

# Documentation: TC Data Quality Check

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Creation Date : 18.02.2016  
Last Update : 11.07.2018 / J.Fes  
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# Content

## Overview TC - DataCheck

MSC: Identify Data to Sync

MSC: Multi-Site Consistent Check

*MSC:Check Rules*

MSC: Completeness Analyse

MSC: Integr. in PLMJobManager

DQC: TC data quality check for NX related data

Glossar Keys: **MSC**: Tc - Multisite Check // **DQC**: Tc - Data Quality Check

## Methods for Analyse MultiSite Data Migration and Consistent Check

PLMJobManager provides 3 Methods for Multisite-Data checks and MultiSite Migrations

### 1 List Objects that need to be transfer or updated from 'Source Site' to 'Target Site'

f.Site: S1 (Site to Migrate) ▾ Own.Site: \* (all Sites) ▾  S+R  SO  RO  O.Last.Expo.Date<O.Last.Mod.Date or not Exported ✓

This Method can be used to get a list of all Objects that need to be transfer or Updated from 'Source Site' into 'Target Site'

### 2 MultiSite Consistent Check (MCC)

This Method can be used to check the Data Consistent between TC Sites.  
It analyses the existing Multisite - Data via Check Rules.

### 3 MultiSite Completeness Analyse (MCA)

This analyse checks if transferred Objects from 'Source Site' to 'Target Site' is complete transferred.

It is used to **review** the current 'TC-MultiSite Data-Quality' between Sites

It is used to **check the result** of DataShare process during MultiSite migration phase.

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# MultiSite Consistent Check

List of Check Rules

Status	Check	Naming in JobMgr
1.0	ItemID/ItemPuid Owings Site consistency	ItemId/ItemPuid incon.
1.2	Item Type inconsistency	Item Type incon.
2.0	Owning Site has Export Record inconsistency	Owning Site has Export Record incon.
2.1	if no item exists with same ItemID and same ItemPUID on every site	ItemID/ItemPUID not consist on all Sites
3.0	if all Items with same ItemID and same ItemPUID exists on each exportedTo Site	exportedTo and Owings Sites are inconsistent
4.0	if all itemRevIDs from Owning Site Item exists on each exported site with the same puid and the same itemRevID	itemRevIDs not consist on all Sites
4.1	ItemRev Release Status consistent	ItemRev Release Status are inconsistent

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## Multi-Site Consistent Check: Check Rules

### Check (1) Item Owings Site consistent

- Checks if the processed Item has one owning site object
- And if there are no other items with the same ItemID and an other Item-PUID
- And if there are no other items with an other ItemID and the same Item-PUID

**Example for [TRUE]:** → goto Check (2)

ItemId	Puid	fSiteID	oSiteId	exportToSiteIds
01	P01	VDH	VDH	SAN;WLT
01	P01	SAN	VDH	
01	P01	WLT	VDH	

SiteObject Item does not exist

**Example for [FALSE]:** → Mark Item as OutOfSync + local created in ACE

ItemId	Puid	fSiteID	oSiteId	exportToSiteIds
01	P01	VDH	VDH	SAN;WLT
01	P01	SAN	VDH	
01	P01	WLT	VDH	
01	P02	ACE	ACE	

Item with same ItemID and other PUID exists

**Example for [FALSE]:** → Mark Item as OutOfSync because Object is missing in Owning Site

ItemId	Puid	fSiteID	oSiteId	exportToSiteIds
01	P01	SAN	VDH	
01	P01	WLT	VDH	
01	Ü01	ACE	VDH	

**Example for [FALSE]:** → Mark Item as OutOfSync because Object is renamed (diff ItemID) in Owning Site

ItemId	Puid	fSiteID	oSiteId	exportToSiteIds
02	P01	VDH	VDH	SAN;WLT;ACE
01	P01	SAN	VDH	
01	P01	WLT	VDH	
01	P01	ACE	VDH	

## Multi-Site Consistent Check: Check Rules

### Check (1.2) ItemType consistens

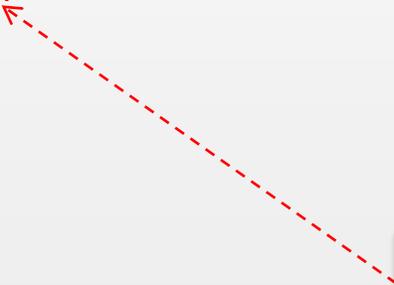
→ Checks if all Items on each site have the same ItemType

Example for [TRUE]: → goto Check (2)

ItemId	Puid	fSiteID	oSiteId	ItemType
01	01	VDH	VDH	Item
01	01	SAN	VDH	Item
01	01	WLT	VDH	Item

Example for [FALSE]: → Mark Item as OutOfSync 1.2

ItemId	Puid	fSiteID	oSiteId	ItemType
01	01	VDH	VDH	Item
01	01	SAN	VDH	Item
01	01	WLT	VDH	CATIA



Item Types are different

## Multi-Site Consistent Check: Check Rules

### Check (2) if Owning Site has Export Record

**Example for [YES]:** → goto Check (3)

ItemId	PuiD	fSiteID	oSiteId	exportToSiteIds
01	01	VDH	VDH	SAN:WLT
01	01	SAN	VDH	
01	01	WLT	VDH	

**Example for [NO]:** → goto Check (2.1)

ItemId	PuiD	fSiteID	oSiteId	exportToSiteIds
01	01	VDH	VDH	
01	01	SAN	VDH	
01	01	WLT	VDH	
01	01	ACE	VDH	



SiteObject has no  
ExportRecord

## Multi-Site Consistent Check: Check Rules

check (2.1) if no item exists with same ItemID and same ItemPUIID on every site  
→ this check only appears when check(2) was [NO]

Example for [TRUE]: → Mark Item as candidate

ItemId	Puid	fSiteID	oSiteId	exportToSiteIds
01	01	VDH	VDH	

## Multi-Site Consistent Check: Check Rules

check (3) if all Items with same ItemID and same ItemPUID exists on each exportedTo Site

Example for [TRUE]: → goto Check (4)

ItemId	Puid	fSiteID	oSiteId	exportToSiteIds
01	01	WLT	WLT	VHD
01	01	VDH	WLT	ACE;SAN → is HubSite
01	01	ACE	VDH	
01	01	SAN	VDH	

Example for [FALSE]: → Mark Item as OutOfSync

ItemId	Puid	fSiteID	oSiteId	exportToSiteIds
01	01	WLT	WLT	VHD
01	01	VDH	WLT	ACE;SAN
01	01	SAN	VDH	

Item from Site ACE  
is missing

## Multi-Site Consistent Check: Check Rules

Check (4) if all itemRevs from Owning Site Item exists on each exported site with the same PUID and the same itemRevID

Example for [TRUE]: → goto Check 4.1

ItemRevId	ItemRevPuid	fSiteID	oSiteId	exportToSiteIds
01/01	012	VDH	VDH	WLT
01/02	023	VDH	VDH	WLT
01/01	012	WLT	VDH	
01/02	023	WLT	VDH	

Example for [FALSE]: → Mark Item as OutOfSync

ItemRevId	ItemRevPuid	fSiteID	oSiteId	exportToSiteIds
01/01	012	WLT	WLT	VDH
01/02	023	WLT	WLT	VDH
01/01	012	VDH	WLT	SAN
01/02	023	VDH	WLT	SAN
01/01	012	SAN	VDH	

ItemRev 01/02 is missing in SAN

## Multi-Site Consistent Check: Check Rules

check (4.1) if all itemRevs from each site have the same Release Status

Example for [TRUE]: → Mark Item as candidate

ItemRevId	ItemRevPuiD	fSiteID	oSiteId	release state
01/01	012	VDH	VDH	released
01/02	023	VDH	VDH	
01/01	012	WLT	VDH	released
01/02	023	WLT	VDH	

Example for [FALSE]: → Mark Item as OutOfSync

ItemRevId	ItemRevPuiD	fSiteID	oSiteId	release state
01/01	012	WLT	WLT	released
01/02	023	WLT	WLT	
01/01	012	VDH	WLT	released2
01/02	023	VDH	WLT	

Release State is different

## Consistent Check: Check Rules

### Results:

MSC.00.OK : Objects are in sync  
MSC.10.ERR : More then one OwningSite Object exist (Duplicated Items)  
MSC.11.ERR : No OwningSite Object exist  
MSC.12.ERR : Item with same ItemId and different puid or Item with same puid and different ItemId exist  
MSC.13.ERR : Items have different Item types  
MSC.14.ERR : OwningSite-Item has no export record, but Items with same ItemId exist  
MSC.15.ERR : There is not only exactly one item for each export record  
MSC.16.ERR : The release statuses of items are different  
MSC.21.ERR : IRS on remote site are different then on OwningSite  
MSC.22.ERR : Release status of item revisions are differnet  
MSC.31.ERR : Datasets on remote site are different then on OwningSite  
MSC.32.ERR : Release status of datasets are different

Attention: Site Groups have to be defined in Sites/Data Import -> Admin -> 2 - Edit 'MultiSite-Groups' settings

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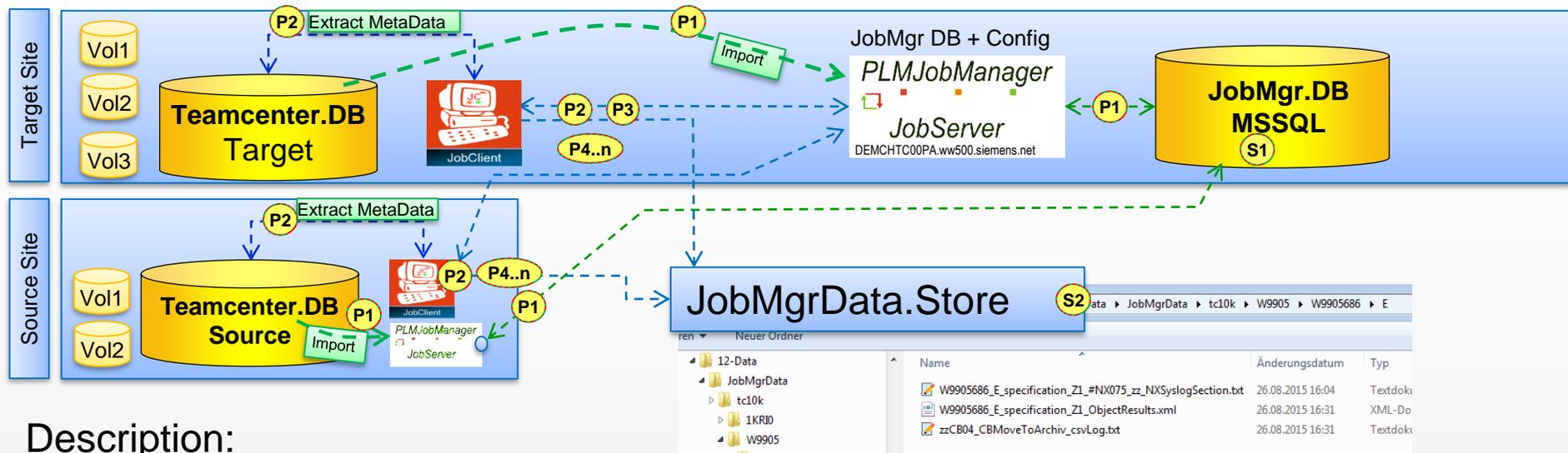
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## Completeness Analyse Base Concept and System Sketch



Description:

### TC MetaData import to JobMgr.DB

- Import Data (P1) into JobMgr.DB (S1) During Import a Base Analyses will be done.

### Process Completeness Analyse:

- Extract Data (P2) from TC.DB and save them into **TCMetaData.xml** files (S2)  
Action will be done “based on ItemId’s” via JobClients located on the Sites
- Analyse Data (P3) based on JobMgr.DB Data and **TCMetaData.xml** files (S2)  
Results will be evaluated by the defined ‘Check-Rules’ and send to JobManager
- Depending on Issues Run CleanUp Actions (P4...Pn)  
and Run Steps **P1 → P2 → P3** again

Legend:  
P1..3 Process Step  
S1..2 Store

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## PLMJobManager Integrations

### New Functions

- Integrate Multi Site Check in JobManager GUI (1)  
→ is working against a Process Group MC (2)
- Integrate Multi Site Check in TaskMgr to Check automatically after update Data in JM.DB
- Define JobRules to Run Repair processes to solve MC issues
- Get easy and fast way to Update JM.DB Data on Remote Sites
- Easy way to run a free custom SQL Script in JM.DB

Ir.Id	O.Name	O.Type	O.Stat	O.LastModDate	O.LastM	O.SP/AP/	O.P.Mc [TC.MC]	O.AP	O.AP.	O.P.01 [Generic]
65010000537/000	650100 0537_000	UGMASTER	NF	14.06.2007 13:16	henga	SP	X.OutOfSync1.0 (ItemId/It...	0	0	D.OK (Done)
65010000590/001	650100 0590_001_...	UGPART		29.06.2007 13:33	goesm	SP	X.OutOfSync1.0 (ItemId/It...			D.OK (Done)
65010000999/000	650100 0999_000	UGMASTER	NF	14.06.2007 13:16	henga	SP	X.OutOfSync1.0 (ItemId/It...			D.OK (Done)
65010001189/000	650100 1189_000_...	UGPART		13.06.2007 05:57	henga	SP	N (not.Proc.)			D.OK (Done)
65010000307/000	650100 0307_000	UGMASTER		05.07.2007 15:25	freiv	SP	N (not.Proc.)			D.OK (Done)
65010001055/000	650100 1055_000_...	UGPART		04.05.2007 07:26	goesm	SP	N (not.Proc.)			D.OK (Done)

**02 - ProcessGroup settings extendet. Mc+Rf**

- ProcessGroupMc TC.MC (active)
  - Process Group: Name **TC.MC**
  - Process Group: Description **TC-MultiSite Q-Check and Migration**
  - Process Group: Activ **True**
  - Process Group: Settings Group | **TC.MC**

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# TC Data Quality Check Details

## Categorization of the issues (1of3)

Data Quality Settings Manager (v.0.1.1.0)

Save Load Exit

TC Data Quality Settings File: TCDDataQualitySettings.xml

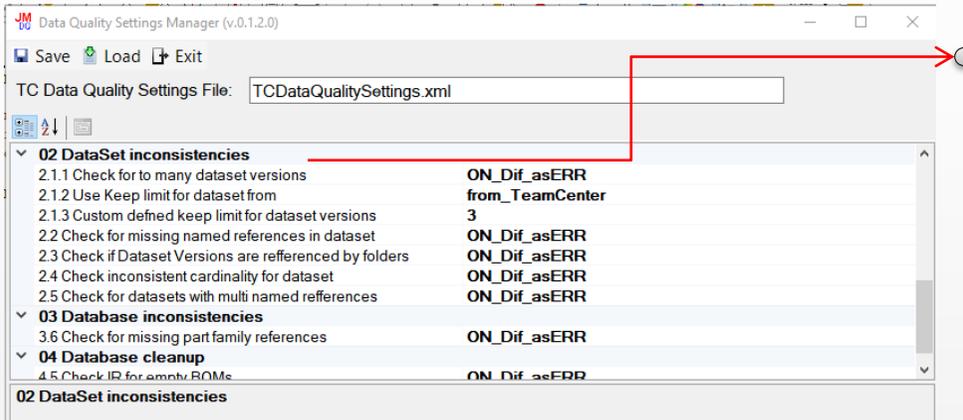
- 01 Data inconsistencies
  - 1.1 Check release status list for rev **True**
  - 1.2.1 Check more that one released revision **True**
  - 1.2.2 status for released revisions **Released**
  - 1.3 Check chronological creation date of revisions **True**
  - 1.4.1 Check chronological creation date of revisions **True**
  - 1.4.2 status for canceled revisions
  - 1.5.1 Check for specific owners **True**
  - 1.5.2 specific owners **String[]-Array**
  - 1.6.1 Check for specific name rules for item **True**
  - 1.6.2 Specific naming rules for item **[defined patterns:0][matching type:all]**
  - 1.6.3 Check for specific name rules for revisions **True**
  - 1.6.4 Specific naming rules for revisions **[defined patterns:0][matching type:all]**
  - 1.6.5 Check for specific name rules for datasets **True**
  - 1.6.6 Specific naming rules for revisions **[defined patterns:0][matching type:all]**
- 02 DataSet inconsistencies
  - 2.1.1 Check for to many dataset versions **True**
  - 2.1.2 Keep limit for dataset versions **3**
  - 2.2 Check for missing named references in dataset **True**
  - 2.4 Check inconsistent cardinality for dataset **True**
  - 2.5 Check for datasets with multi named references **True**
- 04 Database cleanup
  - 4.1 Check IR for empty BOMs **True**

**4.1 Check IR for empty BOMs**  
checks if an item revision has an empty bom  
this check is enabled by default

Pos	Description:	Note	ResultCode
1	<b>Data inconsistencies</b>		
1.1	Chk. Release Status: Incorrect Status List (inside one revision)	direct TC.DB access compare status of IR, datasets, BOMview etc. Defining filter what objects have to be compared  Check 1: check if release status of IR and datasets are the same  Check 2: check if last release status of ir and second last release status of ir are compatible	Check 1: 111 Check 2: 112
1.2	More than 1 Revision with status "Released" for 1 Item	JobMgr.DB	120
1.3	Wrong Release Date on Revision and Status	direct TC.DB access Defining filter what objects have to be compared Rules. .: Check ,Date Order` by IR.ID ,Alpha Order` Objects.: Inc. Filter by Type of objects  Example.: A1 Date.Cr < A2 Date.Cr A1 Date.Rel < A2 Date.Rel A2 Date.Cr < A3 Date.Cr A2 Date.Rel < A3 Date.Rel	Release Date 131 Creation date 132
1.4	Inconsistent Owning Site under an Item	Already existing based on JobMgr.DB/MCC Leave it as it is	
1.5	Owning Users: Complete the admin user cleanup	Mark everything which is owned by specified users	150
1.6	CADItemRevisions renamed by migration team	Check for Item/ItemRevision/Dataset naming convention	I:161 IR:162 DS.:163
1.7	Comp Release.Obj Date and Release Date on I/IR/DS New:30.04.2018 S.Gueth	WRN_202_RelDateIrToStatusObjDif appears when last release date of IR and release date of work Space object (IR) are different	202
1.8	Comp Release.Obj Date and Release Date on I/IR/DS New:30.04.2018 S.Gueth	ERR_203_RelDateIrIsMissing appears when last release date of IR (work space object) exists and release Date of status object IR Is empty	203
1.9	Comp Release.Obj Date and Release Date on I/IR/DS New:30.04.2018 S.Gueth	ERR_204_RelDateWSOIsMissing appears when last release date of IR (work space object) is empty and release date of status object IR exists	204

## TC Data Quality Check Details

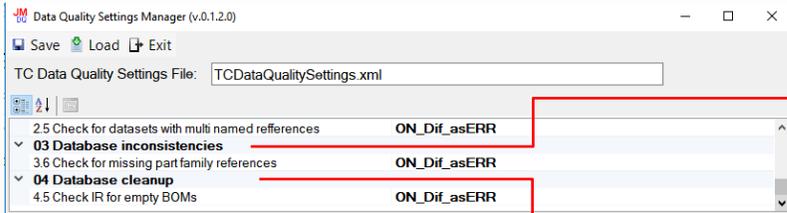
### Categorization of the issues (2of3)



Pos	Description:	Note	ResultCode
<b>2</b>	<b>DataSet inconsistencies</b>		
2.1	Too many dataset versions	PURGE datasets along refile	210
2.2	Missing Dataset Reference	ERR_301_DSIsMissingFile Integrate with results	220
2.3	Dataset Versions referenced #New: 08.12.2017	<b>Dataset Versions</b> are referenced by Folders or others	230
2.4	Inconsistent Cardinality	WRN_140_DSHasMultiIrRefs Integrate with results	240
2.5	Inconsistent Dataset References	ERR_302_DSHasMuticADFiles Integrate with results	250

# TC Data Quality Check Details

## Categorization of the issues (3of3)



Pos	Description:	Note	ResultCode
<b>3</b>	<b>Database inconsistencies (relations, missing objects, ...)</b>		
3.6	Missing Part Family Member References	Data about PFM/PFT will be collected during refile for further analysis	361 .. 366
	WRN_361_PFMemberFolderRef	appear if Partfamily Member Item is not below 'PFMaster-Item-folder'	361
	WRN_362_PFMasterFolderRef	appear if Partfamily Master has no Partfamily 'PFMaster-Item-folder'	362
	WRN_363_PFMasterNoPFMember	appear if Partfamily Master is missing Partfamily Members	363
	WRN_364_PFMasterMemberFolderRef	appear if Partfamily Master and Members is missing 'PFMaster-Item-folder'	364
	WRN_365_PFMasterMissing	appear if Partfamily Members is missing Partfamily Master	365
	WRN_366_PFMasterMemberHasWRN	appear if Partfamily Members of PartFamiliy Master has warings	366
<b>4</b>	<b>Database CleanUp</b>		
4.2.	POM Stub Objects	Identify BOM's / IR's containing POM Stub Objects	
4.5.	Empty BOMs	list can be delivered right away	450
4.7	AppUID	List Missing APPUIDS via SQL and re-create in front of refile	
4.11	Purge Datasets/ Revisions	see 2.1 will be done during refile	
<b>5</b>	<b>Multisite Cleanup</b>		
5.2	Owning Site correction	obsolete	
5.3	Missing Revision	obsolete	
5.4	Multiple Revisions with same ID	obsolete	

# TC Data Quality Check Details

## Base Settings of all Checks:

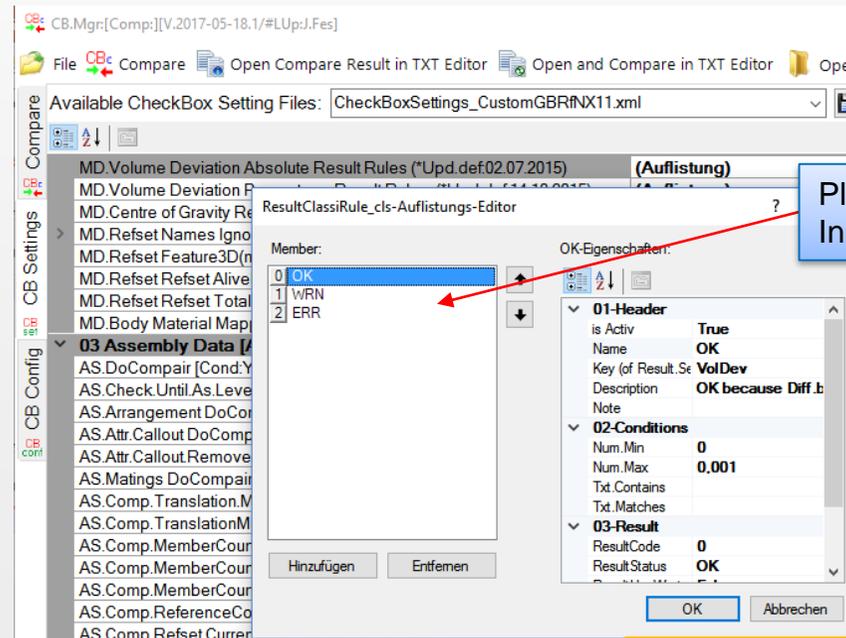
### Each Check have the base setting:

- CheckOff Check is disabled
- CheckOn\_IF\_CheckCond\_Hits\_Then\_ReportAsERR If Condition hits then Report it as Error
- CheckOn\_IF\_CheckCond\_Hits\_Then\_ReportAsWRN If Condition hits then Report it as WRN

- Results is **to** set only to the Objects that have the ISSUE

- If rule is only valid on specific types (Item/Ir/Ds) then we need to include also TC.type in Check Rule definitions

12.06.2017 S.Gueth Software enhanced



Please see also setting In CheckBox

#New: 05.06.2017 / J.Fes  
#LUp: 12.06.2017 / S.Gueth

## TC Data Quality Check Details

### Categorization of the issues (1 of 2)

Data Quality Settings Manager (v.0.1.1.0)

Save Load Exit

TC Data Quality Settings File: TCDataQualitySettings.xml

- 01 Data inconsistencies
  - 1.1 Check release status list for rev **True**
  - 1.2.1 Check more that one released revision **True**
  - 1.2.2 status for released revisions **Released**
  - 1.3 Check chronological creation date of revisions **True**
  - 1.4.1 Check chronological creation date of revisions **True**
  - 1.4.2 status for canceled revisions **True**
  - 1.5.1 Check for specific owners **True**
  - 1.5.2 specific owners **String[]-Array**
  - 1.6.1 Check for specific name rules for item **True**
  - 1.6.2 Specific naming rules for item **[defined patterns:0][matching type:all]**
  - 1.6.3 Check for specific name rules for revisions **True**
  - 1.6.4 Specific naming rules for revisions **[defined patterns:0][matching type:all]**
  - 1.6.5 Check for specific name rules for datasets **True**
  - 1.6.6 Specific naming rules for revisions **[defined patterns:0][matching type:all]**
- 02 DataSet inconsistencies
  - 2.1.1 Check for to many dataset versions **True**
  - 2.1.2 Keep limit for dataset versions **3**
  - 2.2 Check for missing named references in dataset **True**
  - 2.4 Check inconsistent cardinality for dataset **True**
  - 2.5 Check for datasets with multi named references **True**
- 04 Database cleanup
  - 4.1 Check IR for empty BOMs **True**

4.1 Check IR for empty BOMs  
checks if an item revision has an empty bom  
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Pos	Description:	Note	ResultCode
<b>1</b>	<b>Data inconsistencies</b>		
1.1	Chk. Release Status: Incorrect Status List (inside one revision)	direct TC.DB access compare status of IR, datasets, BOMview etc. Defining filter what objects have to be compared	110
1.2	More than 1 Revision with status "Released" for 1 Item	JobMgr.DB	120
1.3	Wrong Release Date on Revision and Status	direct TC.DB access Defining filter what objects have to be compared Rules. .: Check ,Date Order' by IR.ID ,Alpha Order' Objects.: Inc. Filter by Type of objects  Example.: A1 Date.Cr < A2 Date.Cr A1 Date.Rel < A2 Date.Rel A2 Date.Cr < A3 Date.Cr A2 Date.Rel < A3 Date.Rel <b>13.06.2017 S.Gueth: Rcodes Updated / Sort Issue solved</b>	Release Date 131 Creation date 132
1.4	Inconsistent Owning Site under an Item	Already existing based on JobMgr.DB/MCC Leave it as it is <b>02.06.2017 Chris: Talks with Mr. Gruber</b> <b>07.06.2017 Chris: will take with Mrs. Handsel then decide if check is needed</b>	
1.5	Owning Users: Complete the admin user cleanup	Mark everything which is owned by specified users <b>02.06.2017 Result Need to set to 150</b>	150
1.6	CADItemRevisions renamed by migration team	Check for Item/ItemRevision/Dataset naming convention	I:161 IR:162 DS.:163

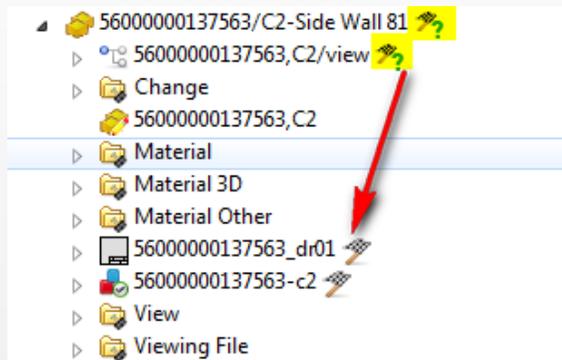
#New: 29.05.2017 / J.Fes  
#LUp: 05.06.2017 / J.Fes+Krzy.Du

## Check 1.1 Release Status: Incorrect Status List (inside one revision)

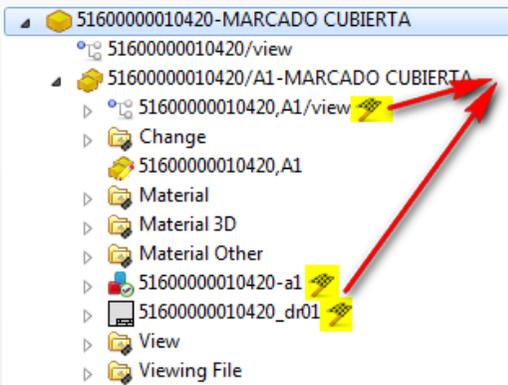
### Data inconsistencies (1of3)

- ✓ Incorrect status within Item Revision

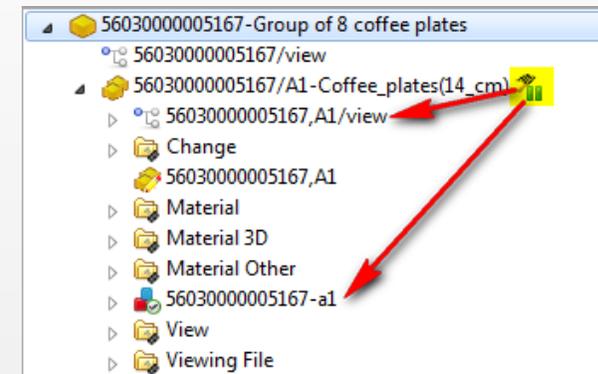
#### Mixed statuses



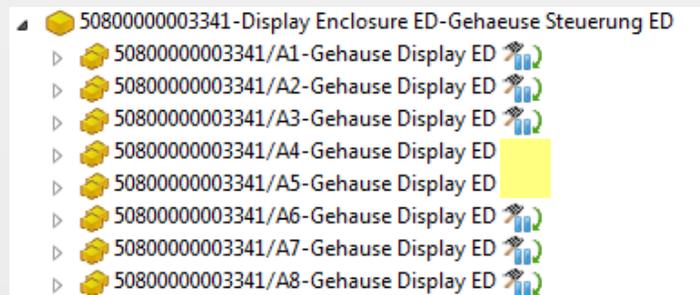
#### Missing status on IR



#### Missing status on BVR and dataset



- ✓ Missing status on Item Revision(s)



Notes:

- witch data are used for this Check are direct form TC.DB or from JobMgr Data?
- This Check need to check status for defined object types

## Check 1.1 Release Status: Incorrect Status List (inside one revision)

5840C000034199-slotted\_capstan\_s\_DIN\_404

Object	Type	Relation	Owner	Group ID	Last Modifie...	Checked-Out	Status
Family Members	Folder	References	BSH Catalog	catalog.bsh_ç	10-Aug-2005 16:0		
5840C000034199/A1-slotted_capst	Catalog Revision	Revisions	BSH Catalog	catalog.bsh_ç	21-Dec-2005 11:0		Archived
5840C000034199/B1-slotted_capst	Catalog Revision	Revisions	BSH Catalog	catalog.bsh_ç	19-Apr-2011 09:0		[Released, Archived]
5840C000034199/C1-slotted_capst	Catalog Revision	Revisions	BSH Catalog	catalog.bsh_ç	30-Sep-2013 11:0		Released

Properties

Catalog Revision

Status: Released  
Archived

Object	Type	Relation	Owner	Group ID	Last Modifie...	Checked-Out	Status
5840C000034199/B1-slotted	Catalog Revision	Revisions	BSH Catalog	catalog.bsh_ç	19-Apr-2011 09:0		[Released, Archived]
5840C000034199_B1	Catalog Master	Item Masters	BSH Catalog	catalog.bsh_ç	09-Jan-2006 10:4		
5840c000034199-b1	DirectModel	Rendering	BSH Catalog	catalog.bsh_ç	18-Nov-2007 08:0		
5840c000034199-b1	UGMASTER	Specifications	BSH Catalog	catalog.bsh_ç	19-Apr-2011 09:0		[Released, Archived]

## Check 1.1 Release Status: Incorrect Status List (inside one revision)

you can define a list of dataset types for check 1.1 where the release status will be compared to the release state of the item revision (the \* means any dataset type):

Result code on failure is: 111

Data Quality Settings Manager (v.0.1.1.0)

Save Load Exit

TC Data Quality Settings File:

01 Data inconsistencies	True
1.1.1 Check release status for rev	(Sammlung)
1.1.3 Settings for release states	String[]-Array
1.1.3 Settings for release status consistency for datasets	
1.1.4 On failure mark as	
1.2.1 Check more that one released revision	
1.2.2 status for released revisions	
1.2.3 On failure mark as	
1.3.1.1 Check chronological release date of revisions	
1.3.1.2 status for canceled revisions	
1.3.1.3 On failure mark as	
1.3.2.1 Check chronological creation date of revisions	
1.3.2.2 On failure mark as	
1.5.1 Check for specific owners	
1.5.2 specific owners	
1.5.3 On failure mark as	
1.6.1.1 Check for specific name rules for item	
1.6.1.2 Specific naming rules for item	
1.6.1.3 On failure mark as	
1.6.2.1 Check for specific name rules for revisions	
1.6.2.2 Specific naming rules for revisions	
1.6.2.3 On failure mark as	

Zeichenfolgen-Editor

Zeichenfolgen in der Sammlung eingeben (eine pro Zeile):

```
UGPART
UGMASTER
```

OK Abbrechen

#New: 27.06.2017 / S.Gueth  
#Lup:

## Check 1.1 Release Status: Incorrect Status List (inside one revision)

### Data inconsistencies (1of3)

Notes:

Example:

Item	IR	DATA in IR	Last.RelSt	2ntLast.RelSt
4711	4711/a	Dataset1 Dataset1 BOM	Frozen	
	4711/b	Dataset1 Dataset1 BOM	Tool Order	Quotation
	4711/c	Dataset1 Dataset1 BOM	Released	Tool Order

Last.Rel. Status	Allowed Status defs. for 2ntLast.Rel.Status
Released	any status except of status: 'Invalid,Archived'
Tool Order	status 'Frozen', 'Quotation' and 'Cancelled' possible
Quotation	status Frozen and Cancelled possible
Frozen	status Frozen and Cancelled possible
Cancelled	status Frozen, Tool Order, Quotation possible
Invalid	Rel.Status.Last 'Invalid' has to be set on Item all IR's and on Obj below IR's
Archived	Status 'Released'

## Check 1.1 Release Status: Incorrect Status List (inside one revision)

### Example Rel.Status 'Invalid'

Object	Type	Relation	Status
50400001002728	CADItem		Invalid
50400001002728	CADItem Revision	Revisions	[Frozen, none, Invalid]
50400001002728	UGPART	Specifications	[Frozen, none, Invalid]
50400001002728	UGMASTER	Specifications	[Frozen, none, Invalid]
50400001002728	CADItem Revision	Revisions	[Frozen, Released, none, Invalid]
50400001002728	UGPART	Specifications	[Frozen, Released, none, Invalid]
50400001002728	UGMASTER	Specifications	[Frozen, Released, none, Invalid]

### Rule

All Objects must have the Last.Rel.Status 'Invalid'

## 22.09.2017 Setup Check 1.1.3 Settings for release states

**Data Quality Settings Manager (v.0.1.1.0)**

TC Data Quality Settings File: TCDataQualitySettings.xml

**01 Data inconsistencies**

- 1.1.1 Check release status for rev: True
- 1.1.3 Settings for release states (Collection)**
- 1.1.3 Settings for release status consistency for datasets: String[] Array
- 1.1.4 On failure mark as: FRR
- 1.2.1 Check more that one released revision
- 1.2.2 status for released revisions
- 1.2.3 On failure mark as
- 1.3.1.1 Check chronological release date of revisions
- 1.3.1.2 status for canceled revisions
- 1.3.1.3 On failure mark as
- 1.3.2.1 Check chronological creation date of revisions
- 1.3.2.2 On failure mark as
- 1.5.1 Check for specific owners
- 1.5.2 specific owners
- 1.5.3 On failure mark as
- 1.6.1.1 Check for specific name rules for item
- 1.6.1.2 Specific naming rules for item
- 1.6.1.3 On failure mark as
- 1.6.2.1 Check for specific name rules for revisions
- 1.6.2.2 Specific naming rules for revisions
- 1.6.2.3 On failure mark as
- 1.6.3.1 Check for specific name rules for datasets
- 1.6.3.2 Specific naming rules for datasets
- 1.6.3.3 On failure mark as

**02 DataSet inconsistencies**

- 2.1.1 Check for too many dataset versions
- 2.1.2 Keep limit for dataset versions

**RelStateCheckSettings\_cls Collection Editor (Tool Order properties)**

Index	Property	Value
1	last release status	Tool Order
2	allowed 2 last release states	String[] Array
[0]		Frozen
[1]		Quotation
[2]		Cancelled
3	NOT allowed 2 last release states	String[] Array

**RelStateCheckSettings\_cls Collection Editor (Released properties)**

Index	Property	Value
1	last release status	Released
2	allowed 2 last release states	String[] Array
[0]		-
3	NOT allowed 2 last release states	String[] Array
[0]		Invalid

Defines allow status before this status

Defines NOT allowed status before this status

## Check 1.1 Release Status: Incorrect Status List (inside one revision)

### Einbinden von Obj\_ReleaseStateListAll.sql

```

MigIdeas2NX_35_APBomCompar_cls.vb  MigIdeas2NX_01_2_...AExample_docu.txt  TCDDataQuality_2016...yChecksVer1_cls.vb  TCDDataQuality_2016...tyCheckVer1_cls.vb
VB JobManager.CmdTools  SharedQualityChecksVer1_cls  Check110RelStateListOfRev
18      ''' <summary>
19      ''' function that checks if there are different rel status under one revision
20      ''' <para/>#Doc: ?? Check 1.1 Release Status: Incorrect Status List (inside one revision)
21      ''' </summary>
22      ''' <remarks>
23      ''' #New: 3.1266;26.09.2016;S.Gueth
24      ''' </remarks>
1 Verweis
25      Public Shared Function Check110RelStateListOfRev(ByRef DQItem_obj As DataQualityItem_cls) As ToolsGl
26
27      ' set result group, result key and description of check
28      Dim resGroup As String = SectionGroupEnumV1.C1_RelStat.ToString
29      Dim resSecKey As String = SectionKeysEnumV1.StatLi.ToString
30      Dim checkDescription As String = "release states between itemRev and dataset are different"

```

#New: 25.05.2017 / J.Fes  
#Lup:

## Check 1.3 Wrong Release Date on Revision and Status

Details from BSH Documentation BSH\_TeamcenterTopicsforCleanup\_TCDATAQualityCheck.docx

### 1.3. Wrong Release Date on Revision and Status

Sequence of ItemRevisions and their assigned datasets not correct – “Date Released” and “Date Created” have to be in chronological order, except of ItemRevision with Status “**Cancelled**”! Status “Cancelled” can be set on any ItemRev at any time.

Note: **Modification dates** should not be considered as the ItemRevisions could be modified by admin-users after release. (e.g. setting “last status” flag).

A1 dates < A2 dates < A3 dates ... < B1 dates ... < Z99 dates

- Check of Archived Statuses
  - The “Date Released” of the statuses “Archived” has to be older than the “Date Released” of the last status “Released”
  - Date Released of status “Archived” ReleaseStatusImpl < Date Released of Status “Released” ReleaseStatusImpl

**Analysis:** can be done via JobManager – consistency check (already available)

**Effect:** If the release status data is not correct, the opening of an assembly or an Item could be show the wrong result. Depending on the load options, the revision with the highest date will be loaded. → **Critical OP – no discussion** → **high critical (damage in case of tool order with wrong content)**

#New: 29.05.2017 / J.Fes  
#Lup:

## Check 1.3 Wrong Release Date on Revision and Status

Important:

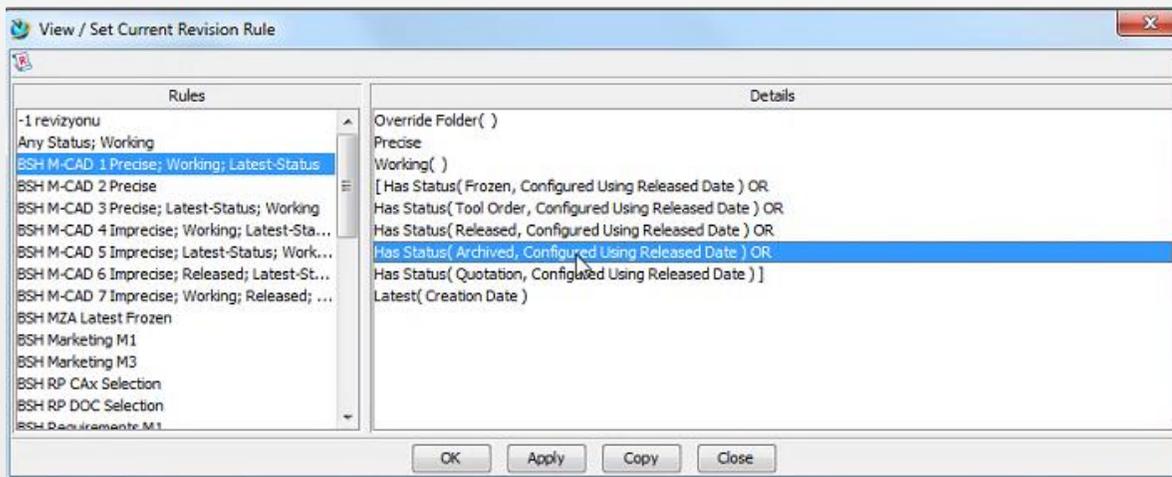
It is needed to check the "Creation date" and "Release Date"

1.3	Wrong Release Date on Revision and Status	<pre> direct TC.DB access Defining filter what objects have to compared Rules. .: Check ,Date Order' by IR.ID ,Alpha Order' Objects.: Inc. Filter by Type of objects  Example.: A1 Date.Cr &lt; A2 Date.Cr A1 Date.Rel &lt; A2 Date.Rel A2 Date.Cr &lt; A3 Date.Cr A2 Date.Rel &lt; A3 Date.Rel                     </pre>	130
-----	---	--	-----

Note:

Object Types should be configurable

It Shld be configurable if Creation Date and Replease



#New: 29.05.2017 / J.Fes  
#Lup:

## Check 1.3 Wrong Release Date on Revision and Status

### Issue Sort Order

**Before:** Item Revision where sorted by alphabetic rules:

```
55000000013295/A1  
55000000013295/A10  
55000000013295/A11  
55000000013295/A2  
55000000013295/A3  
55000000013295/A4  
55000000013295/A5  
55000000013295/A6  
55000000013295/A7  
55000000013295/A8  
55000000013295/A9
```

**Now:** Item Revision are sorted in a natural way

```
55000000013295/A1  
55000000013295/A2  
55000000013295/A3  
55000000013295/A4  
55000000013295/A5  
55000000013295/A6  
55000000013295/A7  
55000000013295/A8  
55000000013295/A9  
55000000013295/A10  
55000000013295/A11
```

#New: 14.06.2017 / S.Gueth  
#LUp:

## 12.01.2018 -> Telco with Krzysztof

ER: Move error to an Item level

What about check of Date Released of an last status attached to ItemRevisions?  
Is really status 'Archiving' excluded? See 50600000002256

Object	Date Released	Status
50600000002256/A1-BRKT., GAS SHELF	15-Oct-2002 10:05	Quotation
50600000002256/A2-BRKT., GAS SHELF	30-Oct-2002 18:56	Frozen
50600000002256/A3-BRKT., GAS SHELF	30-Oct-2002 09:05	Quotation
50600000002256/A4-GAS SHELF	23-Jan-2003 00:06	Archived
50600000002256/B1-GAS SHELF	14-Feb-2003 20:43	Archived
50600000002256/C1-GAS SHELF	19-Feb-2003 20:05	Archived
50600000002256/D1-GAS SHELF	26-Mar-2003 19:20	Archived
50600000002256/E1-GAS SHELF	26-Mar-2003 19:41	Frozen
50600000002256/E2-GAS SHELF	26-Mar-2003 20:09	Frozen
50600000002256/E3-GAS SHELF	31-Mar-2003 14:43	Archived
50600000002256/F1-GAS SHELF	09-Jun-2003 17:04	Archived

TC - Revision Rules is takin date of last status

Object	Date Released	Status	Type	Date Created	Relation
50600000002256/A1-BRKT., GAS SHELF	15-Oct-2002 10:05	Quotation	CADItemRevision	15-Oct-2002 10:05	Revisions
Quotation	15-Oct-2002 10:05	ReleaseStatus			Status

Object of type  
ReleaseStatus

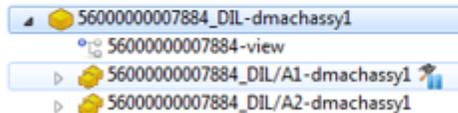
Switch to View Status below IR

Need to be enhanced !!

## Check 1.6 CADItemRevisions renamed by migration team

### 1.6. CADItemRevisions renamed by migration team

Reason: Item with different owning sites in the different CAX-systems. The Business colleagues have to decide which site is the correct owning site.



**Analysis:** can be done via JobManager – consistency check (already available) – this list can be provided right away

**Effect:** During the NextGen migration, duplicated item ids are renamed to unique ids to allow the import in the central system. The decision was done with the business coordinator. Now in some cases the user wants to have both versions of the Item. In this case one of them must be renamed to a complete new number. But this does not really affect the consistency → **Low**

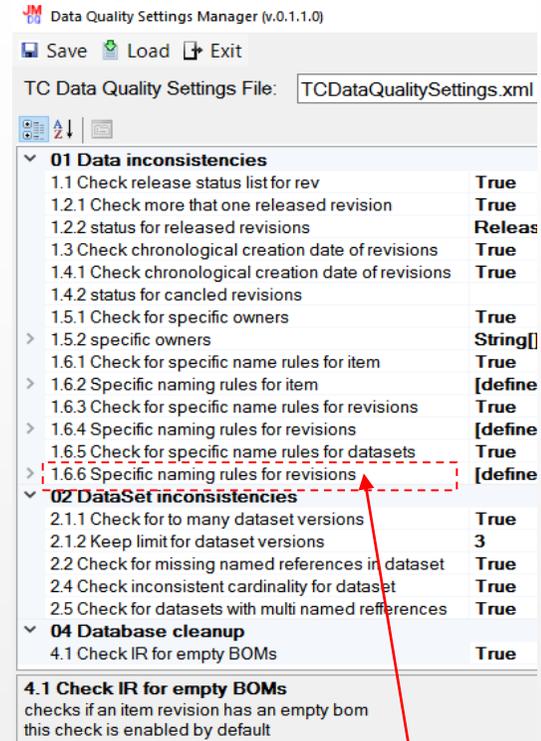
**OP.** → **Low**

### Name scema / Name Convention Rules

Type	Name	
ItemId	must match name base rules	
RevId	must match name base rules	
DS	#ItemId#-#RevId#	// master
DS	#ItemId#_dr01	// spec. 1
DS	#ItemId#_dr02	// spec. 2
DS	#ItemId#_ar01	// altrep 1
DS	#ItemId#_ar02	// altrep 2

Example:  
4711  
A  
4711-A Master  
4711\_dr01  
4711\_dr02  
B  
9999-B Master  
4711\_dr01  
4711\_dr02  
4711\_\_dil\_dr03

Replace for revisions with for datasets



#New: 05.06.2017 / J.Fes  
#Lup: 19.06.2017 / S.Gueth

## Check 1.6 CADItemRevisions renamed by migration team

New settings for naming rules for datasets. You can define naming rules for specific dataset types. And you can also use gitter variables in the naming rules for item itemRevs and datasets.

Valid gitter variables are:

```
#ItemId#
#Rev#
#IrlId#
#Irl_Puid#
#ObjectId#
#ObjectName#
#ObjectType#
#ObjectOwningSiteId#
#ObjectFromSiteId#
#ObjectCliName#
#ObjectFs_Vol#
#ObjectFs_NE#
#ObjectFs_DPNE#
#ObjectGroup#
#ObjectOwner#
#ObjectPuid#
#IrlNameCLI#
#ItemIdCLI#
#ObjectCreateDate#
#ObjectFs_DPNE#
#ObjectLastModDate#
#ObjectLastModUser#
#ObjectUgMaster_Type#
#ProcStateCol01#
#ProcStateCol02#
#ProcStateCol03#
#ProcStateCol04#
#ProcStateCol05#
#ProcStateCol06#
#ProcStateCol07#
#ProcStateCol08#
#ProcStateCol09#
#ProcStateCol10#
#ProcStateCol11#
#ProcStateCol12#
#ProcStateCol13#
#ProcStateCol14#
#ProcStateCol15#
#ProcStateCol16#
#ProcStateCol17#
#ProcStateCol18#
#ProcStateCol19#
#ProcStateCol20#
#ProcStateColRf#
```

TC Data Quality Settings File: TCDataQualitySettings-BSH.xml

Item	Value
01 Data inconsistencies	True
1.1.1 Check release status for rev	(Sammlung)
1.1.2 Settings for release states	
1.1.3 On failure mark as	
1.2.1 Check more that one released revision	
1.2.2 status for released revisions	
1.2.3 On failure mark as	
1.3.1.1 Check chronological release date of revisions	
1.3.1.2 status for cancelled revisions	
1.3.1.3 On failure mark as	
1.3.2.1 Check chronological creation date of revisions	
1.3.2.2 On failure mark as	
1.5.1 Check for specific owners	
1.5.2 specific owners	
1.5.3 On failure mark as	
1.6.1.1 Check for specific name rules for item	
1.6.1.2 Specific naming rules for item	
1.6.1.3 On failure mark as	
1.6.2.1 Check for specific name rules for revisions	
1.6.2.2 Specific naming rules for revisions	
1.6.2.3 On failure mark as	
1.6.3.1 Check for specific name rules for datasets	
1.6.3.2 Specific naming rules for datasets	
1.6.3.3 On failure mark as	
02 DataSet inconsistencies	
2.1.1 Check for to many dataset versions	
2.1.2 Keep limit for dataset versions	
2.1.3 On failure mark as	

RegExpressionsDS\_cls-Sammlungs-Editor

Member: [UGType:UGMASTER][patterns:1]

Multiple Reg Expressions	
1. all patterns have to match	True
2. regular expression patterns	String[]-Array
[0]	#ItemId#-#Rev#
3. UG dataset type	UGMASTER

Buttons:

#New: 05.06.2017 / J.Fes  
#Lup: 19.06.2017 / S.Gueth

## TC Data Quality Check Details

### Categorization of the issues (1of2)

Data Quality Settings Manager (v.0.1.1.0)

Save Load Exit

TC Data Quality Settings File: TCDataQualitySettings.xml

- 01 Data inconsistencies
  - 1.1 Check release status list for rev True
  - 1.2.1 Check more that one released revision True
  - 1.2.2 status for released revisions Released
  - 1.3 Check chronological creation date of revisions True
  - 1.4.1 Check chronological creation date of revisions True
  - 1.4.2 status for canceled revisions
  - 1.5.1 Check for specific owners True
  - 1.5.2 specific owners String[]-Array
  - 1.6.1 Check for specific name rules for item True
  - 1.6.2 Specific naming rules for item [defined patterns:0][matching type:all]
  - 1.6.3 Check for specific name rules for revisions True
  - 1.6.4 Specific naming rules for revisions [defined patterns:0][matching type:all]
  - 1.6.5 Check for specific name rules for datasets True
  - 1.6.6 Specific naming rules for revisions [defined patterns:0][matching type:all]
- 02 DataSet inconsistencies
  - 2.1.1 Check for to many dataset versions True
  - 2.1.2 Keep limit for dataset versions 3
  - 2.2 Check for missing named references in dataset True
  - 2.4 Check inconsistent cardinality for dataset True
  - 2.5 Check for datasets with multi named references True
- 04 Database cleanup
  - 4.1 Check IR for empty BOMs True

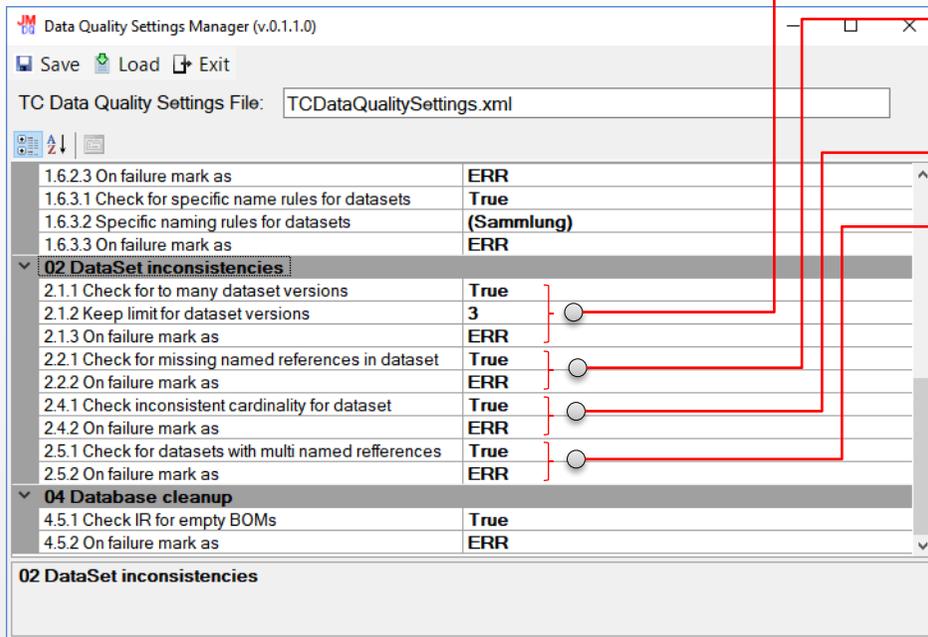
4.1 Check IR for empty BOMs  
checks if an item revision has an empty bom  
this check is enabled by default

Pos	Description:	Note	ResultCode
2	<b>Dataset inconsistencies</b>		
2.1	Too many dataset versions	PURGE datasets along refile 05.06.2017 : Enhance : ISSUE 05.10.2017	211 212
2.2	Missing Dataset Reference	ERR_301_DSIsMissingFile Integrate with results 05.06.2017 : OK? 05.10.2017: YES OK	220
2.3	Dataset Revisions are referenced by Folders or others	05.06.2017 : see slide	
2.4	Inconsistent Cardinality	WRN_140_DSHasMultiIrRefs Integrate with results 05.06.2017 : OK	240
2.5	Inconsistent Dataset References	ERR_302_DSHasMuticADFiles Integrate with results 05.06.2017 : OK	250

#New: 05.06.2017 / J.Fes  
#Lup:

## TC Data Quality Check Details

### Categorization of the issues (1of2)



Pos	Description:	Note	ResultCode
<b>2</b>	<b>Dataset inconsistencies</b>		
2.1	Too many dataset versions	PURGE datasets along refile 05.06.2017 : Enhance :	211 212
2.2	Missing Dataset Reference	ERR_301_DSIsMissingFile Integrate with results 05.06.2017 : OK? 05.10.2017: YES OK	220
2.3	Dataset Revisions are referenced by Folders or others	05.10.2017 : see slide	
2.4	Inconsistent Cardinality	WRN_140_DSHasMultiIrRefs Integrate with results 05.06.2017 : OK	240
2.5	Inconsistent Dataset References	ERR_302_DSHasMuticADFiles Integrate with results 05.10.2017 : OK	250

05.10.2017:

**2.1 Is to be checked see Issue tracker**

<https://tracksys.startp.de/Issues/IssueDetail.aspx?id=2744>

**2.3 Not jet Implemented**

#ToDo: Implement SQL to find References of Datasets to Folders or other types.

#New: 05.06.2017 / J.Fes

#Lup: 05.10.2017 / J.Fes

# Overview TC - DataCheck

MSC: Identify Data to Sync

MSC: Multi-Site Consistent Check

*MSC:Check Rules*

MSC: Completeness Analyse

MSC: Integr. in PLMJobManager

DQC: TC data quality check for NX related data

Glossar Keys: **MSC**: Tc - Multisite Check // **DQC**: Tc - Data Quality Check

## Check 2.1 Too many dataset versions

### 2.1. Too many dataset versions

Too many dataset versions, because of wrong version limit.  
Export took too much time and sometimes exports or load failed

**Analysis:** addPLM has a tool for purging internal revisions except of last and second last internal version and if one or two of three internal versions are missing, the tool will create the missing versions  
=> not only analyzing but also **cleanup**

**Effect:** If there are more than the allowed dataset versions, it will not have a negative effect for the normal work. It waste space on the volume and it creates bigger export files during the transfer ownership. → **Low**

**OP - maybe purge dataset (going to defined keep limit) should be activated again !! as former in CAX**  
→ LOW

@Sascha:  
please check current implementation

02 DataSet inconsistencies	True
2.1.1 Check for to many dataset versions	True
2.1.2 Keep limit for dataset versions	3

O.Ds.Ver	Σ φ	O.Ds.Ver(n)	Σ φ	O.Ds.VerKeepLim	Σ φ
=	5	=		=	
5		3		3	3
5		3		3	3
5		1		3	3
5		3		3	3

Check Rules:

- Check if defined Keep Limit  $\leq$  Ds.VerKeepLim ERR:211
- Check if O.Ds.Ver(n)  $\leq$  O.Ds.VerKeepLim ERR:212

#New: 05.06.2017 / J.Fes  
#Lup:

# Check 2.2 Missing Dataset Reference

## 2.2. Missing Dataset Reference

Dataset reference Imanfile does not exist but Named Reference count for dataset is available. The ImanFile from CAX system is missing or partially available in PLM system.

**Analysis:** can be done via JobManager – consistency check – this list can be provided right away

**Effect:** In this case the dataset could not be opened. If all dataset versions are missing, the whole work is lost. This must be analyzed and corrected until the old CAD sites are available, because some of this missing references could be found there → **Critical**

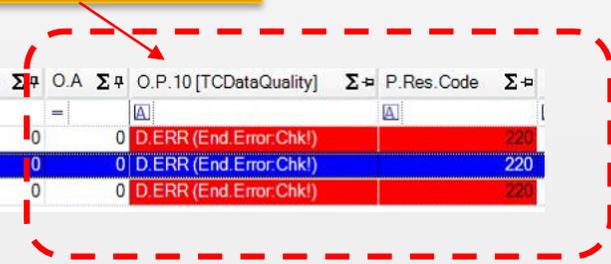
**OP - Critical --- missing files (volume) or relations (DB) → Critical**

@Sascha:  
Results is to set only to the Objects that have the ISSUE

@Sascha:  
please check current implementation

Issue Example:

Ir.Id	Σ #	O.Name	Σ #	Ir.Rank	Σ #	O.Type	Σ #	O.LastModDate	Σ #	O.Last / Σ #	O.SP/A	Σ #	O.A	Σ #	O.A	Σ #	O.P.10 [TCDataQuality]	Σ #	P.Res.Code	Σ #
51001002090553/A1		51001002090553-a1		-2		UGMASTER		2009-01-27 08:34		infodba	SP		0		0	0	D.ERR (End_Error_Chk!)		220	
51001002090553/A2		51001002090553-a2		-1		UGMASTER		2009-01-27 08:34			SP		0		0	0	D.ERR (End_Error_Chk!)		220	
51001002090553/A3		51001002090553-a3		0		UGMASTER		2008-09-08 08:00		michaelisa	SP		0		0	0	D.ERR (End_Error_Chk!)		220	



#New: 05.06.2017 / J.Fes  
#Lup:

## Check 2.3 Dataset Revisions are referenced by Folders or others

### 2.3. Dataset Revisions are referenced by Folders or others

Discrete dataset revisions are referenced by folders or others. There are seldom cases where not the central dataset (without version number display) is referenced by a folder or something similar but a discrete version. Updating the dataset then leads to errors because the old version can't be removed, e.g. Dataset highest version is 12 and version 5 is still referenced. The cleanup to keep the version limit to 3 will fail.

**Analysis:** can be done via JobManager –list can be provided

**Effect:** If a dataset revision is referenced in the system it could not be deleted during the normal purge. This affect then the case 2.1 and all its problems. A dataset version should never be references and therefore this should be also cleaned up → **Medium**

**OP - should be done.** → **Medium**

@Sascha:  
Results is to set only to the Objects that have the ISSUE

Issue Example:

Ir.Id	Σ #	O.Name	Σ #	Ir.Rank	Σ #	O.Type	Σ #	O.LastModDate	Σ #	O.Last / Σ #	O.SP/A	Σ #	O.A	Σ #	O.A	Σ #	O.P.10 [TCDataQuality]	Σ #	P.Res.Code	Σ #
51001002090553/A1		51001002090553-a1		-2		UGMASTER		2009-01-27 08:34		infodba	SP		0		0	0	D.ERR (End_Error_Chk!)		220	
51001002090553/A2		51001002090553-a2		-1		UGMASTER		2009-01-27 08:34			SP		0		0	0	D.ERR (End_Error_Chk!)		220	
51001002090553/A3		51001002090553-a3		0		UGMASTER		2008-09-08 08:00		michaelisa	SP		0		0	0	D.ERR (End_Error_Chk!)		220	

#New: 05.06.2017 / J.Fes  
#Lup:

## Check 2.3 Dataset Revisions are referenced by Folders or others

### Versions

#### 2.3. Dataset Revisions are referenced by Folders or others

Discrete dataset revisions are referenced by folders or others. There are seldom cases where not the central dataset (without version number display) is referenced by a folder or something similar but a discrete version. Updating the dataset then leads to errors because the old version can't be removed, e.g. Dataset highest version is 12 and version 5 is still referenced. The cleanup to keep the version limit to 3 will fail.

**Analysis:** can be done via JobManager -list can be provided

**Effect:** If a dataset revision is referenced in the system it could not be deleted during the normal purge. This affect then the case 2.1 and all its problems. A dataset version should never be references and therefore this should be also cleaned up → **Medium**

**OP - should be done.** → **Medium**

Object	Type	Relation
55310000002481,A1	CADItem Revision	Item Masters
55310000002481-a1	DirectModel	Rendering
55310000002481-a1	UGMASTER	Specifications
55310000002481_dr01	UGPART	References

Dataset has wrong relation so NX cannot open this part

```
_Refiling: 55310000002481/A1, Type: master.....Done.
** Refiling Complete **
Successfully processed:      1 (0 non-masters)
Failed to process:          0 (0 non-masters)
Unable to process:          0 (0 non-masters)
```

#### Definition:

- Check if Dataset have right 'relation type' between DS and Revision  
In JobMgr we need a mapping with DS Type – and DataSet Ir Repletion type
- Check If DS has only 1 Relation to revision  
any other relation is found for datasets versions

#### 2 Results:

- Right relation to IR
- DS.Version has no other relation then 'revision-anchor' relation

#### For Implementation:

- Need SQL to find any references

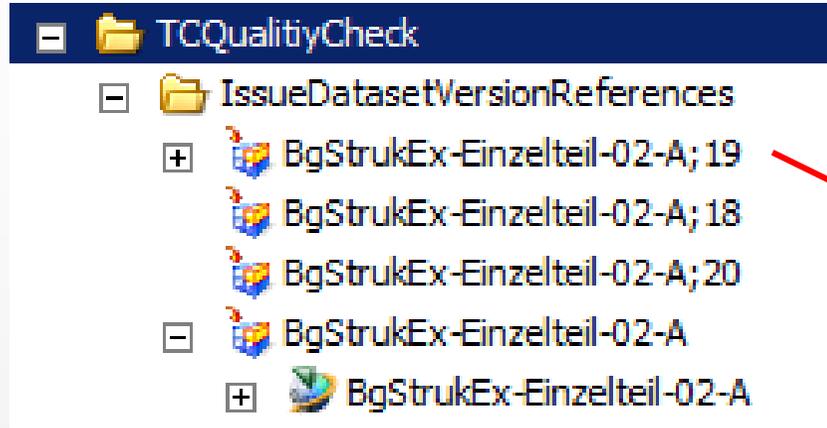
```
obj_Attr.SQL  3.. I_IR.SQL  4.. I_All.SQL  5.. IR_DataSetsAll.SQL  6.. IR_DataSets.S
0 ..... 10 ..... 20 ..... 30 ..... 40 ..... 50
1 /* IR DS #L.Up J.Fes 26.10.16 */
2 SELECT
3 pd.puid As DataSetPuid,
4 s.psite_id As OwningSite_TC_pSite_ID,
5 ptype.ptype_name As DataSetIrRelationType,
6 pdt.pdatasettype_name As DataSetType,
7 wso.pobject_name As DataSetName,
```

#New: 05.06.2017 / J.Fes  
#Lup:

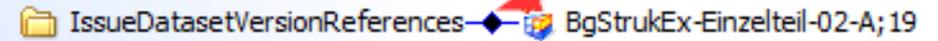
## Check 2.3 Dataset Revisions are referenced by Folders or others

Example: Issue

Data structure



Where Referenced



**!! Dataset Version !!**

#New: 05.06.2017 / J.Fes  
 #Lup: 31.05.2018 / J.Fes

## TC Data Quality Check Details

### Categorization of the issues (2of2)

Data Quality Settings Manager (v.0.1.1.0)

TC Data Quality Settings File: TCDataQualitySettings.xml

- 01 Data inconsistencies
  - 1.1 Check release status list for rev **True**
  - 1.2.1 Check more that one released revision **True**
  - 1.2.2 status for released revisions **Released**
  - 1.3 Check chronological creation date of revisions **True**
  - 1.4.1 Check chronological creation date of revisions **True**
  - 1.4.2 status for canceled revisions
  - 1.5.1 Check for specific owners **True**
  - 1.5.2 specific owners **String[]-Array**
  - 1.6.1 Check for specific name rules for item **True**
  - 1.6.2 Specific naming rules for item **[defined patterns:0][matching type:all]**
  - 1.6.3 Check for specific name rules for revisions **True**
  - 1.6.4 Specific naming rules for revisions **[defined patterns:0][matching type:all]**
  - 1.6.5 Check for specific name rules for datasets **True**
  - 1.6.6 Specific naming rules for revisions **[defined patterns:0][matching type:all]**
- 02 DataSet inconsistencies
  - 2.1.1 Check for to many dataset versions **True**
  - 2.1.2 Keep limit for dataset versions **3**
  - 2.2 Check for missing named references in dataset **True**
  - 2.4 Check inconsistent cardinality for dataset **True**
  - 2.5 Check for datasets with multi named references **True**
- 03 - Database inconsistencies (relations, missing objects, ...)
  - 3.1 Missing Revisions under an Item  
Add List of IR Rules A-B-C... Number Rule 1,2...
  - 3.6 Missing Part Family Member References  
ON-OFF-WRN

Pos	Description:	Note	ResultCode
<b>3</b>	<b>Database inconsistencies (relations, missing objects, ...)</b>		
3.2	Missing Revisions under an Item	See point 1.3 07.06.2017 maybe integrate it into Point 1.3	
3.4	Inconsistent Ids	See point 1.6 07.06.2017 is allready integr. In 1.6	
3.5	Wrong Item Revision Ids	See point 1.6 07.06.2017 is already integr. In 1.6	
3.6	Missing Part Family Member References	Data about Partfamily Master - and Member Issues will be collected during importing/updateing data from TC to JobMgr	<b>360</b>
	WRN_361_PFMemberFolderRef	appear if Partfamily Member Item is not below 'PFMaster-Item-folder'	<b>361</b>
	WRN_362_PFMasterFolderRef	appear if Partfamily Master has no Partfamily 'PFMaster-Item-folder'	<b>362</b>
	WRN_363_PFMasterNoPFMember	appear if Partfamily Master is missing Partfamily Members	<b>363</b>
	WRN_364_PFMasterMemberFolderRef	appear if Partfamily Master and Members is missing 'PFMaster-Item-folder'	<b>364</b>
	WRN_365_PFMasterMissing	appear if Partfamily Members is missing Partfamily Master	<b>365</b>
	WRN_366_PFMasterMemberHasWRN	appear if Partfamily Members of PartFamily Master has warings	<b>366</b>

#New: 05.06.2017 / J.Fes  
#LUp: 31.05.2018 / J.Fes

## Check 3.2 Missing Revisions under an Item

### 3.2. Missing Revisions under an Item

Hadsel: Not critical

The name of an item revision is a combination of former called revision and sequence.

The abbreviation for revision is a single character and for sequence it is a number.

The "Revision" of the ItemRevisions of one Item must be in alphabetical order without any gaps:

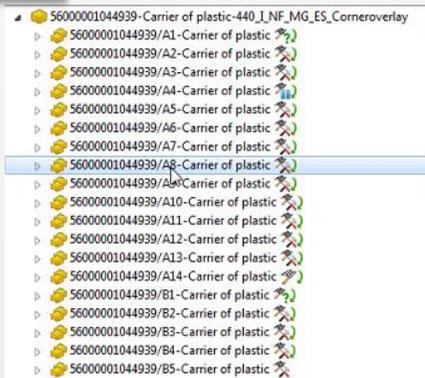
A-B-C-D-E-F-G-H-I-J-K-L-M-N-O-P-Q-R-S-T-U-V-W-X-Y-Z-AA-AB-.....-AAA

Analysis: can be done via JobManager

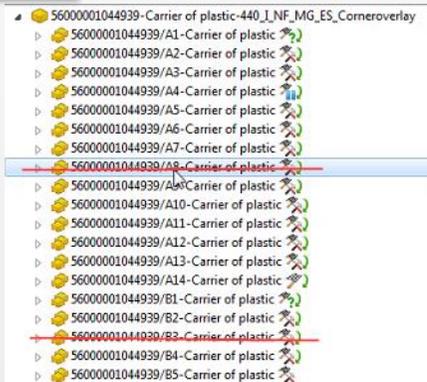
Effect: If a revision number is missing under an Item, it has no real effect on the system. Only in the case that a whole revision is missing, but in this case the revision id jumps from A1 to C1 and so the B is missing. There is no real reason to correct this. It is only a display topic. → Low  
OP -> Low

Examples:

OK

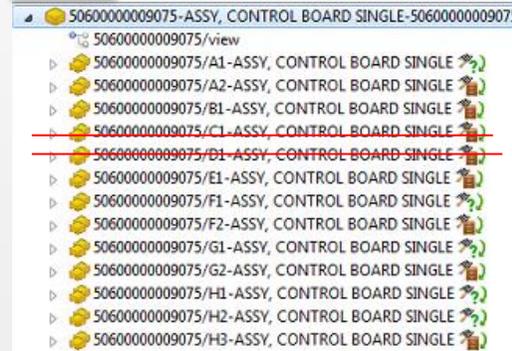


WRN



In case Next Number is missing:  
Result.Msg = A8,B3

WRN



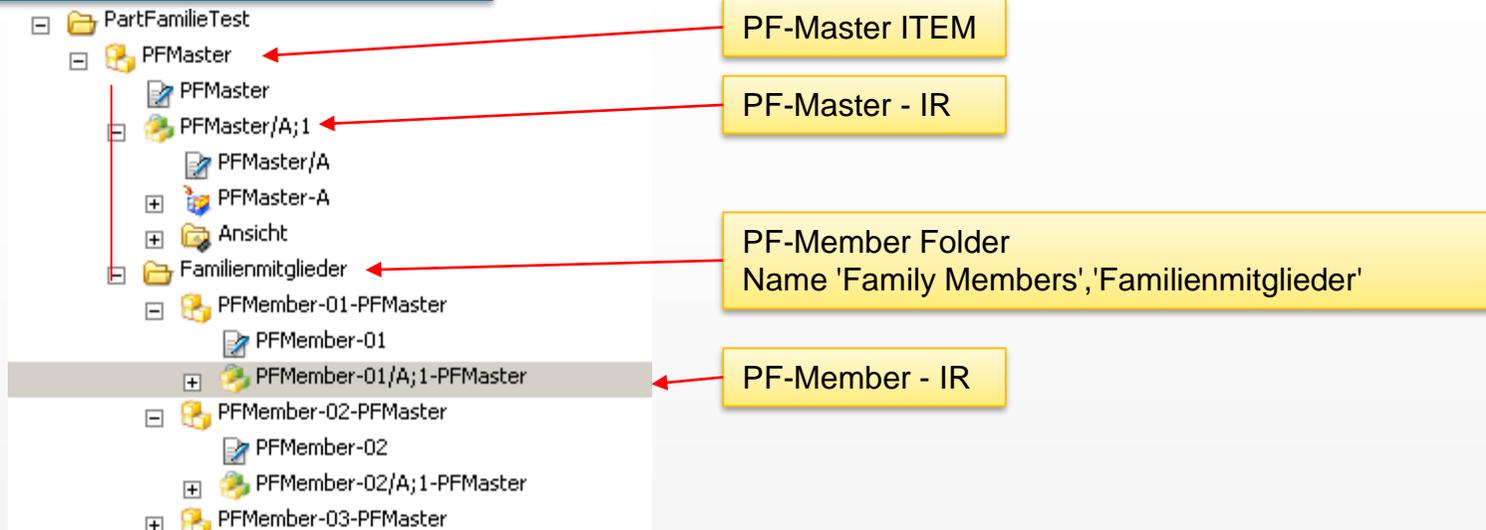
In case IR is missing at all:  
Result.Msg = Cx,Dx

Results is to assign to ITEM as WRN with the list of missing Revld's

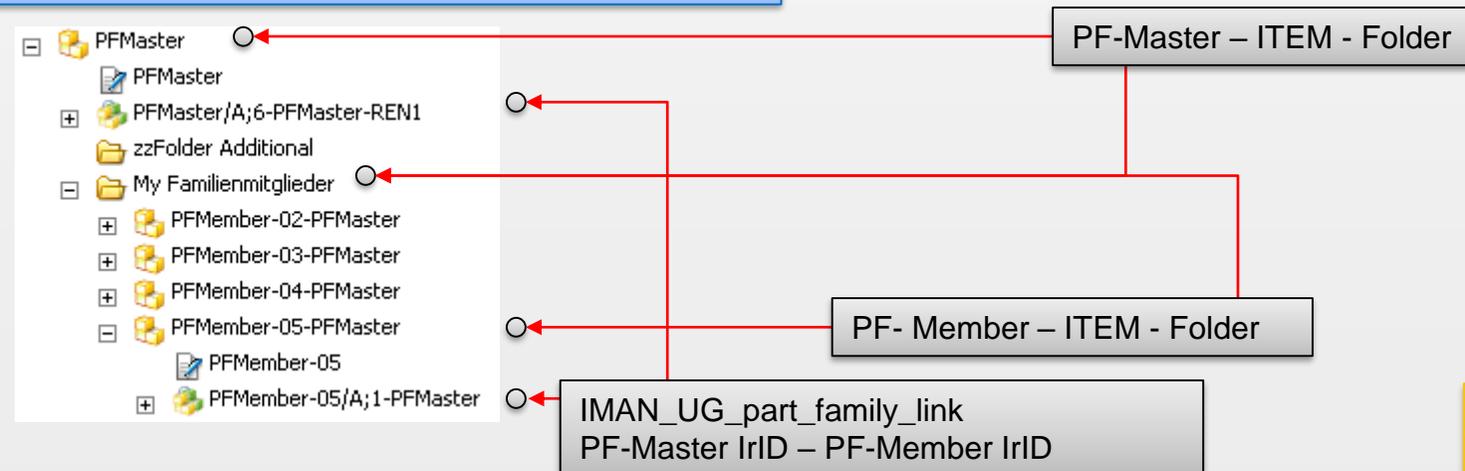
#New: 07.06.2017 / J.Fes  
#Lup:

## Check 3.6 Missing Part Family Member References

### Data Model



### Details Relations between PF – Master - Members



#New: 14.05.2018 / J.Fes  
#Lup:

## Check 3.6 Missing Part Family Member References

see 3.6 in data quality settings

results for this check are on item revisions

error code 361: part family member (pfm) not refferenced to pfm folder of template

error code 362: part family master has no part famliy members

error code 363: part family master has no part family folder

TC Data Quality Settings File:

01 Data inconsistencies	
1.1.1 Check release status for rev	ON_Dif_asERR
1.1.2 Settings for release status consistency for dataset types	String[]-Array
1.1.3 Settings for release states	(Sammlung)
1.2.1 Check more than one released rev	ON_Dif_asERR
1.2.2 status for released revisions	Released
1.3.1.1 Check chronological order for 'ItemRev - Rel.Status - Rel.Date' bse/behavior	ON_Dif_asERR
1.3.1.2 Check chronological order for 'ItemRev - Rel.Status - Rel.Date' set eXclude	String[]-Array
1.3.2 Check chronological order for 'Creation Date of IR's'	ON_Dif_asERR
1.5.1 Check for specific owners	ON_Dif_asERR
1.5.2 specific owners	String[]-Array
1.6.1.1 Check for specific name rules for item	ON_Dif_asERR
1.6.1.2 Specific naming rules for item	[defined patterns:0][matching type:all]
1.6.2.1 Check for specific name rules for revisions	ON_Dif_asERR
1.6.2.2 Specific naming rules for revisions	[defined patterns:0][matching type:all]
1.6.3.1 Check for specific name rules for datasets	ON_Dif_asERR
1.6.3.2 Specific naming rules for datasets	(Sammlung)
02 DataSet inconsistencies	
2.1.1 Check for to many dataset versions	ON_Dif_asERR
2.1.2 Keep limit for dataset versions	3
2.2 Check for missing named references in dataset	ON_Dif_asERR
2.4 Check inconsistent cardinality for dataset	ON_Dif_asERR
2.5 Check for datasets with multi named references	ON_Dif_asERR
03 Database inconsistencies	
3.6 Check for missing part family references	ON_Dif_asERR
04 Database cleanup	
4.5 Check IR for empty BOMs	ON_Dif_asERR

#New: 03.11.2017 / J.Fes  
#Lup: 08.11.2017 / S.Gueth

# TC Data Quality Check Details

## Categorization of the issues (2of2)

Data Quality Settings Manager (v.0.1.1.0)

Save Load Exit

TC Data Quality Settings File: TCDDataQualitySettings.xml

- 01 Data inconsistencies
  - 1.1 Check release status list for rev True
  - 1.2.1 Check more that one released revision True
  - 1.2.2 status for released revisions Released
  - 1.3 Check chronological creation date of revisions True
  - 1.4.1 Check chronological creation date of revisions True
  - 1.4.2 status for canceled revisions
  - 1.5.1 Check for specific owners True
  - 1.5.2 specific owners String[]-Array
  - 1.6.1 Check for specific name rules for item True
  - 1.6.2 Specific naming rules for item [defined patterns:0][matching type:all]
  - 1.6.3 Check for specific name rules for revisions True
  - 1.6.4 Specific naming rules for revisions [defined patterns:0][matching type:all]
  - 1.6.5 Check for specific name rules for datasets True
  - 1.6.6 Specific naming rules for revisions [defined patterns:0][matching type:all]
- 02 DataSet inconsistencies
  - 2.1.1 Check for to many dataset versions True
  - 2.1.2 Keep limit for dataset versions 3
  - 2.2 Check for missing named references in dataset True
  - 2.4 Check inconsistent cardinality for dataset True
  - 2.5 Check for datasets with multi named references True
- 04 Database cleanup
  - 4.1 Check IR for empty BOMs True

**4.1 Check IR for empty BOMs**  
checks if an item revision has an empty bom  
this check is enabled by default

Pos	Description:	Note	ResultCode
<b>4 Database CleanUp</b>			
4.2.	POM Stub Objects	Identify BOM's / IR's containing POM Stub Objects 07.06.17 see details on Slide Check 4.2 POM Stub Objects	
4.5.	Empty BOMs	list can be delivered right away 07.06.17 see change R.Code	410 Change to 450
4.7	AppUID	List Missing APPUIDS via SQL and re-create in front of refile 07.06.17 No integration needed because Object are created via refile	
4.11	Purge Datasets/ Revisions	see 2.1 will be done during refile 07.06.17 Action is Done with last Refile	
<b>5 Multisite Cleanup</b>			
5.2	Owning Site correction	obsolete	
5.3	Missing Revision	obsolete	
5.4	Multiple Revisions with same ID	obsolete	

## Check 4.2 POM Stub Objects

### 4.2. POM Stub Objects

Removal of not used POM Stub objects. This comes from the migration  
Some objects point to stub which were never imported to the system. The stubs and the relations must be deleted, or the objects created instead of stub

Chris : 16.03.2016 : Example of STUB in BOMViewRevision due to missing ItemRevision

BOM Line	Find No.	Rule configured by	Item Rev Status	Item Description
56500000065315/F10-Assembly gear brewing-unit V3 (View)			Tool Order	
50900001005113/C3-Gear-case middle II	150	Precise	Released	Getriebegehäuse mitteteil
56500000067759/E4-Gear case top	160	Precise	Released	KVA
56500000067757/F5-Gear case bottom	270	Precise	Released	Getriebegehäuse unterteil
50900000001822/E1-Worm-wheel	280	Precise	Tool Order, Released	Wormwheel
50900000001829/A1-Steel ball dia4mm	290	Precise	Tool Order, Released	50900000001829
50900000001829/A1-Steel ball dia4mm	300	Precise	Tool Order, Released	50900000001829
50900000001827/C1-Sleeve	310	Precise	Released	50900000001827
50900000001821/C1-Assembly Motor Brewing-Unit (View)	320	Precise	Released	
<<REMOTE OBJECT>>	330	No configured Revision		
56500000041560/C1-Assembly switches BU state TE7 ZF (View)	340	Precise	Quotation, Tool Orde...	
<<REMOTE OBJECT>>	360	No configured Revision		
56500001163794/A3-Asm Switches BU State 60 (View)	370	Precise	Tool Order	56500001163794
<<REMOTE OBJECT>>	380	No configured Revision		
<<REMOTE OBJECT>>	390	No configured Revision		

Such an assembly cannot be opened

Example:  
POM Stub's

Result.Msg In this case  
BOMStubs:ERR 4n

ToDo:  
- Review Methodes  
- mybe analyse during JS.Import

Results:  
add to IR the numbers (n) of BOM Stubs in BOM

```

PSPad - [V:\JobManager\ProgEntw\Ver03\JobManagerV3\01-BinServer\Resources\TcSQL\BOMc_ImPrecise_TCUA.SQL]
File Projects Edit Search View Format Tools HTML Settings Window Help(x)
1.. BOMc_ImPrecise_TCUA.SQL
0 ..... 10 ..... 20 ..... 30 ..... 40 ..... 50 ..... 60 ..... 70 ..... 80 .....
1 /* TCUA BOMc ImPrecise: BOMLi Rev.Rule:latest.or L.Up 20.01.15 */
2 SELECT ItemID ,
3       IrID ,
4       IrPuid ,
5       count(*) AS BOMLi
6 from
7 (
8 SELECT
9   iBOMLi.pitem_id      AS ItemID,
10  irBOMLi.pitem_revision_id AS IrID,
11  irBOMLi.puid         AS IrPuid,
12  rank() over (partition BY iBOMLi.puid ORDER BY paoIrBOMLi.pcreation_date DESC) AS rnk
13 FROM
14   infodba.PITEM                iBOM
15 INNER JOIN infodba.PITEMREVISION irBOM ON (iBOM.puid = irBOM.ritems_tagu)
16 INNER JOIN infodba.PSTRUCTURE_REVISIONS ps ON (irBOM.puid = ps.puid)
17
18 INNER JOIN infodba.PPSBOMVIEWREVISION bvr ON (ps.pvalu_0 = bvr.puid)
19 INNER JOIN infodba.PPSOCCURRENCE bo ON (bvr.puid = bo.rparent_bvru)
20 INNER JOIN infodba.PITEM iBOMLi ON (bo.rchild_itemu = iBOMLi.puid)
21 INNER JOIN infodba.PITEMREVISION irBOMLi ON (iBOMLi.puid = irBOMLi.ritems_tagu)
22
23 LEFT JOIN infodba.PPSBOMVIEW bv ON (bvr.rbom_viewu = bv.puid)
24 LEFT JOIN infodba.PPSVIEWTYPE bvt ON (bvt.puid = bv.rview_typeu)
25
26 LEFT JOIN infodba.PWORKSPACEOBJECT irBOMlpwo ON (irBOMLi.puid = irBOMlpwo.puid)
27 LEFT JOIN infodba.PPOM_APPLICATION_OBJECT paoIrBOMLi ON (irBOMLi.puid = paoIrBOMLi.puid)
28
29 WHERE
30   irBOMLi.puid = :para_ir_puid
31 AND irBOMlpwo.pactive_seq = 1
32 AND upper(bvt.pname) in ('VIEW', 'CATIA_MULTI_MODEL', 'CATIA')
33 ) t
34 where rnk = 1
35 GROUP BY ItemID, IrID, IrPuid
..
    
```

Values are null in case of  
BOM Stubs

#New: 07.06.2017 / J.Fes  
#Lup: