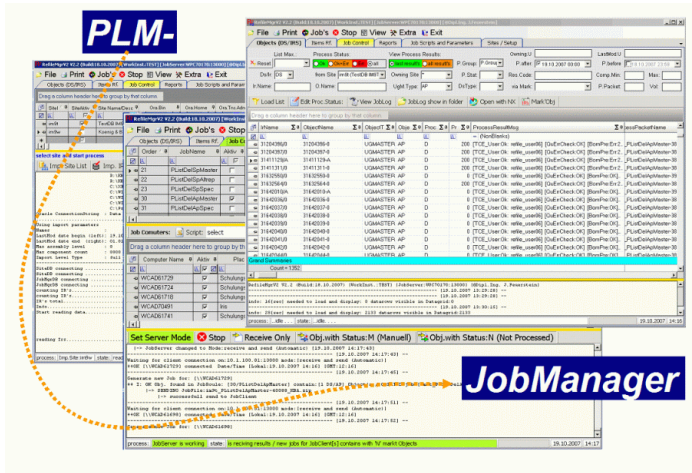




PLMJOBMANAGER

NX



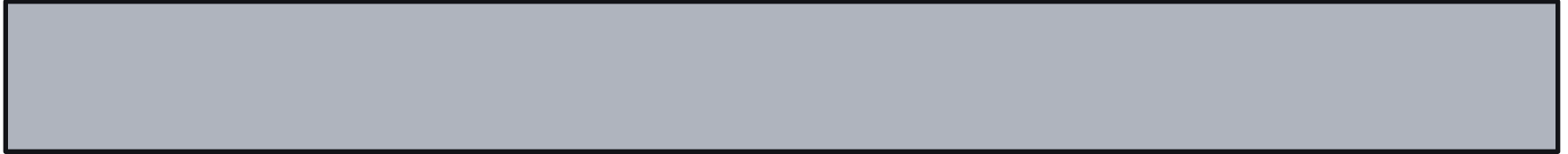
TEAMCENTER

NX-REFILE

PLMJobManager CheckBox and NxRefile

Presentation created by Josef Feuerstein 09.10.2010

Concept NX Upgrade CheckBox and Refile



- Introduction Refile Konzept and PLMJobManager

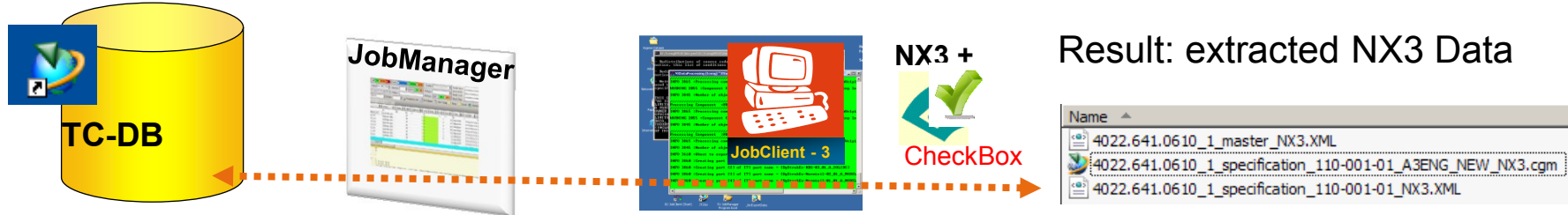
Introduction CheckBox

- How is CheckBox working?
- Involved Company's

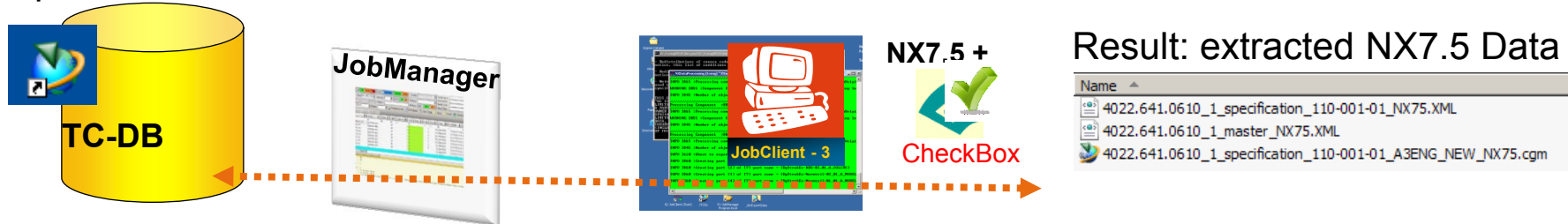
Introduction CheckBox

How is CheckBox working? → Process Overview

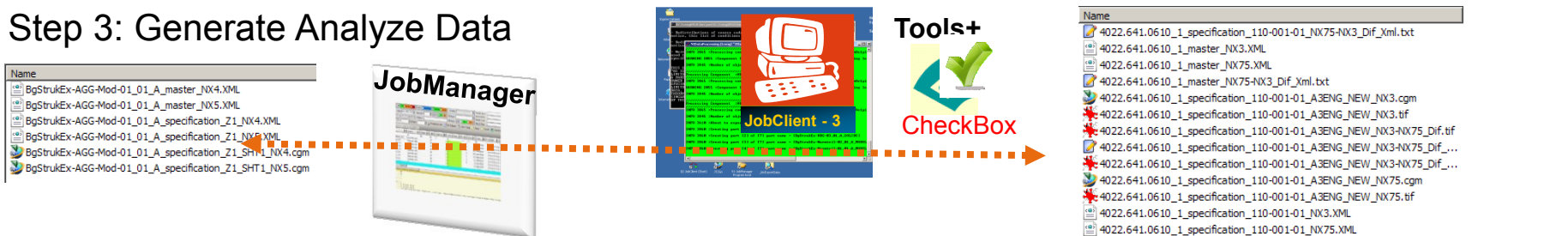
Step 1: Extraktion NX3 Data



Step 2: Extraction NX7.5 Data



Step 3: Generate Analyze Data



Introduction CheckBox

Compare Data

```

<> PLMJobManager_CheckBoxData.xmlns:xsi="http://www...
#<< ProgramData
#<< RunData
  StartLoadPartDateTime: 2010-05-22 12:07:13
  EndLoadPartDateTime: 2010-05-22 12:07:15
  StartLoadPartMemoryAllocation: 1843576
  EndLoadPartMemoryAllocation: 1842232
  << Action
    DetailOption: 2,3,4,5,6,7,8,26
    StartUpdateDateTime: 2010-05-22 12:07:15
    UpdateAllFeaturesReturn Value: -1
    StructureSyncReturn Value: -1
    UpdateAllViewsReturn Value: -1
    EndUpdateDateTime: 2010-05-22 12:07:15
    StartDateTime: 2010-05-22 12:07:15
  << NxData
    NXRelease: NX5.0
    NXVersion: 5.0
  << AssemblyDataOptions
  << CheckBoxData
    << PartHeader
    << ModelData
      << Refsets
      << Refset
        Name: Entire Part
        Volume: 1342.584642
        VolumeBodies_n: 2
        Feature3D_n: 0
        << CentreOfGravity
        << MomentOfInertia
      << Refset
      << ModelDataBase
      << Layers
    << AssemblyData
      << PartArrangements
      << Components
    << Drawings
      << Drawing
        Name: SHT1
        ViewDependentObjects_n: 0
        RetainedObjects_n: 0
        Drawing_Views_n: 4
      << Views
      << Drawing
      << Entities
        << Entity xsi:type="Entity_Type26_SubType2"
        << Entity xsi:type="Entity_Type26_SubType1"
    << RunDataPerformance
      EndDateTime: 2010-05-22 12:07:15
  
```

```

<> PLMJobManager_CheckBoxData.xmlns:xsi="http://www...
#<< ProgramData
#<< RunData
  StartLoadPartDateTime: 2010-05-26 17:58:00
  EndLoadPartDateTime: 2010-05-26 17:58:01
  StartLoadPartMemoryAllocation: 1753136
  EndLoadPartMemoryAllocation: 1751792
  << Action
    DetailOption: 26
    StartUpdateDateTime: 2010-05-26 17:58:01
    UpdateAllFeaturesReturn Value: -1
    StructureSyncReturn Value: -1
    UpdateAllViewsReturn Value: -1
    EndUpdateDateTime: 2010-05-26 17:58:01
    StartDateTime: 2010-05-26 17:58:01
  << NxData
    NXRelease: NX5.0
    NXVersion: 5.0
  << AssemblyDataOptions
  << CheckBoxData
    << PartHeader
    << ModelData
      << Refsets
      << Refset
        Name: Entire Part
        Volume: 1342.584642
        VolumeBodies_n: 2
        Feature3D_n: 0
        << CentreOfGravity
        << MomentOfInertia
      << Refset
      << ModelDataBase
      << Layers
    << AssemblyData
      << PartArrangements
      << Components
    << Drawings
      << Drawing
        Name: SHT1
        ViewDependentObjects_n: 0
        RetainedObjects_n: 0
        Drawing_Views_n: 4
      << Views
      << Drawing
      << Entities
        << Entity xsi:type="Entity_Type26_SubType2"
        << Entity xsi:type="Entity_Type26_SubType1"
    << RunDataPerformance
      EndDateTime: 2010-05-26 17:58:01
  
```

Compare → having Diff's?

YES

NO

Create extended Data:

- DifReport.txt
- Dif.tif
- Merge.tif
- MergeCgm.prt

Result Is OK

Result is an Error:
In this case it is
required to Check
what is the reason for
this differences

Introduction CheckBox

Details off XML Data

Job Data:

```

<> ProgramData
  ProgramName: NxCheckBox
  ProgramRelease: V1.1.1.18
  BuildDate: (May 20 2010)
  CustomLicense: unknown
<> RunData
  StartLoadPartDateTime: 2010-05-26 17:58.00
  EndLoadPartDateTime: 2010-05-26 17:58.01
  StartLoadPartMemoryAllocation: 1753136
  EndLoadPartMemoryAllocation: 1751792
  <> Action
  DetailOption: 26
  StartUpdateDateTime: 2010-05-26 17:58.01
  UpdateAllFeaturesReturnValue: -1
  StructureSyncReturnValue: -1
  UpdateAllViewsReturnValue: -1
  EndUpdateDateTime: 2010-05-26 17:58.01
  StartDateTime: 2010-05-26 17:58.01
<> NxData
  NXRelease: NX V5.0
  NXVersion: 105.0
  <> AssemblyLoadOptions
    load_options: 1 [UF_ASSEM_load_from_search_dirs]
    parts_list: 0
    update: 1 [UF_ASSEM_update_report]
  
```

ModelData:

```

<> ModelData
  <> Refsets
    <> Refset
      Name: Entire Part
      Volume: 1342.584642
      VolumeBodies_n: 2
      Feature3D_n: 0
      <> CentreOfGravity
        X: 10.078155
        Y: 7.560351
        Z: 1.238954
      <> MomentOfInertia
        X: 815346.315993
        Y: 1455367.113393
        Z: 2220782.513485
    <> Refset
  <> ModelDataBase
    <> Features
      TotalFeatures_n: 0
      AliveFeatures_n: 0
      SuppressedFeatures_n: 0
      CondemnedFeatures_n: 0
      DeletedFeatures_n: 0
      TemporaryFeatures_n: 0
    <> Bodies
  
```

Component:

```

<> Components
  <> Component
    <> Component
      File: %UGMGR=V3.2 PH=QnBdUZwmVe1p
      Handle: RM%UL=V1.0 PH=wTDdUZwmVe
      SuppressState: 0
      <> SuppressByExpression
      <> ReferenceComponent
      RefsetCurr: EINFACH
      InstanceName: BGSTRUKEX-KBG-01_01
      ComponentLevel: 2
      Callout: 10
      MemberCount: 59
      <> ComponentArrangement
        UsedArrangement: Arrangement 1
      <> Mating
      <> Matrix
        X1: 1.000000
        Y1: 0.000000
        Z1: 0.000000
        X2: 0.000000
        Y2: 1.000000
        Z2: 0.000000
        X3: 0.000000
        Y3: 0.000000
        Z3: 1.000000
        originX: 360.000000
        originY: -420.000000
        originZ: 0.000000
    
```

Introduction CheckBox

Details of Difference Report

DifReport.txt

```

0      10      20      30      40      50      60      70      80      90      100     110     120     130     140     150
1 CheckBox Report:
2 JM CheckBoxVer...:V2.696 (Build:26.10.2010)
3 Date.....:26.10.10 22:37:10
4
5 CheckBox.Data 1:[NX V3.0[103.0]] |CheckBox.Data 2[NX V7.5[107.0]]
6 -----|-----
7 CliName.:[@DB/4022.625.4014/2/specification/110-001-01] |CliName.:[@DB/4022.625.4014/2/specification/110-001-01]
8 PartDesc: |PartDesc:
9 PartHis.:~ |PartHis.:25 19 Oct 10 00:55 NT Intel jfeuerst NX 7.5.1.5 - External U~
10 PartHis.:24 18 Oct 10 22:29 NT Intel jfeuerst NX 3.0.3.2 - External ~|PartHis.:24 29 Jul 10 11:47 NT Intel JFeuerst NX 7.5.0.32 (NX Manager~
11 PartHis.:23 10 May 10 17:00 NT Intel gmiddel NX 3.0.3.2<!

```

Introduction CheckBox

Compare Drawings

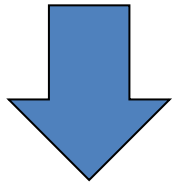
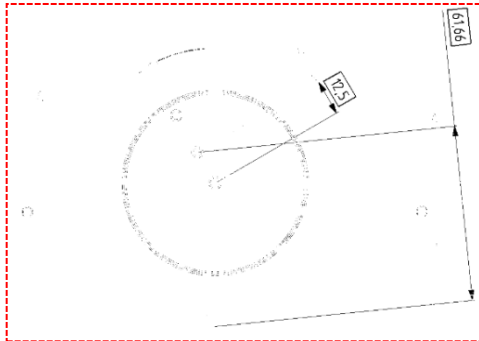
CheckBox extracts CGM files from specifications. These CGM files are used to create output data.

NX3.cgm

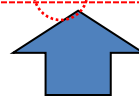
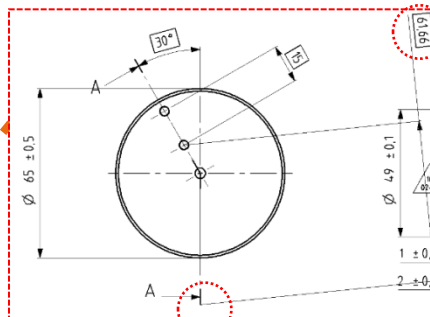
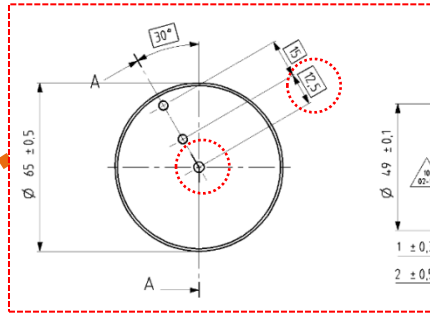


This method was developed by Thomas Körner from B/S/H.

Dif.tif

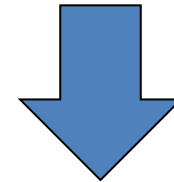
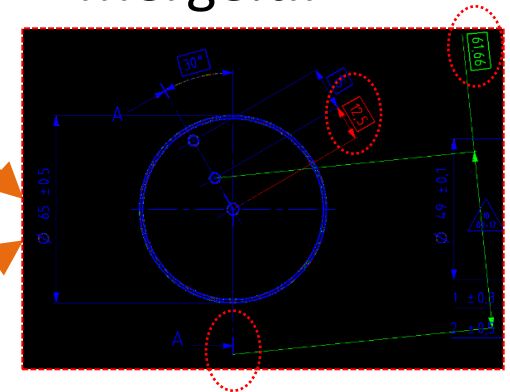


From this file we extract the **PPM** value which shows if drawings have differences.



NX7.5.cgm

Merge.tif



Merge.tif can be used to see differences between drawings.

Introduction CheckBox

Analyze Data

All analyzed Data from XML and from Drawing compare will be combined to one Result:

- PH = Part Header (from XML) 1
- MD = Model Data (from XML) 2
- AS = Assembly Data (from XML) 3
- DR = Drawing Data (from XML) 4
- Pef = Performance Data (from XML) 5
- PPM= Dif.tif (from Drawing compare) 6

- If the Result Value is = 0 no differences between the part's are found.

Example:

[PH:0 Msg:OK] [MD:0 Msg:OK] [AS:0 Msg:OK] [DR:0 Msg:OK] [Pef:0 Msg:OK] [PPM:0 Msg:OK]

1

2

3

4

5

6

- If the Result Value is > 0 there are differences between the Parts → the Parts must be checked !

Example:

[PH:0 Msg:OK] [MD:18528 Msg:Err:Lay;Refs;AS.Comp;DR.View] [AS:0 Msg:OK] [DR:0 Msg:OK] [Pef:0 Msg:OK] [PPM:3078]

1

2

3

4

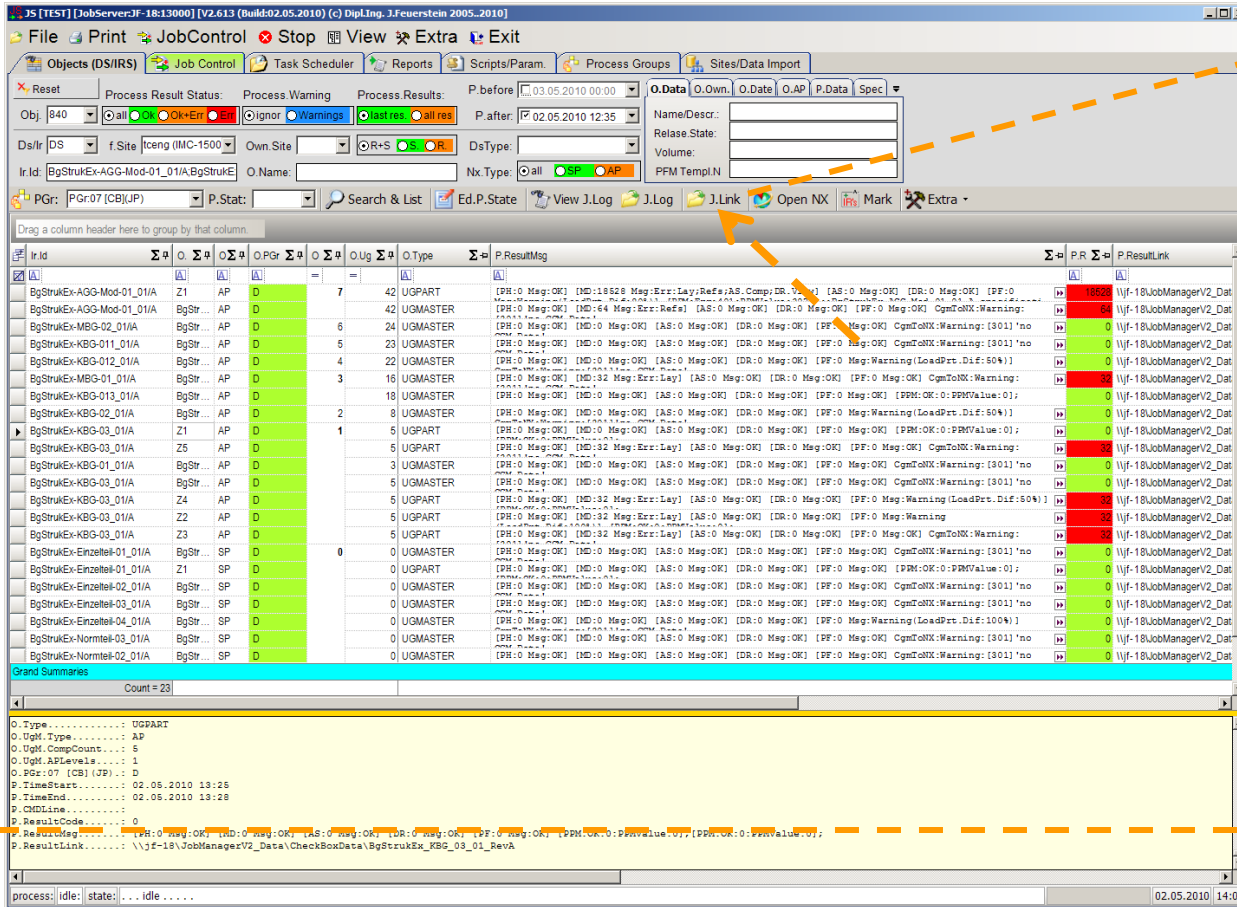
5

6

Introduction CheckBox

How is CheckBox working? → Analyze Data

All Result's are view via PLMJobManager



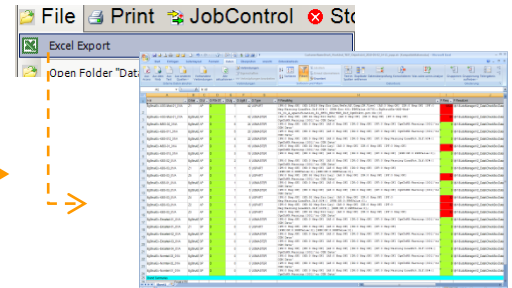
The screenshot shows the PLMJobManager application window. The main area displays a table with columns for Job ID, Status, and Results. The table contains multiple rows of data for various jobs. The interface includes a menu bar, a toolbar, and a status bar.

➤ Via J.Link you have a Quick access to all Data

Adresse: \\jf-18\JobManagerV2_Data\CheckBoxData\BgStrukEx_AGG_Mod_01_01_RevA

Name	Größe
BgStrukEx-AGG-Mod-01_01_A_master_NX4.XML	81 KB
BgStrukEx-AGG-Mod-01_01_A_master_NX5_Dif Xml.txt	1 KB
BgStrukEx-AGG-Mod-01_01_A_master_NX5.XML	81 KB
BgStrukEx-AGG-Mod-01_01_A_specification_21_NX4.XML	59 KB
BgStrukEx-AGG-Mod-01_01_A_specification_21_NX4_Dif Xml.txt	26 KB
BgStrukEx-AGG-Mod-01_01_A_specification_21_SHT1_NX4.tif	60 KB
BgStrukEx-AGG-Mod-01_01_A_specification_21_SHT1_NX4.tif	16 KB
BgStrukEx-AGG-Mod-01_01_A_specification_21_SHT1_NX4.tif	10 KB
BgStrukEx-AGG-Mod-01_01_A_specification_21_SHT1_NX4.tif	13 KB
BgStrukEx-AGG-Mod-01_01_A_specification_21_SHT1_NX4.tif	704 KB
BgStrukEx-AGG-Mod-01_01_A_specification_21_SHT1_NX4.tif	2 KB
BgStrukEx-AGG-Mod-01_01_A_specification_21_SHT1_NX5.tif	1.327 KB
BgStrukEx-AGG-Mod-01_01_A_specification_21_SHT1_NX5.tif	134 KB
BgStrukEx-AGG-Mod-01_01_A_specification_21_SHT1_NX5.tif	20 KB

You export the Data to Excel analyze the Result for own Report's



The screenshot shows the 'Excel Export' dialog box in the PLMJobManager application. The dialog has a 'File' menu, a 'Print' button, and a 'JobControl' button. The 'Excel Export' button is highlighted. Below the buttons, there is a section for 'Open Folder' with a file explorer view showing the contents of the folder.

Introduction CheckBox

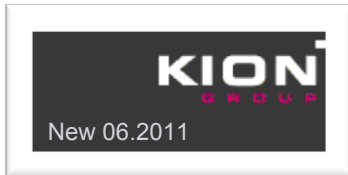
Involved Company's

The NxCheckBox Software is developed by Mr, Bernd Schieber (SISW Stuttgart).
 Software specification, project coordination and PLMJobManager integration was done by Josef Feuerstein

The Companys BSH,KBA,MTU,Renk,ASML,KION, paid for the development of this Tool. Each of them did spend 3 Day's off Services to SISW.

At the last Meeting (on 28.04.2010) the participants' agreed that it is possible for another company to join this Project. To take part in this Project the new company has also to spend 3 Day's of Services on this project.

Info: The PLMJobManager Software is a separated Software and is not Part of the NXCheckBox Tool.



Mr. Peter Angenendt



Mr. Karl Bertram
 Mr. Thomas Körner



Mr. Bernd Schieber



Mr. Josef Feuerstein



Mr. Reinhard Reim
 Mr. Michael Conrad



Mr. Ulrich Lange
 Mr. Helmut Wirth



Mr. Dr. Rainer Hofmann



Mr, Maarten Romers

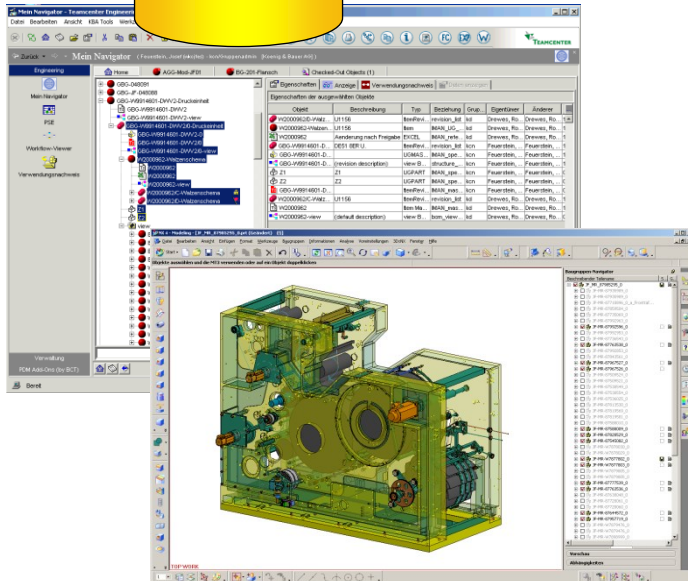
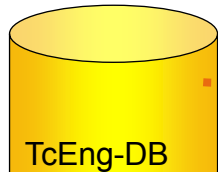
Concept for ASML Health check

- Introduction CheckBox



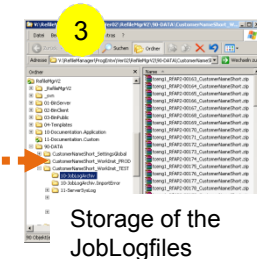
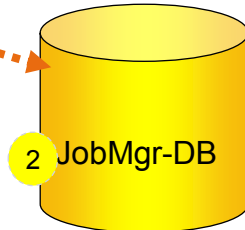
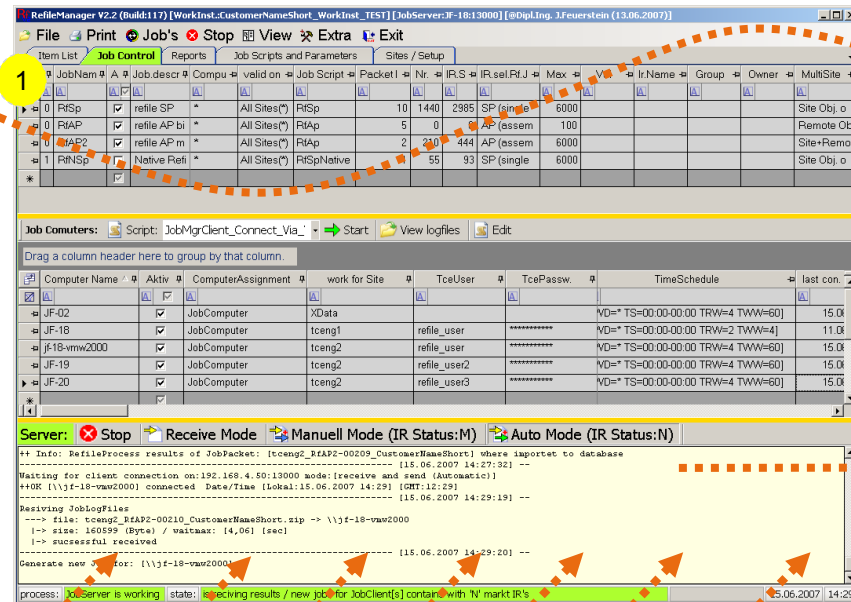
Chart Overview “Basic functionality”

Teamcenter and NX environment



PLMJobServer NX-Refile environment

All the jobs are administered by the JobServer. Furthermore, the JobServer controls the associated database (DB) (2) and manages the results of the jobs. The related log files are stored on a file server (3).



The clients (4) connect to the JobServer (1). Then jobs, which are created by the JobManager, are given to the clients (4). After one client has finished „his“ job, the results are transferred to the JobManager. After the results are analyzed by the JobManager a new job will be created and assigned to the same client.



Description “Basic functionality”

For the administration of the jobs by the PLMJobManager NXRefile, the data of TcEng will be imported into the PLMJobManager database. After the import the data will be analyzed. Each job and the related script and parameters are well defined and stored in the main location. Furthermore the jobs are distributed to the job clients. Both TcEng single and multisite will be supported. All the results of the jobs are stored on a central file server, which is a help if analysis is needed.

Advantages of the PLMJobManager NXRefile:

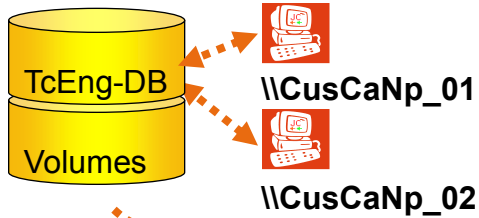
- ✓ Both the TcEng single and multisite is supported.
- ✓ Processing of „native“ NX data is also possible (e.g. PLMJobManager NXRefile).
- ✓ Central control of all PLMJobManager NXRefile processes in multisite environment
- ✓ All Job protocol files are automatically store
- ✓ The PLMJobManager NXRefile jobs are created in particular order
 - Single Parts
 - Assembly Parts in „Button up“ order
- ✓ Analysis the PLMJobManager NXRefile protocol files for PLMJobManager results status error messages

Chart Overview “Mutisite environment”

Sites

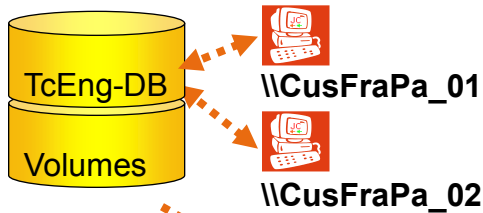
Site: USA

Location: Newport, Carlifornia



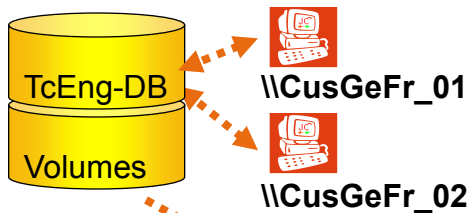
Site: Europe1

Location: Paris, France



Site: Europe2

Location: Frankfurt, Germany



JobServer and NXRefile environment

The JobServer will be located at one of your locations. From all sites the IR Lists for NX-Refile will be imported to the JobServer Database

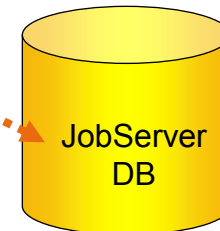
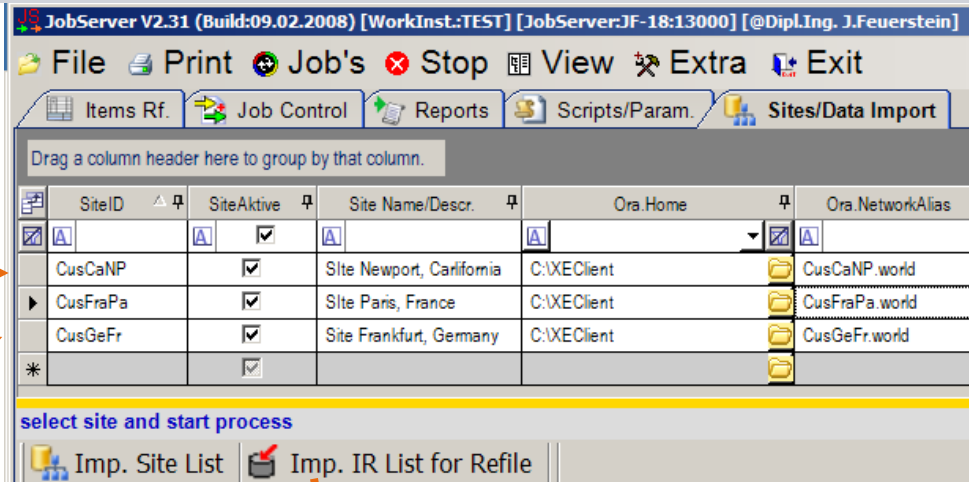
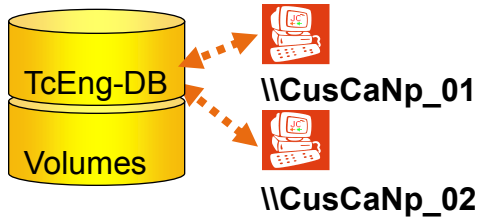
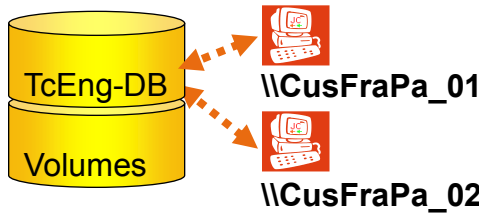
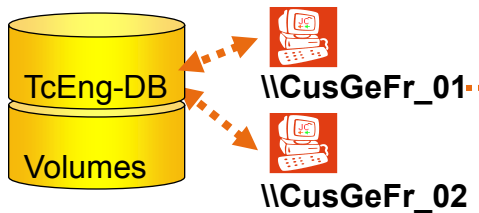


Chart Overview “Mutisite environment”

Sites

Site: USA
Location: Newport, Carlifornia

Site: Europe1
Location: Paris, France

Site: Europe2
Location: Frankfurt, Germany


JobServer and NXRefile environment

The PLMJobManager NXRefile Clients sends an Job request on the JobServer. The JobServer calculates a new Job for the client an send an new Job-Packet to the client.

JobServer V2.31 (Build:09.02.2008) [WorkInst:TEST] [JobServer:JF-18:13000] [Dipl.Ing. J.Feuerstein]

File Print Job's Stop View Extra Exit

Items Rf Job Control Reports Scripts/Param. Sites/Data Import

Or	JobName	Job.descript.	Aktiv	valid on site	Job Script/Para	MultiSite Objects	Packet lRs si
01	RfSpOwningParts	Refile Single Parts from Owning Site	☒	All Sites(*)	RfSp	S_Obj	
02	RfSpRemoteParts	Refile Single Parts from Remote Site	☒	All Sites(*)	RfSp	Remote Obj. only	
03	RfApOwningParts	Refile Assembly Parts from Owning Site	☒	All Sites(*)	RfAp	S_Obj	
04	RfApRemoteParts	Refile Assembly Parts from Remote Site	☒	All Sites(*)	RfAp	Remote Obj. only	

Job Computers: Script: select Start View logfiles Edit

Drag a column header here to group by that column.

Computer Na	Aktiv	work for Site	ComputerAssign	Schedule	Job.Info
CusCaNp_01	☒	CusCaNP	JobClient	[TRW=4] [TWW=15] [WD=* TS=17:30-05:30]	aktive
CusCaNp_02	☒	CusCaNP	JobClient	[TRW=4] [TWW=15] [WD=* TS=17:30-05:30]	aktive
CusFraPa_01	☒	CusFraPa	JobClient	[TRW=4] [TWW=15] [WD=* TS=17:30-05:30]	aktive
CusFraPa_02	☒	CusFraPa	JobClient	[TRW=4] [TWW=15] [WD=* TS=17:30-05:30]	aktive
CusGeFr_01	☒	CusGeFr	JobClient	[TRW=4] [TWW=15] [WD=* TS=17:30-05:30]	aktive
CusGeFr_02	☒	CusGeFr	JobClient	[TRW=4] [TWW=15] [WD=* TS=17:30-05:30]	aktive

Set Server Mode Stop Receive Only Obj.with Status:M (Manuell) Obj.with Status:N (Not Pro

```

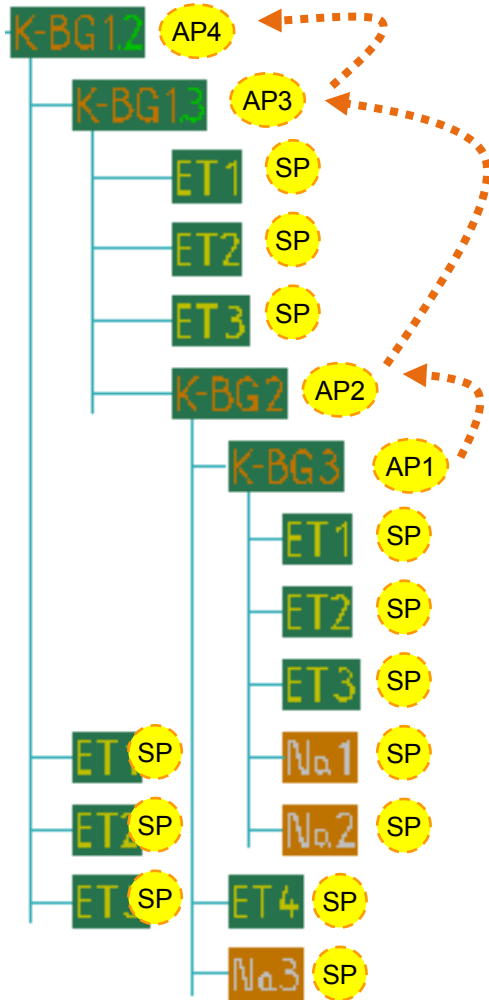
SiteId      : CusCaNP
Node Name   : CusCaNP_01 [Mem:1023Mb]
Node NX Version : v4.0.3.3
Node TCE Version : 913
RefileJob.Log : _RefileJob.LOG
Refile IR list : CusCaNP_RfSp-00006_CustomerNameShort_ObjectsList.txt
Refile comands : -keep_volume=yes -update_mod_props=no -non_masters=yes -refile_released=yes -bypass=yes

Site:      ItemNameRev:      DataSetName:      DataSetType:      ErrCode:      Process Time Start:
CusCaNP    000128/A          000128/A          master            0              18.02.2008 14:12:43

process: ..idle... state: ..idle...
  
```

How to Refile?

BottomUp Prinzip:



The Refile of the Nx Data should be done via **Bottom Up Principe**.

The advance is that the refile of Assembly is systematic processed from **Bottom Up**. It reduces the time of refile and improves the final Data quality

Therefore the parts are processed in this order:

- SP all single Part's
 - AP Assemblys started with the lowest mound of levels and components.
- | | |
|------------------|--------------|
| AP1 has 1 level | 5 Component |
| AP2 has 2 levels | 8 Component |
| AP3 has 3 levels | 12 Component |
| AP4 has 4 levels | 16 Component |

Overview strategy: Refile – CheckBox

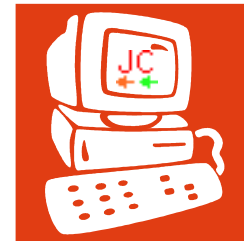
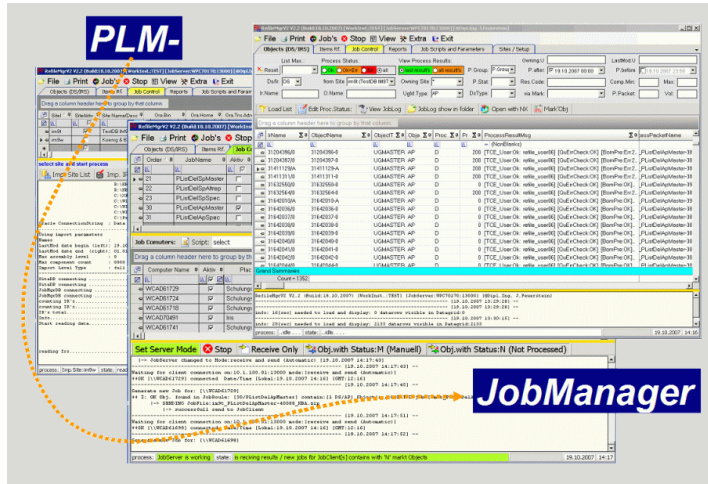
Refile in Test Database:

- Step 1: Refile single parts (with save)
- Step 2: Analyze results
- Step 3: Refile assembly parts with -record_altrep_notes=yes (required to prevent altrep issue PR1799862 PR1799866)
- Step 4: Analyze results
- Step 5: Refile assembly parts base (with save)
- Step 6: Analyze results
- Step 7: Refile assembly parts with -convert_mcs=ConvertMCS.log
- Step 8: Analyze Result's → check convert_mcs Results

Running CheckBox:

- Step 1: Extract NX3 Data from current Productive System Tce9.13 and NX3
- Step 2: Extract NX7.5 Data from Test Database with Tc8.1 and NX7.5
- Step 3: Analyze Result's open calls if required

System requirements



JobServer:

- WinXP or Win7 Workstation
- W2003 or W2008 Server



JobClient:

- WinXP or Win7 Workstation
- W2003 or W2008 Server
- with Full Nx- und TC- installation