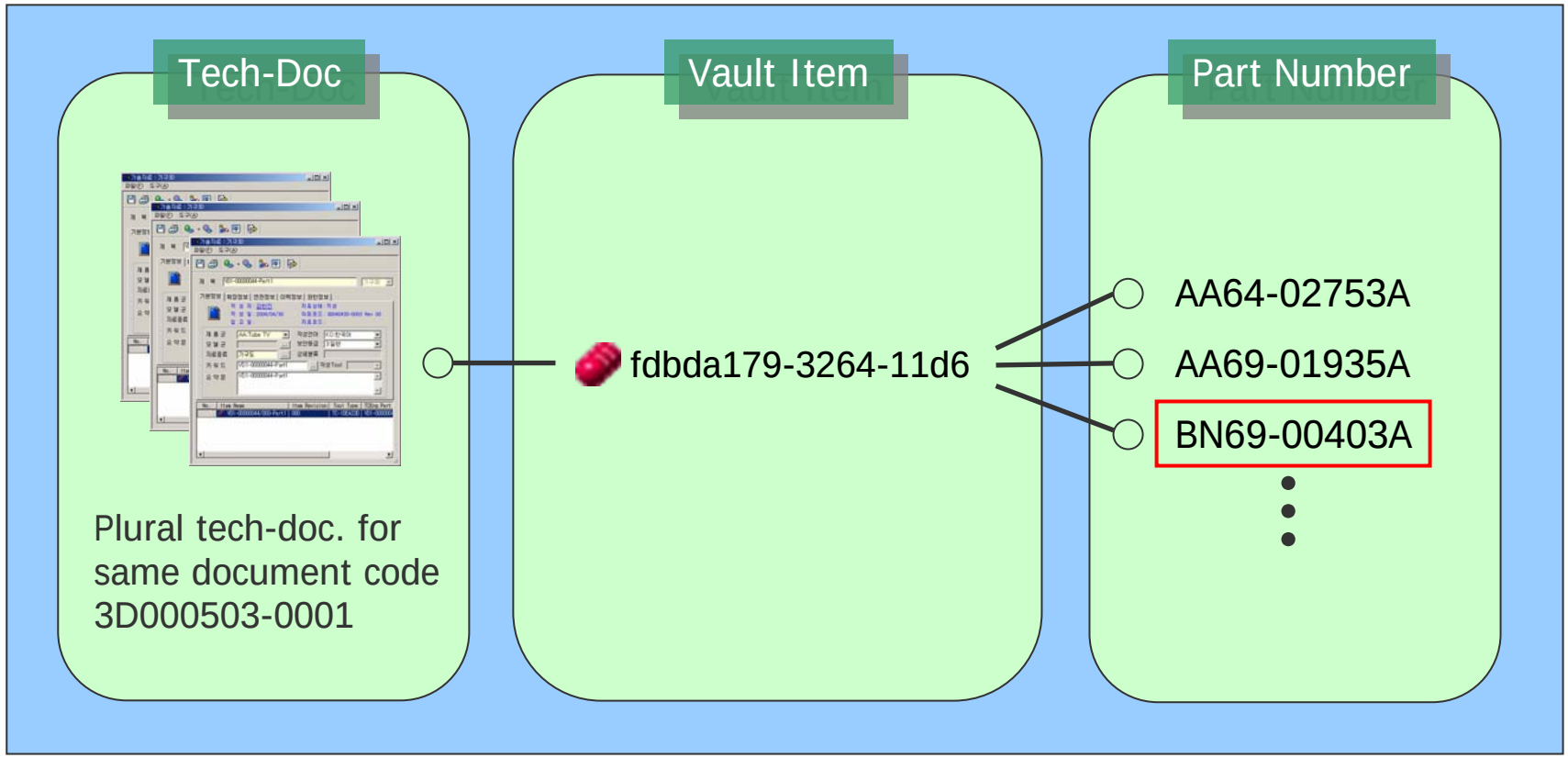
- **Case 1** Selecting one valid vault item to be attatched to related tech-doc.



5. Data Migration Path

1. SPDM Data Migration

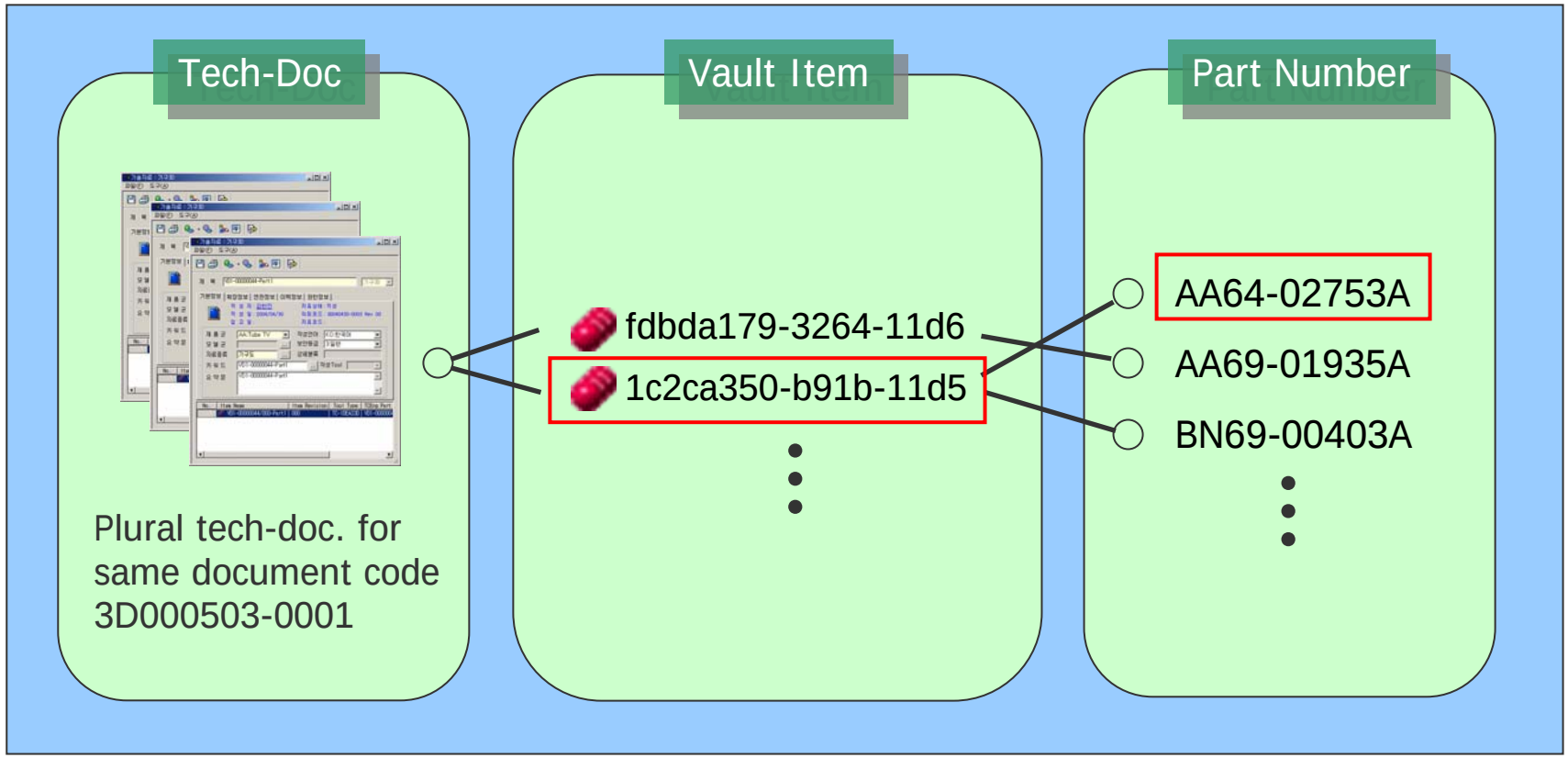
- **Case 2** Selecting one valid part code to be linked to related tech-doc.



5. Data Migration Path

1. SPDM Data Migration

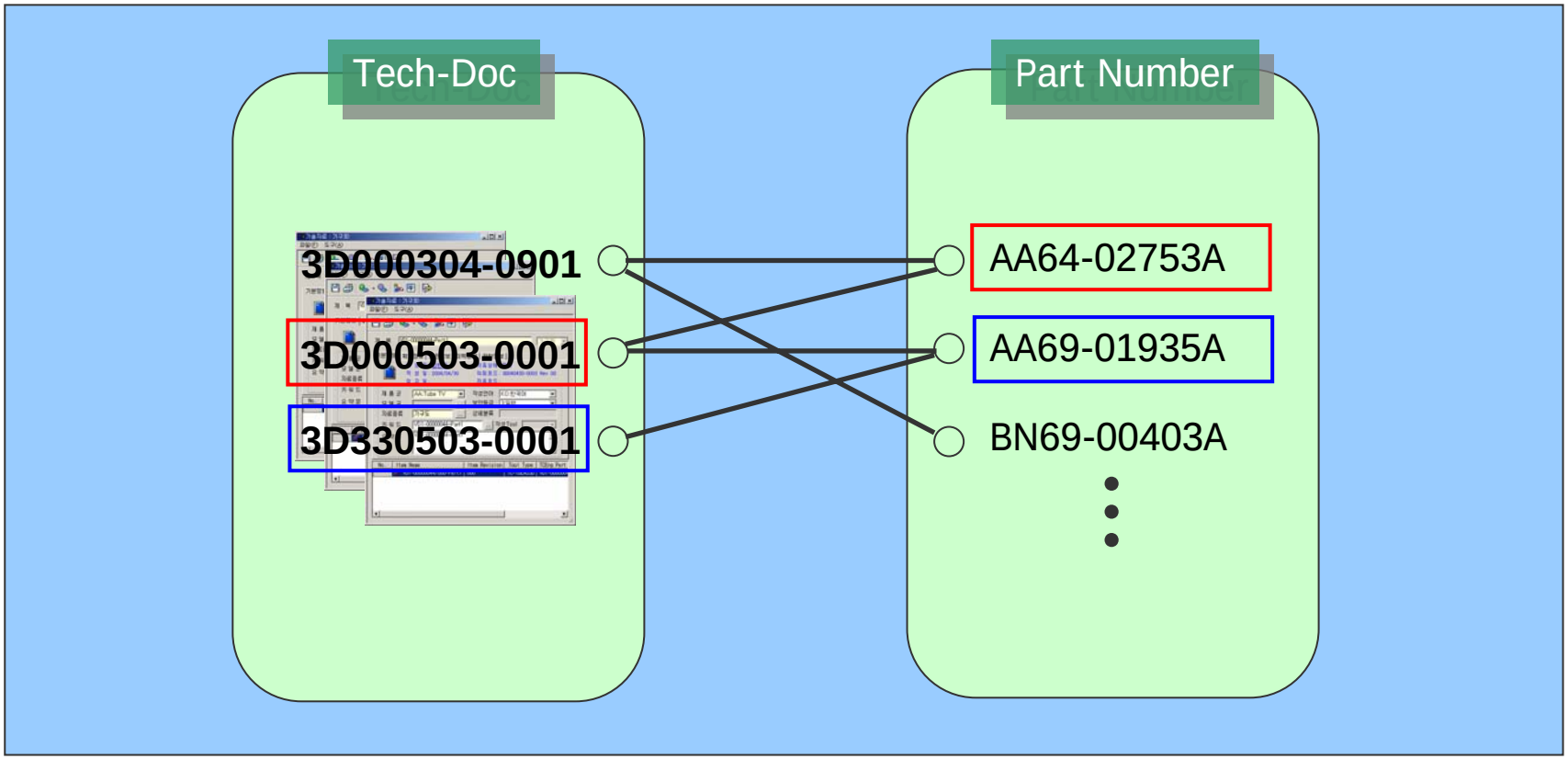
- **Case 3** Selecting one vault item & part code to be linked to related tech doc.



5. Data Migration Path

1. SPDM Data Migration

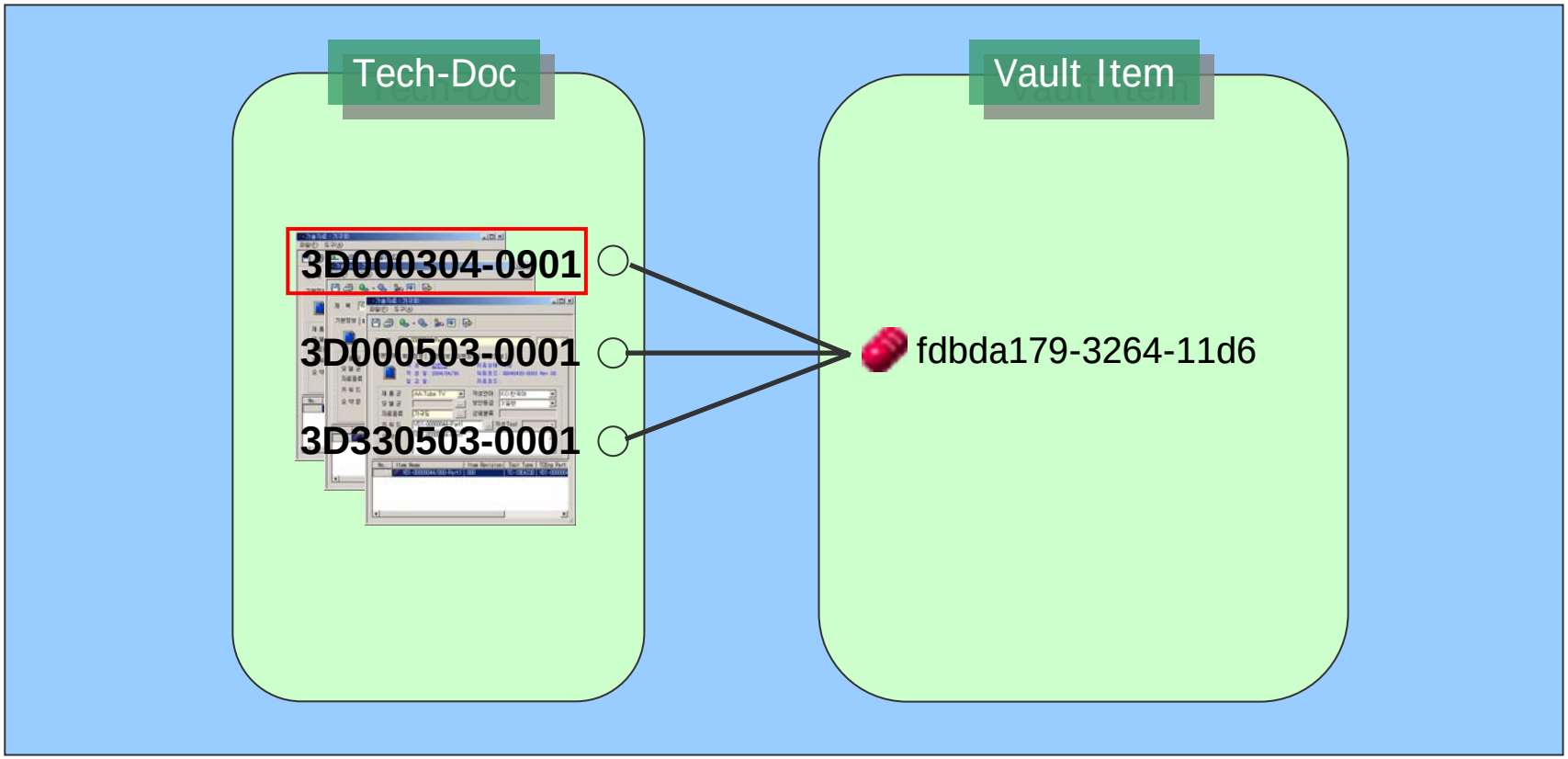
- **Case 4** Select one valid part code for each document code



5. Data Migration Path

1. SPDM Data Migration

- **Case 5** Delete other tech doc except one valid(selected) tech doc



5. Data Migration Path

2. TDM Data Migration

- TDM Data examination using dmadmin and miadmin

  - Overlapped part code
  - Wrongly granted code
  - Selection standard feature
  - Legacy data Migration (Before Ms8 data)
  - In case of TDM & SPDM 3D Data version problem

5. Data Migration Path

2. TDM Data Migration

- Scan
  - Miadmin –s –i *.imd –n namespace.nsf
- Analyze
  - Miadmin –a –n namespace.nsf –e errorfile –t 3 (Single-TDM)
  - Miadmin –a –l namespace.list –e errorfile –t 3 (multi-TDM)
  - Miadmin –a –n pcnamespace.list –x unixnamespace –e errorfile –t 3 (multi Platform)
  - Errorfile.nse

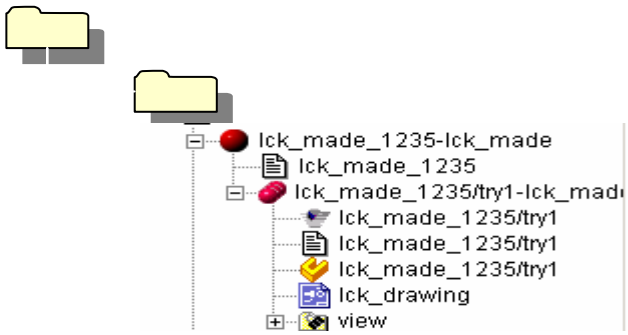
4	#Error Type	Error G	Item Name	Part Number	Item Type N	Vers	Rev	New Value	Action	Library Na
429	MULTIPLE_PART_NUMBERS	425	KEY-FUNCTION(430)	JB64-00010A	LIB PART	1		3D010925-0004	PROPAGATE	SF-430
430	MULTIPLE_PART_NUMBERS	425	KEY-FUNCTION(430)	3D010925-0004	LIB PART	2		3D010925-0004	PROPAGATE	SF-430
431	MULTIPLE_PART_NUMBERS	426	COVER TOP	JB63-00011A	LIB PART	1	2	3D010926-0003	PROPAGATE	cover-as
432	MULTIPLE_PART_NUMBERS	426	COVER TOP	3D010926-0003	LIB PART	2	3	3D010926-0003	PROPAGATE	cover-as
433	MULTIPLE_PART_NUMBERS	427	GUIDE-SUPPORT	JB61-00104A	LIB PART	1		3D010926-0005	PROPAGATE	Base_Uni
434	MULTIPLE_PART_NUMBERS	427	GUIDE-SUPPORT	3D010926-0005	LIB PART	2		3D010926-0005	PROPAGATE	Base_Uni
435	MULTIPLE_PART_NUMBERS	428	FRAME ASF	JB61-00108A	LIB PART	1		3D010926-0006	PROPAGATE	eng_unit
436	MULTIPLE_PART_NUMBERS	428	FRAME ASF	3D010926-0006	LIB PART	2	2	3D010926-0006	PROPAGATE	eng_unit
437	MULTIPLE_PART_NUMBERS	429	COVER-OPE(4000)	JB63-00013A	LIB PART	1		3D010927-0001	PROPAGATE	A4000
438	MULTIPLE_PART_NUMBERS	429	COVER-OPE(4000)	3D010927-0001	LIB PART	2		3D010927-0001	PROPAGATE	A4000
439	MISSING_PART_NUMBER	430	pcb_lcd		LIB PART	1				keylargo_
440	MISSING_PART_NUMBER	431	pcb_ope		LIB PART	1				keylargo_

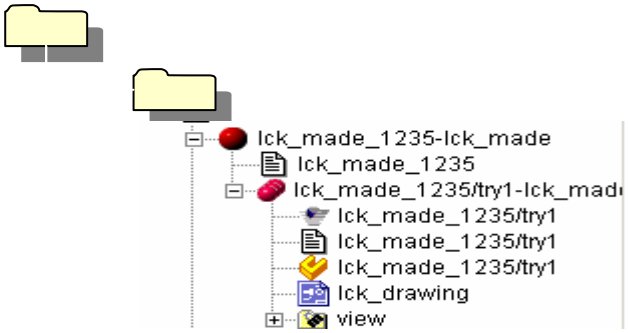
- Update
  - Modify Errorfile.nsc
  - Miadmin –u –i *.imd –c Errorfile.nsc –r Reportfile.nsr

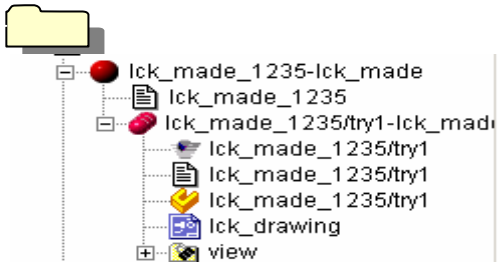
5. Data Migration Path

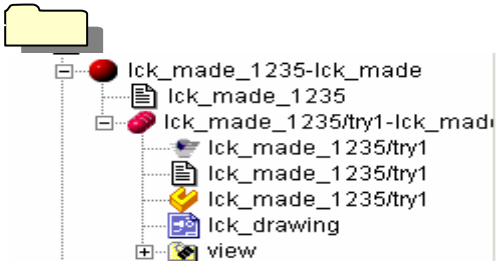
2. TDM Data Migration

- From TDM to Teamcenter
  - Implementing batch migration
  - Change project/library structure to folder structure









6. Effectiveness

- enhanced data coincidency by integration of two systems.(SPDM/TDM)

  ➔Data registered to TcEng are supposed to be registered to SDPM automatically.

- Simplified registering process (4 step to 2 Step)

- Improved usability by creating viewer data registering the CAD data

ITEM	As-Is	To-Be
System integration	-. SPDM / TDM	-. SPDM (sync with TcEng)
Registeration process	-. Complex SPDM process for data registeration ➔ 2hr max.	-. Simplified registering process (4step -> 2step) ➔ 10 Min
collaboration (3D Viewer)	-. Additional process for Viewer data creation	-. Automatically created viewer data
E-BOM writing	-. E-BOM writing manually (No relation with CAD DATA)	-. Development of E-BOM creator based on TcEng is possible

7.Current Status

- SEC now design products as assembly unit connect CAD with BOM(Bill of Materials)
- We drove BOM innovation project based on Teamcenter Engineering
- The cad Bom generator supports Full 3d assmebly design, generator basic BOM automatically by using assembly data