PROSPECT PLM

PLMXML, XSL & IPS
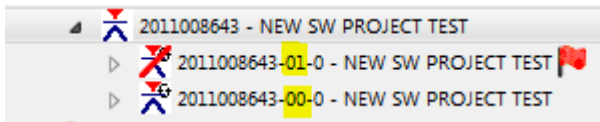
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1 Background

I very rarely delete anything in Teamcenter. This is down to the complexity of the process and the fact its fraught with danger! So, rather than deleting any revisions created by mistake users have to use the 'Obsolete Revised in Error' Workflow which sets it to Obsolete, and creates a PDF with an OBSOLETE watermark.

The problem is SolidWorks and the workflow in Teamcenter report that there is a later revision available to the user. In TC there is a later version available, SW and TC don't know that because its Obsolete it should be ignored.

This document outlines how I modify the Creation Date to an earlier date (this drives the revision order) so that it appears before rev 00. This means that in SW and when using the Issued workflow it won't report that there is a later revision available.

There are other ways to achieve this, but this solution serves us best.

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2   Transfermode and xsl

A new TransferMode has been created – IE_Revision_Export_Obsolete. It has to be a unique transfermode as there is an xsl stylesheet applied.

Name:	IE_Revision_Export_Obsolete
Context:	
Description:	
Type of Transfer	● Export ○ Import
Output Schema Format:	PLMXML
Support Incremental	☐
Closure Rule	IE_Revision_Export_CR
Filter Rule	
Property Set	IE_Revision_Export_PS
Revision Rule	

The Closure Rule has Secondary Object as Item. I'm not expecting to find an Item, but I need to fill in this field.

Traversal Rule Name:	IE_Revision_Export_CR
Description:	
Scope of Traversal:	● Export ○ Import
Output Schema Format:	PLMXML

Primary Ob...	Primary Object	Secondary ...	Secondary ...	Relation Ty...	Related Pr...	Action Type	Condition...
CLASS	IE4_InheritRevision	CLASS	Item	RELATIONP2S	*	PROCESS	

The Property Set lists ie4_STATUS_MAP which is the status compounded to the revision.

PropertySet

Property Set Name:	IE_Revision_Export_PS
Description:	
Scope of Property Set:	● Export ○ Import

Primary Ob...	Primary Object	Relation Ty...	Related Property ...	Property A...
CLASS	IE4_InheritRevision	PROPERTY	last_mod_date	DO
CLASS	IE4_InheritRevision	PROPERTY	object_name	DO
CLASS	IE4_InheritRevision	PROPERTY	ie4_STATUS_MAP	DO
CLASS	IE4_InheritRevision	PROPERTY	object_string	DO
CLASS	IE4_InheritRevision	PROPERTY	item_id	DO
CLASS	IE4_InheritRevision	PROPERTY	item_revision_id	DO

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The xsl stylesheet IE_Revision_Obsolete.xsl:

```
<?xml version="1.0" ?>
<xsl:stylesheet version="1.0"
    xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
    xmlns:plm="http://www.plmxml.org/Schemas/PLMXMLSchema"
    xmlns:crf="http://ExternalFunction.setFile"
    xmlns:msxsl="http://exslt.org/common"
    xmlns:str="http://exslt.org/strings">

    <xsl:output method="text" omit-xml-declaration="yes" indent="no"/>

    <xsl:template match="/">
        <!-- This XSL is designed to create an IPS loadfile for Revisions to set the Creation Date to the 5th October 1976 -->
        <!-- Header line for IPS loadfile -->
        <xsl:text>!~ItemID~RevID~CreateDate~Folder~FolderType</xsl:text>
        <xsl:text>&#10;</xsl:text>
        <!-- Only traverses Revisions whose status is Obsolete -->
        <xsl:for-each select="plm:PLMXML/plm:ProductRevision/plm:UserData/plm:UserValue[@title='ie4_STATUS_MAP' and @value='Obsolete']">
            <xsl:call-template name="Rev_Out">
            </xsl:call-template>
        </xsl:for-each>
    </xsl:template>

    <xsl:template name="Rev_Out">
    <!-- Outputs the Item ID -->
        <xsl:variable name="ID" select ="..//plm:UserValue[@title='item_id']/@value"/>
        <xsl:value-of select="$ID"/>
        <xsl:text>~</xsl:text>
        <!-- Outputs the Revision No -->
        <xsl:variable name="REV" select ="..//plm:UserValue[@title='item_revision_id']/@value"/>
        <xsl:value-of select="$REV"/>
        <xsl:text>~</xsl:text>
        <!-- Sets the date -->
        <xsl:text>05/10/1976 00:00:00~Obsolete Create Date~IE4_TeamFolder</xsl:text>
        <xsl:text>&#10;</xsl:text>
    </xsl:template>
</xsl:stylesheet>
```

This is uploaded to TC using the following syntax from a TC sourced cmd:
plmxml_tm_edit_xsl -u=*userid* -p=*password* -g=dba -transfermode=IE_Revision_Export_Obsolete -action=attach -xsl_file=IE_Revision_Obsolete.xsl

To test, create a new session of TC and export 2 revisions, where one of them is Obsolete:

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The resultant xml file is transformed by the xsl to produce a text file which only lists obsolete revisions:

```
2011007571-02-0 - SCRAP.xml ☒

1    !~ItemID~RevID~CreateDate~Folder~FolderType
2    2011007571~02~05/10/1976 00:00:00~Obsolete Create Date~IE4_TeamFolder
3
```
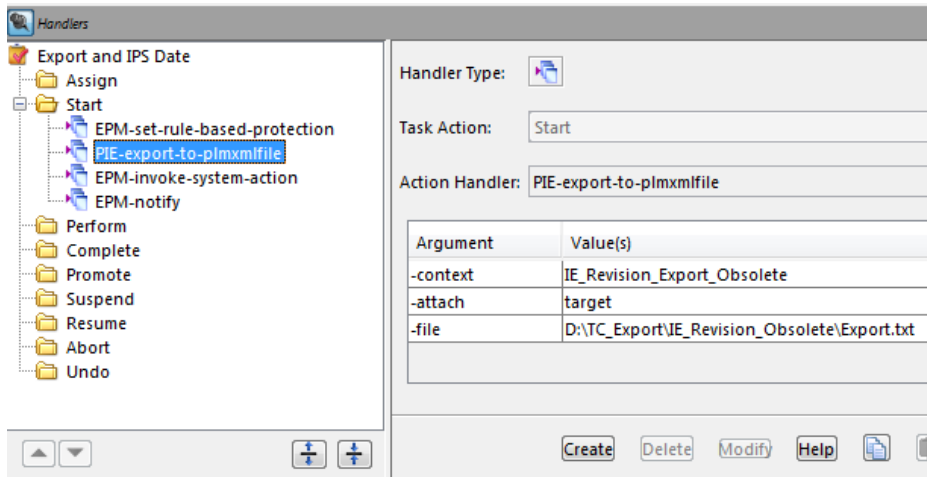
Note: The xsl adds the header line and we have added folder instructions for IPS to be able move it.

Without the xsl applied to the xml, the file would like this:

```
2011007571-02-0 - SCRAP.xml ☒   2011008643-01-0 - NEW SW PROJECT TEST.xml ☒

1    <?xml version="1.0" encoding="utf-8"?>
2    <!-- GENERATED BY: PLM XML SDK 7.0.4.411 -->
3    <PLMXML xmlns="http://www.plmxml.org/Schemas/PLMXMLSchema"
4     language="en-us" time="15:55:33" schemaVersion="6" author="Teamcenter V11000.2.2.21_20160906.00 -
         ' date="2018-06-14">
5    <Header id="id1" traverseRootRefs="#id2 #id8" transferContext="IE_Revision_Export"></Header>
6    <Product id="id7" name="NEW SW PROJECT TEST" subType="IE4_Item" accessRefs="#id4" productId="2011008643">
7    <Description>From SolidWorks</Description>
8    <ApplicationRef application="Teamcenter" label="iFNAAGO2I$oLQB" version="iFNAAGO2I$oLQB"></ApplicationRef></Product>
9    <ProductRevision id="id2" name="NEW SW PROJECT TEST" subType="IE4_ItemRevision" accessRefs="#id4" masterRef="#id7"
         revision="01">
10   <Description>From SolidWorks</Description>
11   <ApplicationRef application="Teamcenter" label="iFNAAGO2I$oLQB" version="1CPAAGO9I$oLQB"></ApplicationRef>
12   <UserData id="id3">
13   <UserValue title="last_mod_date" value="2018-06-14T13:08:15Z"></UserValue>
14   <UserValue title="object_name" value="NEW SW PROJECT TEST"></UserValue>
15   <UserValue title="ie4_STATUS_MAP" value="Obsolete"></UserValue>
16   <UserValue title="object_string" value="2011008643-01-0 - NEW SW PROJECT TEST"></UserValue>
17   <UserValue title="item_id" value="2011008643"></UserValue>
18   <UserValue title="item_revision_id" value="01"></UserValue></UserData></ProductRevision>
19   <ProductRevision id="id8" name="NEW SW PROJECT TEST" subType="IE4_ItemRevision" accessRefs="#id4" masterRef="#id7"
         revision="00">
20   <Description>From SolidWorks</Description>
21   <ApplicationRef application="Teamcenter" label="iFNAAGO2I$oLQB" version="iJEAAGO2I$oLQB"></ApplicationRef>
22   <UserData id="id9">
23   <UserValue title="last_mod_date" value="2018-06-14T13:04:55Z"></UserValue>
24   <UserValue title="object_name" value="NEW SW PROJECT TEST"></UserValue>
25   <UserValue title="ie4_STATUS_MAP" value=""></UserValue>
26   <UserValue title="object_string" value="2011008643-00-0 - NEW SW PROJECT TEST"></UserValue>
27   <UserValue title="item_id" value="2011008643"></UserValue>
28   <UserValue title="item_revision_id" value="00"></UserValue></UserData></ProductRevision>
29   <AccessIntent id="id4" ownerRefs="#id5" intent="reference"></AccessIntent>
30
31   <ApplicationRef application="Teamcenter" label="AuFAAAAEI$oLQB" version="AuFAAAAEI$oLQB"></ApplicationRef>
32   <UserData id="id6">
33   <UserValue title="dbms" value="1"></UserValue></UserData></Site></PLMXML>
```
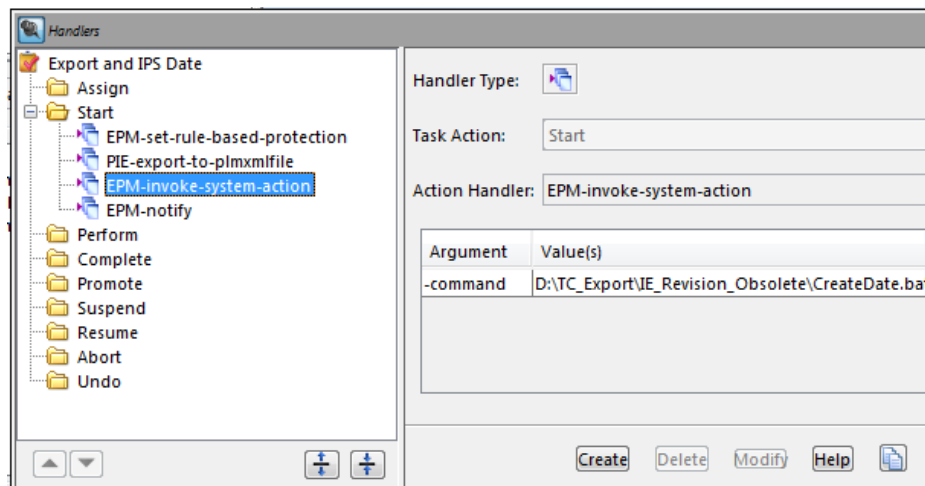
3 Workflow

3.1 PIE-export-to-plmxmfile

- 'Context' is the transfermode created earlier
- 'file' is a location on the server
- Result is an Export.txt file that has been formatted by the xsl mentioned earlier
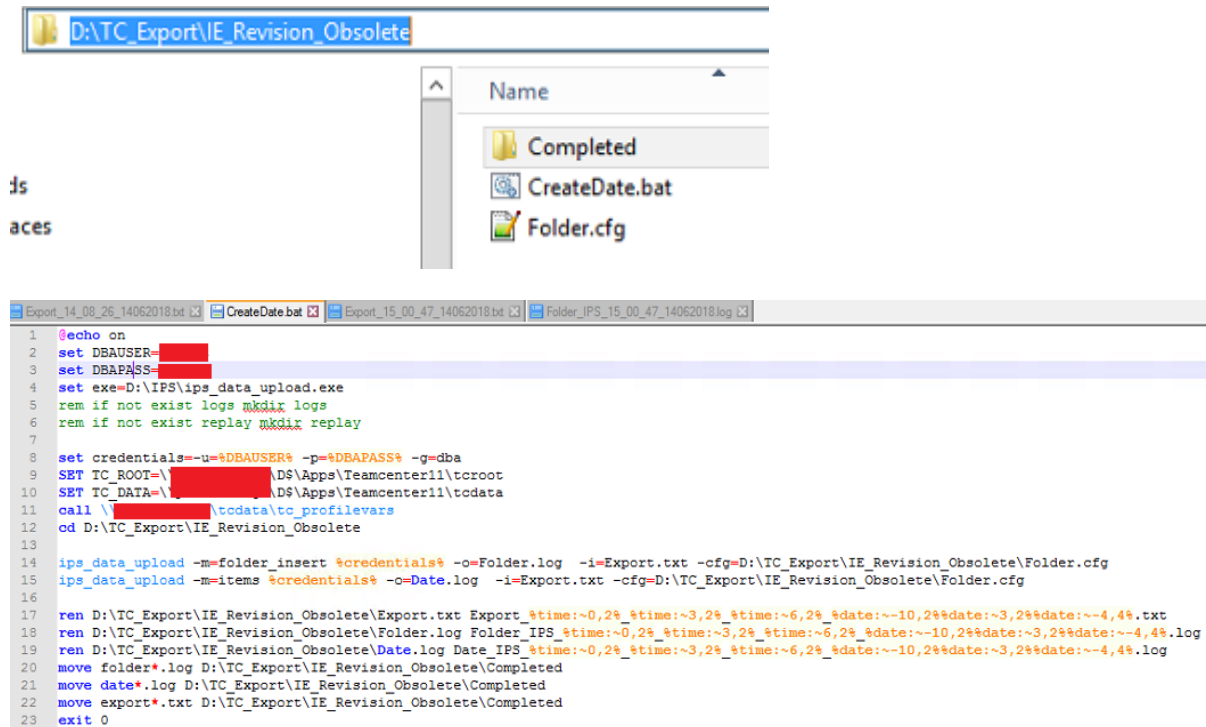
3.2 EPM-invoke-system action

- CreateDate.bat is located on the server

The workflow can be a bit slow to complete as its waiting for the .bat file to complete.

3.3   IPS

The bat file does the following:
1.   Sets the credentials for IPS (-u= -p= -g=dba)
2.   Sets the TC cmd source information (TC_ROOT, TC_DATA & tc_profilevars)
3.   IPS in folder mode to copy the Item to a folder listed in the file:

4.   IPS in ITEMS mode to set the Create Date listed in the Export:

5.   Renames the Export.txt, Folder.log & Date.log files to include the time and date and moves them to the Completed folder:
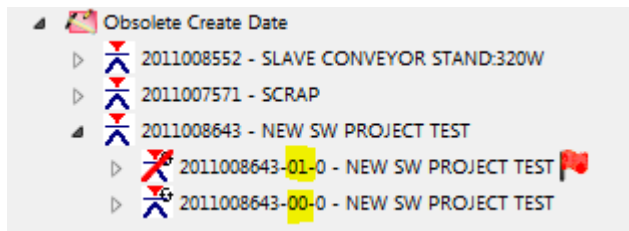
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3.4   Result

In Teamcenter, the Item has been moved to the Obsolete Create Date folder and its date has been set to an early date so that it is listed 1st:

The user DBA also receives an email notifying them that a revision has been through this workflow.

No doubt this could be re-written to use PLMXML to set the date and move to a folder, but we have IPS and I find it very easy to use.

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