

SAP BusinessObjects Process Control 3.0 – How-To Choose the Best Technique for Master Data Uploads



Applies to: SAP BusinessObjects Process Control 3.0

Summary

This documentation describes the challenges that have to be considered in the situation when a customer has to decide if data should be uploaded in Process Control or directly maintained in the Process Control application.

Author: Juergen Moeller
Company: RIG EMEA
Governance, Risk, and Compliance
SAP BusinessObjects Division
Created on: 22 December 2009

Version 1

Document History

Document Version	Description
------------------	-------------

1.00	First official release of this guide
------	--------------------------------------

Typographic Conventions

Type Style	Description
<i>Example Text</i>	Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Cross-references to other documentation
Example text	Emphasized words or phrases in body text, graphic titles, and table titles
Example text	File and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.
Example text	User entry texts. These are words or characters that you enter in the system exactly as they appear in the documentation.
<Example text>	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
EXAMPLE TEXT	Keys on the keyboard, for example, F2 or ENTER.

Icons

Icon	Description
	Caution
	Note or Important
	Example
	Recommendation or Tip

Table of Contents

1.	Business Scenario	1
2.	Background Information	1
3.	Prerequisites	1
4.	Step-by-Step Procedure	2
	4.1 Starting Point for Upload Decision.....	2
	4.2 Influencing Factors.....	2
	4.3 Different Approaches	3
	4.4 Example for a Continuous Upload	4
	4.5 What can go wrong	5
	4.6 Conclusion.....	5
5.	Comments and Feedback	5
6.	Copyright	7

1. Business Scenario

To upload information to SAP BusinessObjects Process Control 3.0 is indicated if it saves time and money in comparison to enter the information manually. The first challenge is to make a decision which approach makes sense under which preconditions.

2. Background Information

The idea to upload data in a tool that supports the process of maintaining an internal control system comes from the initial situation when the Sarbanes-Oxley-Act was instituted. In the beginning there was no tool available and the timeline to become SOX compliant was very challenging. So the only alternative was to start the documentation in some Microsoft Excel based solutions. Therefore the companies provided templates that could be filled in with the purpose to later on upload them as soon as a tool is available. This concept was meant for an initial upload.

The concept of uploading information is also a good alternative in case of a migration from one tool to another.

Later on some companies decided to do also uploads in the productive phase which definitely is the most complex approach

This document describes which effort and which activities are necessary for the different approaches for upload master data.

3. Prerequisites

The reason why a tool like Process Control is preferred to Microsoft Excel based solutions is auditability:

- An **audit trail** traces changes
- The **authorization concept** prevents unauthorized changes
- In a tool there are **preventative mechanisms and checks** that ensure data consistency
- A **time concept** implemented in the program logic ensures the history is archived

To support all these requirements regarding auditability it requires more than an upload tool that can be used to produce csv-files that can be uploaded into Process Control.

The conclusion is that the upload tool has to be tested and certified by an auditor to fulfill these requirements.

4. Step-by-Step Procedure

The following steps will describe the key considerations if the decision has to be made if master data should be uploaded or documented directly in Process Control.

4.1 Starting Point for Upload Decision

There are several situations that indicate a decision for or against an upload approach:

1. Starting from scratch:
When companies had to start their documentation for SOX compliance there was no tool like Process Control available and not to lose time they had to start their documentation in Excel or in tools that could have been made available quickly at this point in time.
This indicated that the transfer of the data to the final tool had to be fast to save time as this is a prerequisite to continue the documentation in Process Control. It is also important to be able to start evaluations such as tests and assessments in Process Control as soon as possible.
2. Migration from another solution:
In this case existing data should not be lost. Depending on the complexity and the data model that was used in the old solution master data has to be extracted and prepared for an upload in the new table structures. An alternative could be to only start with the current master data and to archive the history to avoid the complex migration.
3. Usability and easiness of work:
Some customers prefer to do the documentation in Excel templates and to upload them afterwards in the tool. This has advantages regarding the number of users that work with the tool, it makes offline documentation possible. Copy and paste as well as tracking changes are functionalities that are not as comfortable in the tool as in Excel. So it is understandable that if the documentation is easier in Excel an upload approach seems appealing.

4.2 Influencing Factors

This chapter highlights the factors that could be helpful to decide about the approach:

1. Auditability:
One important factor is whether complete audit trails for master data changes are required. If yes, then it makes the upload option less attractive as all the capabilities of Process Control to keep an audit trail with the standard SAP table logging and control access through the SAP authorization concept on object and transaction level, have to be rebuilt outside of Process Control.
2. Data consistency:
SAP Process Control supports data consistency with preventative checks and control mechanisms. It also supports a time concept and makes sure that data are entered in the right format and that all mandatory fields are populated with data. To be sure that the uploaded data does not violate these rules, the same checks have to be implemented to ensure data consistency during an upload. Not only these checks can be skipped by uploading data but also the time concept regarding validity of objects and dependencies to other objects can be overruled.
For this reason the same logic has to be implemented for the upload preparation to make sure that no data is accidentally overwritten and no evaluation is made invalid by changing the status of the documentation at the time the evaluation took place, e. g. a control design assessment on a control documentation that was overwritten by the uploaded data.
That also indicates that upload and maintenance directly in Process Control may lead to inconsistencies and rules in that process are required to avoid them.

3. SAP support:
SAP is only responsible for errors caused by using standard functionality. Problems that occur because of mistakes with the upload have to be either completely avoided or controls like intensive testing, quality assurance and a decent backup concept have to be established. That means that the costs to prevent the additional risks that come with the usage of upload tools have to be considered. Errors that persisted for a while are really hard to fix in this case and SAP support is not responsible for rebuilding data consistency.
4. Adjustments in Process Control:
Changes to the data model in Process control may have to be reflected in the design of the upload tool and the upload templates. Such changes may come with installation of Process Control support packages. Changes in texts that are customized for the selection in dropdown fields have to be reflected in the upload templates. The upload process has to be adjusted and intensively tested every time a change has happened in Process Control. .
5. User training:
The upload topic has always to be included in the documentation process and the training for the users that are involved in this process. As positions change the knowledge transfer has to be carefully provided.
6. Permanent internal support:
From the experience with projects that uploaded data, the availability of a permanent support team was especially necessary for error correction that was caused by technical and organizational issues with the upload.

4.3 Different Approaches

In the last chapter we had a look at the challenges that are involved with the upload in comparison with the pure documentation in Process Control. This section explains the different approaches and their advantages:

1. Documentation directly in Process Control:
Process Control has been designed for this approach. Full support is ensured if the standard user interface is used and no additional processes are needed except from user training before go-live. All mechanisms that ensure auditability, data consistency and user authorization are built in the functionality of Process Control. Users are responsible for their documentation from the beginning on and if they want to use Excel they could also cut and paste the information and do the quality assurance at the same time.
2. Initial upload:
The initial upload happens at a time the customizing has been done and the data structures that will be used are decided. After this upload the documentation has to be adjusted or completed by the business users according to their roles and authorization. With the first change in the system and performing the evaluations the responsibility is clearly handed over from the user that uploaded the information to the responsible business user.
3. Performance testing:
To identify performance issues at a very early point in time, it is recommended to upload mass data that can easily be created outside Process Control and that is similar to the data structures and data volumes that will be later on used in production. This can be combined with upload tests in the quality system environment to prepare the upload to the productive system.
4. Continuous upload, e.g. in a phased rollout:
Data is uploaded also after the go-live. One possible example is the synchronization of master data

that is first created in a process modeling tool like e. g. ARIS in the direction of Process Control. In this case documentation is downloaded and then uploaded into Process Control. Another example is that the documentation is maintained in templates and handed over for subsequent upload. This is the most complex scenario as it requires not only a tool that supports capabilities of Process Control, such as auditability, restricted access based on authorization, data consistency checks and time concept for master data, but also a process that ensures that nothing goes wrong in this procedure. The next section comes with an example how continuous upload was organized in rather large companies.

4.4 Example for a Continuous Upload

As the continuous upload is the most complex scenario this section provides a real life example from a large SAP customer showing what was necessary to establish such a process:

1. Upload tool development:
Database experts that have been additionally experts in the Process Control application developed a database. This database had the capabilities to concatenate data from multiple upload requesters to one upload file. It contained preventative checks on data consistency such that data uploads could be performed at well defined points in time.
2. Development of templates:
Users have been provided with templates that could be used for the documentation. For using these templates documentation has been provided how to use them and what kind of data can be entered. These templates also had to have some check mechanisms included.
3. Development of a check tool for the users:
This check tool had to be used by the users to check the data in the template before they sent it to the central upload team
4. Request for upload:
A process had to be setup to make sure that the requester was authorized to request the upload and that all evaluations, such as tests and design assessments, on the relevant objects have been completed or the deletion of the workflows and technical cases, that link to all the information collected in these evaluations, were requested with the upload request.
5. Activities to prepare the upload:
This process also included that the request itself had to be printed and stored into folders and the responsible for the upload had to archive and sign the upload requests. Then all upload requests had to be consolidated in one upload file and checks had to be implemented to ensure the data consistency. Afterwards the database logic transformed the upload data to a csv-file that could be uploaded. The upload had to be checked first in a client copy of the productive client on the quality assurance system. Workflows and cases for evaluations, that have been already sent out for objects that have been replaced by the uploaded ones, had to be deleted as the results of these assessments and tests probably no longer matched with the uploaded information. Structures and validities of objects had to be verified before the upload. These activities for preparation had to be tested and documented in the copy of the productive client. All this documentation as well as the csv-file had to be stored as a kind of audit trail in the data base tool. If the upload worked without problems in the quality assurance system the same procedure had to be performed in production and documented in the database.
6. Activities after the upload to production:
To make sure that the upload was performed in a correct way the requester of the upload had to test and confirm this. This information also had to be documented.

4.5 What can go wrong

This section summarizes typical issues that occurred during uploads:

1. Faulty csv-file:
Even if the upload file was tested successfully by the upload tool there is still the possibility that the upload fails at a certain point i.e. due to special characters that were not included in the previous consistency checks etc. The upload program for Process Control checks every data record regarding the consistency and then it writes it to the database. The consequence is that the upload can be incomplete and only the data records that have been successfully checked by the upload program are in the database.
2. Uploading the corrected csv-file with all data again:
As some objects already have been uploaded they will be partly overwritten but the assignments to other objects will be uploaded additionally and the assignment information will be stored in the database table multiple times. This also causes inconsistencies in the data.
3. Double entries:
If the requester of an upload manually started the documentation of objects directly in Process Control, that were also requested for upload, this leads to the situation that an administrator has to do an analysis which of the both redundant object has to be deleted and to do the necessary corrective actions.
4. Upload starting with wrong object IDs:
Before an upload the responsible for the upload has to check which numbers in the external number ranges have been already used. If already existing numbers are used by mistake that leads to severe data inconsistencies as some data are overwritten and also the assignments to other objects. If such kinds of mistakes are not detected fast a lot of work can be lost and the corrective actions that are necessary then will be very time consuming.

4.6 Conclusion

To decide for an upload approach does not necessarily save time and money. It requires especially experienced and trained resources, a lot of preparation also regarding the organizational process, and a lot of coordination regarding this process.

An initial upload is recommended if data is already available in a format that can be easily transformed to an upload file and the preparation time is not longer then to do it manually in Process Control. There is also the aspect of quality assurance that has to be considered. To ensure data consistency a lot of checks and documentation outside Process Control are necessary. The organizational process is time and resource consuming and if something goes wrong the analysis and the corrective actions require a lot of time and trained resources. Even if the process is setup to be rather safe with all the steps in the non-productive environment, the effort to keep the test client clean after failed attempts requires a lot of work.

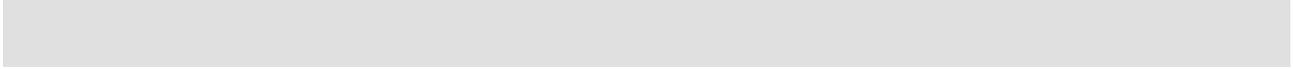
Unless a well designed process is established and trained resources are available the master data upload comes with considerable risk for data consistency and is not recommended. Having taken all these considerations into account manual maintenance of master data may appear in many cases as the better option.

5. Comments and Feedback

Your feedback is very valuable and will enable us to improve our documents. Please take a few moments to complete our feedback form. Any information you submit will be kept confidential.

You can access the feedback form at:

http://www.surveymonkey.com/s.aspx?sm=stdoYUlaABrbKUBpE95Y9g_3d_3d



6. Copyright

© 2009 SAP AG. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP AG. The information contained herein may be changed without prior notice.

Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors.

Microsoft, Windows, Outlook, and PowerPoint are registered trademarks of Microsoft Corporation.

IBM, DB2, DB2 Universal Database, OS/2, Parallel Sysplex, MVS/ESA, AIX, S/390, AS/400, OS/390, OS/400, iSeries, pSeries, xSeries, zSeries, System i, System i5, System p, System p5, System x, System z, System z9, z/OS, AFP, Intelligent Miner, WebSphere, Netfinity, Tivoli, Informix, i5/OS, POWER, POWER5, POWER5+, OpenPower and PowerPC are trademarks or registered trademarks of IBM Corporation.

Adobe, the Adobe logo, Acrobat, PostScript, and Reader are either trademarks or registered trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Oracle is a registered trademark of Oracle Corporation.

UNIX, X/Open, OSF/1, and Motif are registered trademarks of the Open Group.

Citrix, ICA, Program Neighborhood, MetaFrame, WinFrame, VideoFrame, and MultiWin are trademarks or registered trademarks of Citrix Systems, Inc.

HTML, XML, XHTML and W3C are trademarks or registered trademarks of W3C®, World Wide Web Consortium, Massachusetts Institute of Technology.

Java is a registered trademark of Sun Microsystems, Inc.

JavaScript is a registered trademark of Sun Microsystems, Inc., used under license for technology invented and implemented by Netscape.

MaxDB is a trademark of MySQL AB, Sweden.

SAP, R/3, mySAP, mySAP.com, xApps, xApp, SAP NetWeaver, and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other product and service names mentioned are the trademarks of their respective companies. Data contained in this document serves informational purposes only. National product specifications may vary.

These materials are subject to change without notice. These materials are provided by SAP AG and its affiliated companies ("SAP Group") for informational purposes only, without representation or warranty of any kind, and SAP Group shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP Group products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

These materials are provided "as is" without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement.

SAP shall not be liable for damages of any kind including without limitation direct, special, indirect, or consequential damages that may result from the use of these materials.

SAP does not warrant the accuracy or completeness of the information, text, graphics, links or other items contained within these materials. SAP has no control over the information that you may access through the use of hot links contained in these materials and does not endorse your use of third party web pages nor provide any warranty whatsoever relating to third party web pages.

Any software coding and/or code lines/strings ("Code") included in this documentation are only examples and are not intended to be used in a productive system environment. The Code is only intended better explain and visualize the syntax and phrasing rules of certain coding. SAP does not warrant the correctness and completeness of the Code given herein, and SAP shall not be liable for errors or damages caused by the usage of the Code, except if such damages were caused by SAP intentionally or grossly negligent.

<https://www.sdn.sap.com/irj/bpx/grc>