

Documentary Batches – A New Feature to Ensure Batch Traceability

Applies to:

SAP ERP release => ECC 5.00 (ERP 2004).

Summary

Documentary batches can be used to ensure that partial stocks of a material are traceable, without it being necessary to manage the stock of a material in batches. Learn how documentary batches can improve traceability of your material across your production process.

Authors: Dr. Uwe Dittes (Development Manufacturing),
Jürgen Wettengl (Application Solution Management Manufacturing [ASM]).

Company: SAP AG

Created on: 17 April 2007

Table of Contents

Applies to:	1
Summary.....	1
Why Use Batch Traceability?.....	3
SAP Batch Where Used List.....	3
Purpose	3
Prerequisites for batch where used list usage	4
Selected features of the batch information cockpit (BIC) that support batch traceability	4
Top Down analysis.....	4
Bottom up analysis.....	5
BIC: Display batch related objects	5
Why Use Documentary Batches?.....	6
Integration	8
Constraints	9
Prerequisites and Customizing settings for documentary batches.....	9
Customizing for Documentary Batches.....	10
Customizing for the Batch Where-Used List.....	10
Activate Batch Where-Used List.....	10
System message attributes	11
Working with documentary batches.....	11
Enter documentary batches	11
Summary.....	12
Related Content.....	12
Copyright.....	13

Why Use Batch Traceability?

In various industries, homogenous partial quantities of a material or product (batches) are used throughout the logistics quantity and value chain. This is due to the following:

- Legal requirements (for example, the guidelines set out by GMP (Good Manufacturing Practice) or the EU 178/2002) “.... requires the maintenance of strict batch traceability through the manufacturing process from raw material through to finished product.”
- Regulations on hazardous material
- Defect tracing, callback activities, and regression requirement

SAP Batch Where Used List

Purpose

The existing batch where-used list:

- Determines how a batch is created and used in production through various stages of production
- Displays the results in a list.

You can use the batch where-used list:

- To determine in which other batches a specific batch was used.
- To determine from which other batches a batch was created.

This is important in case complaints and questions about product safety arise (if the composition of semi-finished and finished products has to be documented across all production levels).

In addition to batches, the system also displays production orders, manufacturing orders, deliveries, subcontract orders, and vendor batches. This allows you to trace a batch's progress through each stage of production. The list is used for all plants, but can also be restricted to certain plants.

You can use the Batch Information Cockpit (BIC) to display the batch where-used list and batch-related objects.

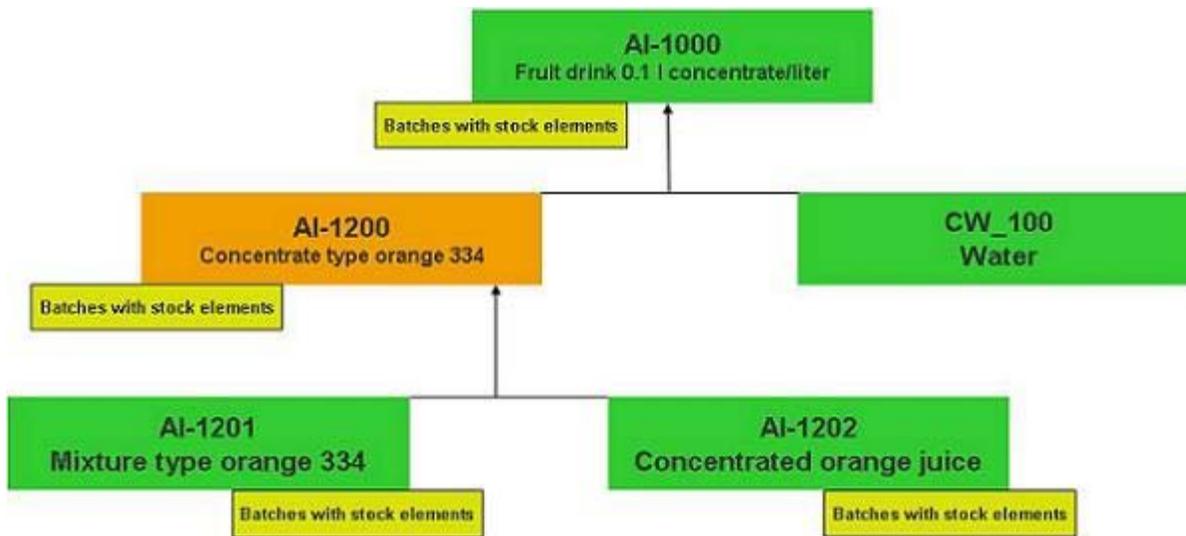


Figure 1: Batch where-used list (example)

Prerequisites for batch where used list usage

Some prerequisites must be fulfilled:

- You must manage all materials that are part of the batch where-used list in batches (control key in the material master).
- You must be able ensure batch traceability for specific materials in the production chain.
- The stock of these materials must not necessarily be managed in batches.
- If possible, do not change existing processes and master data.

Selected features of the batch information cockpit (BIC) that support batch traceability

Top Down analysis

You can use the top down analysis to determine all batches that were used in one or more stages of production for the specified batch:

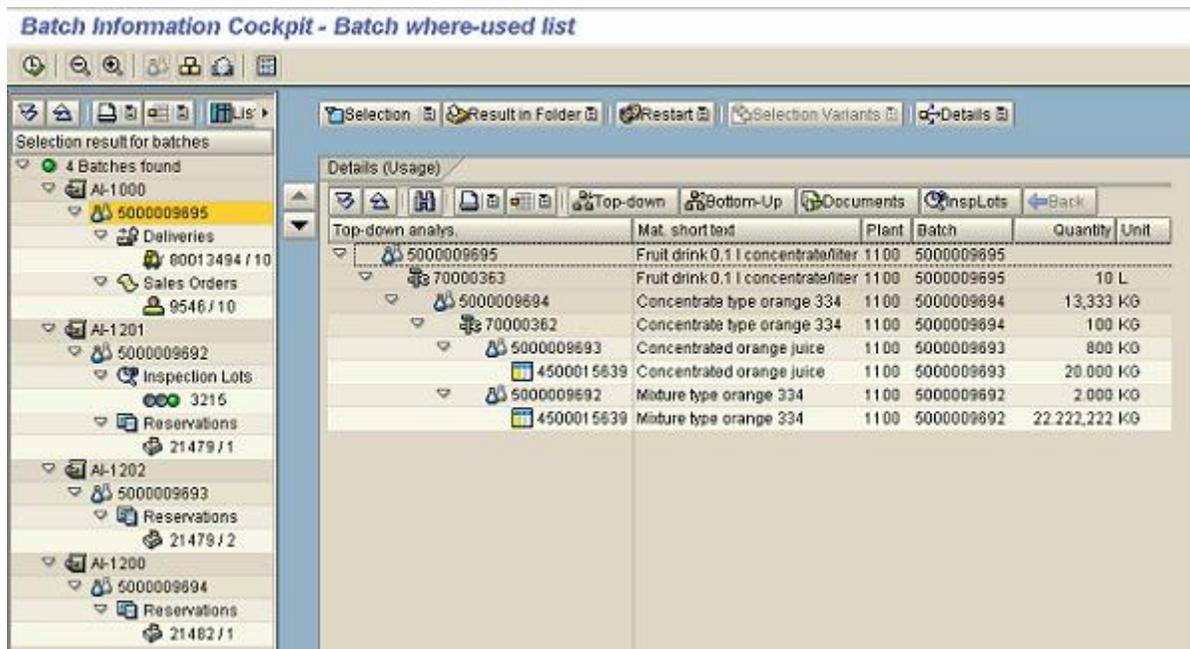


Figure 2: Top down analysis (example)

Bottom up analysis

This function determines all batches for which the specified batch was used in one or more stages of production:

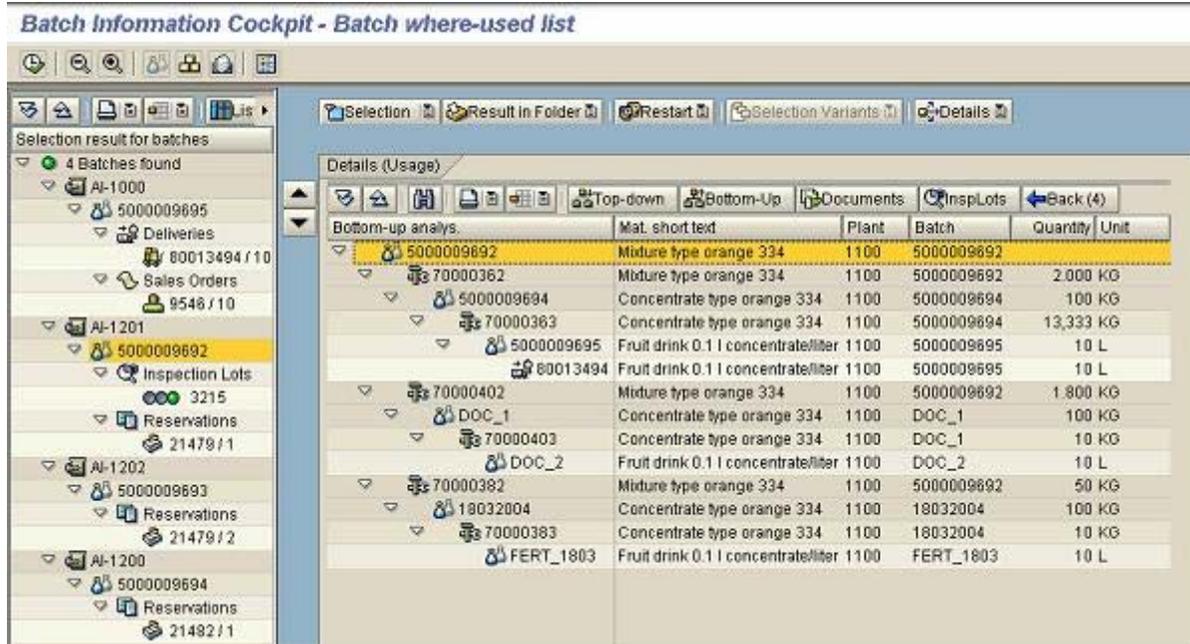


Figure 3: Bottom up analysis (example)

BIC: Display batch related objects

This function in the Batch Information Cockpit (BIC) allows you to determine all related objects of a batch (such as deliveries, sales orders, inspection lots, etc.):

Batch Information Cockpit - Batch where-used list

Selection result for batches	Top-Down/Bottom-Up	Material type	Last goods rec.	Batch status	Classification status
4 Batches found					
AI-1000					
5000009695		FERT	12.03.2004		
Deliveries					
80013494 / 10					
Sales Orders					
9546 / 10					
AI-1201					
5000009692		ROH	12.03.2004		
Inspection Lots					
3215					
Reservations					
21479 / 1					
AI-1202					
5000009693		ROH	12.03.2004		
Reservations					
21479 / 2					
AI-1200					
5000009694		HALB	12.03.2004		
Reservations					
21482 / 1					

Figure 4: Batch related objects (example)

Why Use Documentary Batches?

Legal requirements, customers, and the company name require strict quality measures and therefore batch traceability.

Logistic processes do allow you to use the existing batch management functionalities of SAP – however, these are normally not used due to increased costs and complexity (entry, inventory, etc.) for the data capture in the system.

The consumed batches can only be dedicated to the produced batches in recognizing certain variations.

For example use cases for documentary batches:

- Consumption of pipeline material (e.g. water)
- Consumption of material from a tank
- Automated production processes.

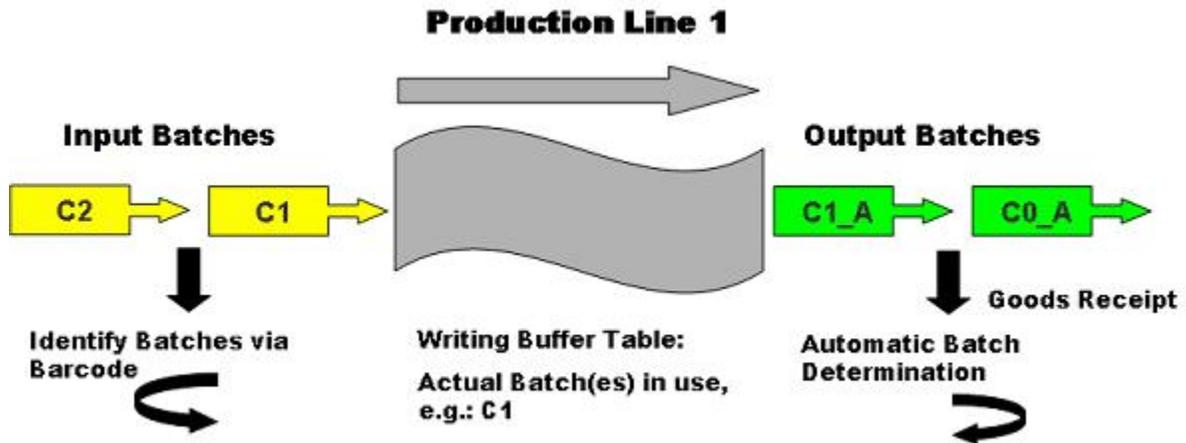


Figure 5: Automated production process (example)

You can use documentary batches to ensure that partial stocks of a material are traceable, without it being necessary to manage the stock of a material in batches.

Documentary batches support most of the functions that the existing SAP batch management solution offers:

	Existing Solution	Documentary Batches
Batch Master	+	+
Batch Where-Used List	+	+
Batch Determination	+	-
Batch Status Management	+	-
Batch Number Assignment	+	+
Stock at Batch Level	+	-
Batches in APO	+	-
Batch Derivation	+	+
Batch Information Cockpit	+	+
Work list Folder	+	+

Figure 6: Available functionality for documentary batches compared with existing solution

In comparison to “real” batches (existing solution), documentary batches have the following advantages:

- A lower level of complexity
- Less effort involved in entering batches
- Lower costs for inventory management and confirmation.

“Collect only as much data as is necessary to meet legal and customer requirements”

In the event of recall campaigns, you can use the existing batch where-used list (transaction MB56) for affected documentary batches.

- In the production process, you can use a combination of “real” and documentary batches. For example, you can use ingredients that must be managed in batches in the production of foods, but use documentary batches for the containers (packaging).
- You can use documentary batches if you do not need to have batch-related stock information in the system. Documentary batches are not suitable for use with dangerous goods or narcotics.

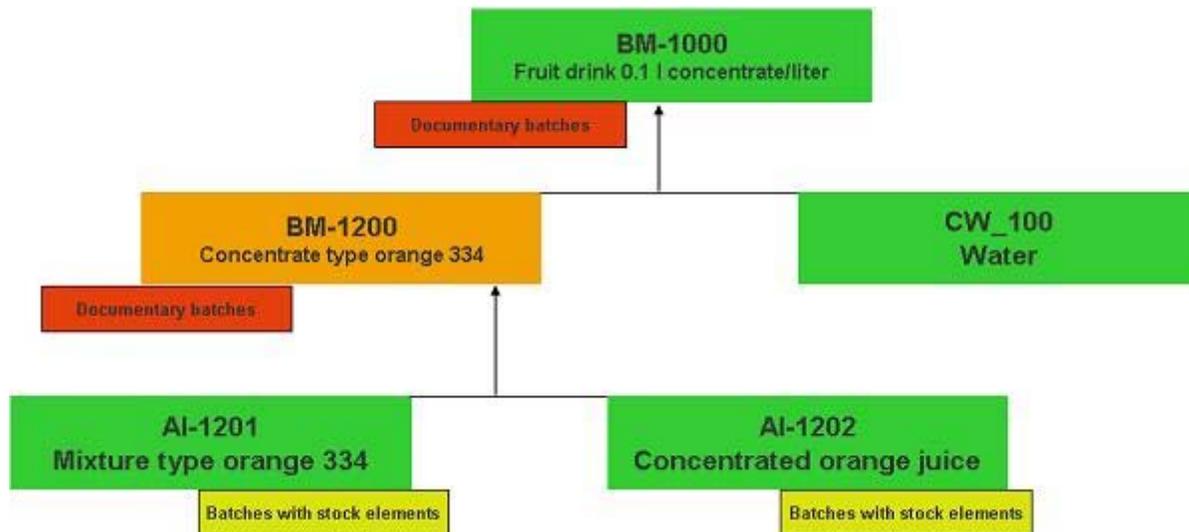


Figure 7: Batch where-used list with documentary batches (example)

Integration

You can only use some of the current batch functions for documentary batches. You can use the batch where-used list (transaction MB56) and the batch master (MSC1N, MSC2N and MSC3N).

Functions for "Real" Batches	Used for Documentary Batches?
Batch master	Yes , but only to a limited extent. (Can be automatically created by the system on goods receipt.)
Where-used list	Yes
Batch determination	No
Batch status management	Yes , but no link to stock
Batch numbering	No . You can enter batch numbers manually in the dialog; automatic entry is only possible using the Business Add-In (BAI) VBD0CUBATCH.
Batch stock	No . Stock only at storage location level - no stock at batch level.
Batches in other SAP products (for example, SAP APO)	No . No integration with other SAP products such as SAP APO, SAP CRM or SAP BW. (A material that is subject to <i>documentary</i> batch management requirement in SAP R/3 or ERP is treated as a material that is not subject to batch management requirement in other SAP

	products.)
Derivation of batch data	Yes. (Derivation of batch data from documentary batches requires a batch master record.)
Batch Information Cockpit	No, or only in the work list
Batch work list	Yes
Class assignment	Yes

Figure 8: Overview: Batch vs. Documentary Batch

If a material is subject to batch management requirement but the material type requires the entry of documentary batches, the material is still subject to batch management requirement, in other words, the batch management requirement has priority.

In contrast to “real” batches, the following constraints apply to documentary batches:

- No availability check for documentary batches at batch level
- No QM check for documentary batches at batch level
- No functions in batch status management (in other words, no stock postings take place when the batch status changes)
- Documentary batches are not saved in the documents themselves
- Documentary batches cannot be entered in transfer posting or stock transfers
- Upon goods receipt of documentary batches, the system can automatically create a batch master record in the background (if you have made this setting in Customizing). This record does not contain the country of origin, which is copied from the purchase order for "real" batches.

When a batch master data record is automatically created, the system generates only one entry in the corresponding table MCHA/MCH1. In other words, the batch master is created without additional data. You can use the enhancement SAPLV1ZN to fill the batch master fields or the batch classification.

Constraints

The following constraints apply to the use of documentary batches:

- For materials that are subject to documentary batch management requirement, it must be possible to distinguish between the batches (for example, using bar codes or labels).
- Neither serial numbers, nor handling units are supported.
- You cannot enter documentary batches in RFID transactions.
- You cannot enter documentary batches in Task and Resource Management (TRM).
- Neither Kanban nor DI production back flush from SAP APO are supported.
- Existing IDocs have not been enhanced (for example, shipping notification/delivery message type DESADV, basic type DELVRY*; goods movements IDoc message type MBGMCR, basic type MBGMCR*).
- If you work with RFID or TRM functions, or call IDocs/BAPIs, you can only book in documentary batches by calling up the RFC-capable function module VBDBDM_DATA_MAINTAIN_RFC beforehand or incorporating it into the process.

Prerequisites and Customizing settings for documentary batches

If you want to use documentary batches, you must make the following settings in Customizing:

Customizing for Documentary Batches

You make the necessary settings in the implementation guide (IMG) for Logistics - General (LO) under *Batch Management -> Documentary Batches*.

- Activate general use

You activate the general use of documentary batches under Activate Documentary Batch.

- Define use per material type

You define the use of documentary batches per material type under *Define Entry per Material Type*. In this activity, you can also define for each material type, that the system automatically creates a batch master in the background when certain goods receipts are posted. You can also fill batch master fields or the batch classification using the enhancement SAPLV1ZN.

You only want to enter documentary batches for a particular material of material type HALB; therefore the setting per material type is too general for you. Therefore, you override the Customizing setting per material type using the BAdI VBDOCUBATCH and define this material in the BAdI method PRODUCT_CHANGE as subject to documentary batch management requirement. You should note that, in this case, you must still create an entry for the material type HALB in the Customizing activity *Define Entry per Material Type* and select *No Documentary Batches*, so that the BAdI is executed.

- Define use for process steps

You define the use of documentary batches in selected process steps under *Define Entry for Manual Process Steps*. You can override these settings in the BAdI VBDOCUBATCH. You can set whether, and in which process steps, (for example, goods receipt for external procurement with transaction MIGO) the user must enter documentary batches.

- Business Add-In (BAdI)

If necessary, implement the Business Add-In *Documentary Batch* (VBDOCUBATCH) under *BAdI: Documentary Batch*:

- You can allow the use of documentary batches for certain materials or plants or override the Customizing settings for the material type. (Method PRODUCT_CHANGE).
- You can override the Customizing settings for the process steps. (Method PROZESS_CHANGE).
- You can allow the BAdI to assign batch numbers. (Method DOCUBATCHES_PRELOAD).
- You can check the admissibility of the documentary batch numbers entered. (Method BATCH_NUMBER_CHECK)
- You can override the Customizing setting for the material type for automatic creation of a batch master in the background. In other words, you can decide whether a batch master record is created, depending on the process step and additional information (order number and so on). (Method BATCH_MASTER_CREATE)

Customizing for the Batch Where-Used List

Activate Batch Where-Used List

If you use documentary batches, you must activate the where-used list for the plant (*Batch Management -> Batch Where-Used List -> Make Settings for Batch Where-Used List*):

- Select *BaWU Synchron. Posting*, so that a where-used list is generated when material documents are posted. From a technical point of view the result is that the batch where-used file is updated when the goods movement is posted. In contrast to "real" batches, documentary batches have no link to the material document. The reference to the document only exists while you are working in a transaction, which is why the batch where-used file must be updated at the same time as the goods movement posting.

- The indicator *BaWU deactivated* must not be selected, because batch where-used records are only created for material document items with a plant that allows the creation of the file.

System message attributes

In batch management, under *Define Attributes of System Messages*, you can also make settings for the message VBDOCUBATCH 116 ('the confirmation can only be saved in the goods movements' overview').

Working with documentary batches

You can enter document batches in the following process steps:

- Goods receipt for external procurement
- Goods receipt for subcontracting
- Goods issue for subcontracting
- Goods receipt from production
- Goods issue to production
- Picking delivery to customer

You can:

- Post materials that are subject to batch management requirement, documentary batches and materials that do not have to be batch managed in one document
- Enter multiple documentary batches per document item

If you have defined a quantity check in Customizing, the system checks whether you have correctly distributed the quantity to be posted, across documentary batches. (The quantity to be posted is not automatically distributed across documentary batches.)

You cannot change the unit of measure that is proposed by the application for the documentary batch.

Enter documentary batches

You must manually enter the batch number online. If it is possible to determine the batch number using a particular logic (e. g.: a combination of filling line and time stamp etc.), you can allow the system to enter this number using the BAdI VBDOCUBATCH.

1. Enter the documentary batch during the above mentioned process step.

If you want to enter more than one documentary batch, choose  *Detail: Documentary Batches*.

2. The system displays a dialog box. You can also enter multiple documentary batches on the *Batches* tab page. You have the following options:

- Choose  (*Append Line*), to add a line.
- Choose  (*Duplicate Line*), to copy lines.
- Choose  (*Check Entries*), to check whether the batch number entered is allowed. (This check is only carried out if you have implemented the method BATCH_NUMBER_CHECK in the Business Add-In VBDOCUBATCH.)

In Customizing, you can define the number of lines that the system proposes as a default on the detail screen. If you have made the necessary Customizing settings, the system also checks whether you have distributed the quantity to be posted correctly across the documentary batches. The system displays the result of this check in a message. You can define in Customizing that the system automatically creates a batch master record in the background on goods receipt.

3. Save your entries.

Summary

In various industries, homogenous partial quantities of a material or product (batches) are used throughout the logistics quantity and value chain.

The existing batch where-used list:

- Determines how a batch is created and used in production through various stages of production
- Displays the results in a list

You can use documentary batches to ensure that partial stocks of a material are traceable, without it being necessary to manage the stock of a material in batches.

You can implement the new functionality parallel to the solution that is already available.

Related Content

- [Improvements of SAP ERP Batch Functionality \(LO-BM*\) Delivered with ERP 2004 and ERP 2005](#)
- [Improvements of Selected Applications for Production Planning and Control \(PP-*\) Delivered with ERP 2004 and ERP 2005](#)
- [Improvements of SAP ERP Applications for Process Industry \(PP-PI*\) Delivered with ERP 2004 and ERP 2005](#)

Copyright

© Copyright 2007 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, z/OS, AFP, Intelligent Miner, WebSphere, Netfinity, Tivoli, Informix, i5/OS, POWER, 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.