

Supply Chain Systems SAP R/3 Exercise¹

The major objective of this exercise is to familiarize you with the order processing function and basic navigation of the ERP market share leader, SAP R/3. Although we will be primarily dealing with the Sales and Distribution function within the Logistics module of the system, you should get a general understanding of how various modules are integrated.

The major exercise steps will be implemented using the International Demonstration and Education System (IDES) Model Company that has been set up in the R/3 System. The IDES corporate group is comprised of a number of companies that operate in various industries (automobile production, financial services, aerospace etc.) and countries (Germany, USA, Great Britain, Portugal etc.).

One of the tools you will use while working on the exercise is the SAP Help Portal, a resource that provides a complete knowledge base on the SAP R/3 system and the IDES Company. The URL to access the portal is <http://help.sap.com> (the relevant area within the portal is SAP R/3 Release 4.6B). The SAP Help Portal is one of the most valuable resources for learning about the system and finding answers to your questions.

Each group will submit a report that contains your answers to various questions as well as screenshots that you will create as you work through the exercise. A template for this report is located on our website.

GETTING STARTED

See the Getting Started section of the SAP Library in the Help Portal to learn the basics of the major elements, menus, and navigation of SAP R/3.

LOGGING ON

1. If you don't already have an ECS account, then you may log on to the ECS network using my account, i.e., username = scwebste, password = Azhl3Mrr.
2. Click on the SAP Logon Icon on the Desktop
3. Double click on the IDES icon in the SAP Logon box, wait for the system to connect to the server, and enter the following data:

Field	Data
Client	634
User	Sap634XX (XX = your group #) ²
Password	87654321 (if this doesn't work, try 12345678) ³

Confirm your entries  until the SAP Easy Access window appears.

¹ This exercise was created using materials provided by SAP AG and the exercise "Customer Order Process in SAP R/3" compiled by Bret J. Wagner and Ellen F. Monk at University of Delaware.

² Accounts range from Sap63401 to Sap63429.

³ You may be prompted to create a new password. If so, then type your original password in reverse order (e.g., 87654321 becomes 12345678, and vice-versa).

MAJOR EXERCISE STEPS

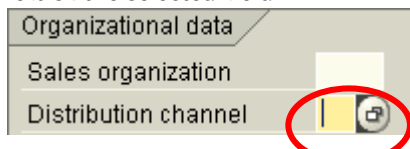
During the exercise you will complete the following steps:

1. Creating Customer Master Data
2. Creating and Processing Sales Order
 - 2.1. Performing material availability check and scheduling delivery
 - 2.2. Determining material price
3. Shipping
 - 3.1. Creating Outbound Delivery Document
 - 3.2. Picking (Creating Transfer Order)
 - 3.3. Posting Goods Issue
4. Billing
 - 4.1. Drafting Customer Invoices

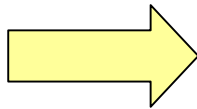
STEP 1: CREATING CUSTOMER MASTER DATA

From the SAP Library: Master Data in SAP R/3. The SAP Glossary defines Master Data as the data that remains the same over a long period of time and is needed often in the same form. Master Data contains information that embraces various business functions of the organization and involves all modules of SAP R/3 system. Different departments (modules) need to access Master Data and therefore different views (basic, sales, accounting, plant etc) have to be created while establishing a new master record.

As you will find out, SAP R/3 is a very number-oriented system in which every entity, attribute and transaction are assigned their own identification codes. In the following example and throughout the exercise you will encounter various codes and IDs that you will have to be comfortable with in order complete the exercise steps. Fortunately SAP R/3 provides an easy and effective means to manipulate system codes. For many data fields you can bring up a list of possible entries by clicking on the “ball” icon that appears to the left of the selected field:



For instance, you can look up possible codes and their brief descriptions for the Distribution Channel field:



The image shows a screenshot of the SAP 'Distribution channel (1)' list. The window title is 'Distribution channel (1) 35 Entries found'. The table below lists the entries:

SOrg.	DChl	Name
0001	01	Direct Sales
1000	10	Final customer sales
1000	12	Sold for resale
1000	14	Service
1000	16	Factory sales
1020	20	Store chain
1020	22	Industrial customers
1020	24	Pharm. customers
2000	10	Final customer sales
2000	12	Sold for resale
2200	10	Final customer sales
2300	10	Final customer sales
2400	10	Final customer sales
2500	10	Final customer sales

To get comfortable with this functionality, fill out the form in Appendix 1 while you are going through Step 1 of the exercise and enter the data into the exercise template (posted on class website).

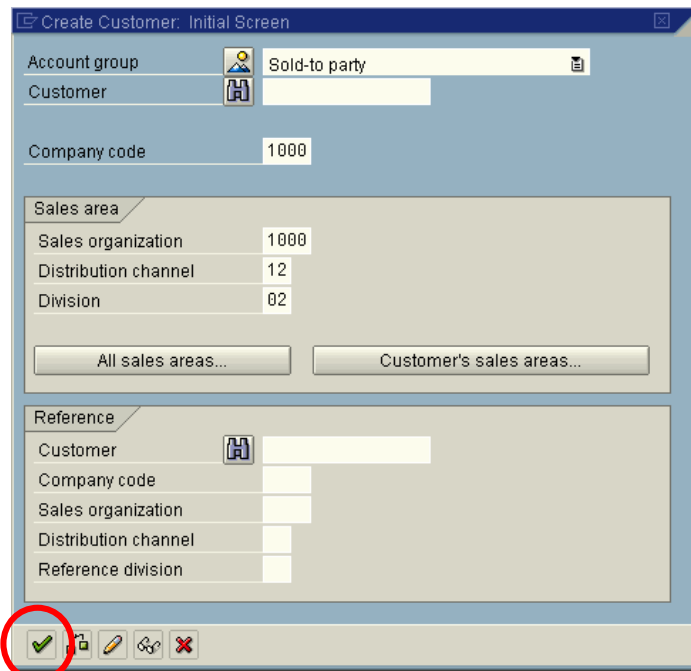
❖ Creating a master record for a sold-to party customer

Menu Path: Logistics – Sales and Distribution - Master Data – Business Partners – Customer – Create – Complete (xd01)⁴

CREATE CUSTOMER: INITIAL SCREEN

Field	Data
Account Group	Sold-to Party
Customer	000005XX01 (XX = your group number) ⁵
Company code	1000
Sales organization	1000
Distribution channel	12
Division	00

From the SAP Library: *Organizational levels in SAP R/3.* In the SAP R/3 System you can use several structures to represent the legal and organizational structure of your company. You can structure from the point of view of accounting, materials management, and sales and distribution. It is possible to combine these structures. The organizational structures form a framework in which all business transactions can be processed.



Business Partners in SAP R/3. A business partner can be a natural or legal person who is directly involved in a business transaction with you. The following partner functions are defined in the system: Sold-to party, Ship-to party, Payer, Bill-to party.

Sold-to Party. For the sold-to party, data on sales is necessary (for example, the assignment to a sales office or to a valid price list). In most cases, the company that places an order for the delivery of goods or the rendering of services is at the same time ship-to party, payer and bill-to party. For this reason in the SAP R/3 System the function sold-to party includes all these other functions.

⁴ xd01 is the transaction code for this window; entering the transaction code in the edit box in the top left of the window will take you to the (click the right arrow next to the save icon if the edit box is not displayed).

⁵ A default internal number assignment is defined for the account group of the sold-to party, however in our case we will assign the numbers manually.

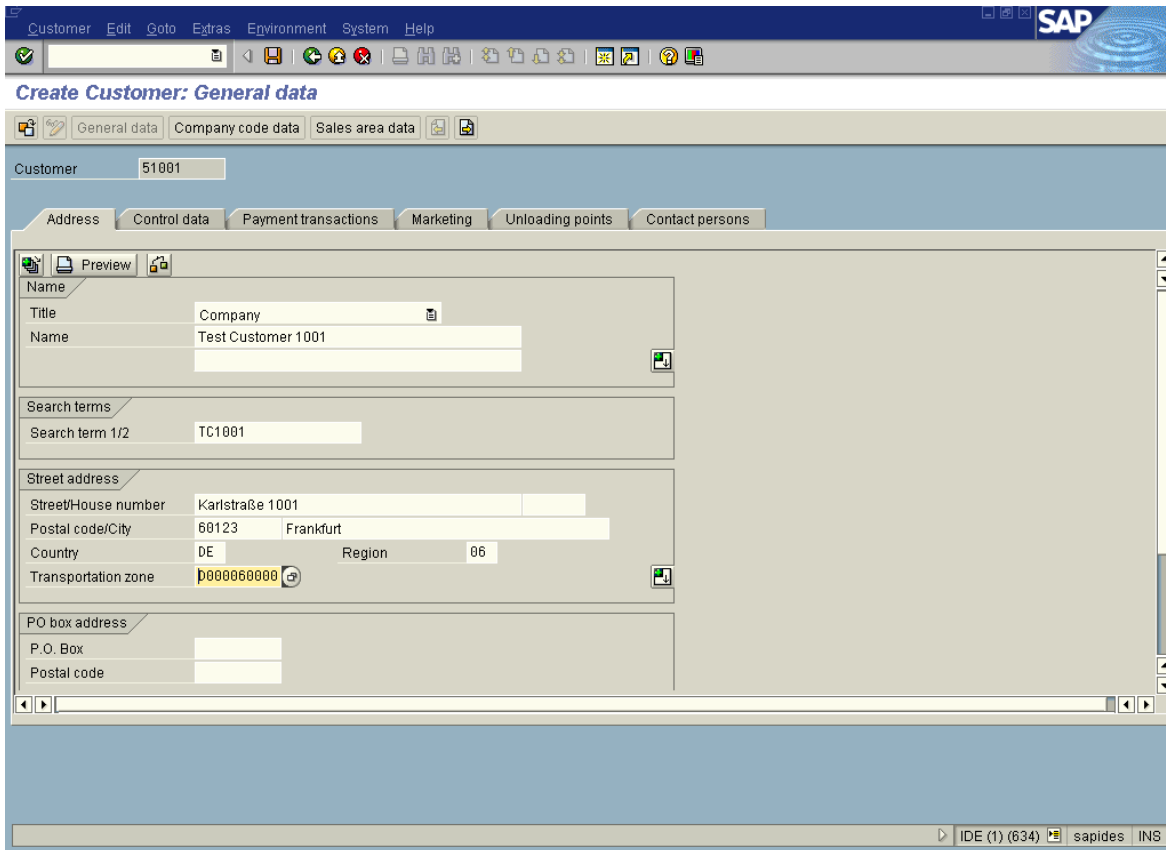
When you are done, make sure that the data is entered correctly and click on the Enter icon at the bottom of the screen (you can also hit Enter on the keyboard).

CREATE CUSTOMER: GENERAL DATA

Address Tab:

Field	Data
Title	Company
Name	Test customer XX (XX = your group number)
Search term (used for lookup)	TCXX
Street address	Karlstrasse XX01
Postal code/city	60123, Frankfurt
Country	DE
Region	06
Transportation zone	D000060000

See the screenshot below:



Paste a screenshot of the Address Tab into the exercise template.⁶

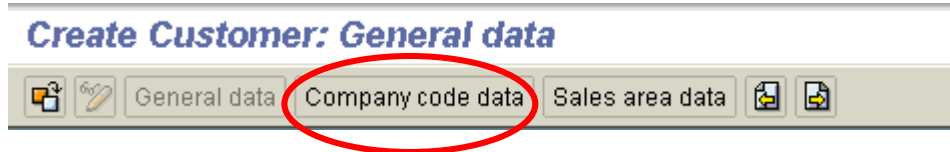
Control Data Tab:

Field	Data
VAT reg. number ⁷	DE637294761

⁶ Hit *Alt+Prt Scrn* to save a copy of the active window to clipboard, then paste into the exercise template.

Paste a screenshot of the Control Data Tab into the exercise template.

Switch to the Company Code Data views by clicking on the Company Code button on the top of the screen:



CREATE CUSTOMER: COMPANY CODE DATA

Account Management Tab:

Field	Data
Reconciliation Account ⁸	140000

Paste a screenshot of the Account Management Tab into the exercise template.

Switch to the Sales Area Data views by clicking on the Sales area button on the top of the screen:

CREATE CUSTOMER: SALES AREA DATA

Shipping Tab:

Field	Data
Delivery Priority	2
Shipping Conditions	02

Paste a screenshot of the Shipping Tab into the exercise template.

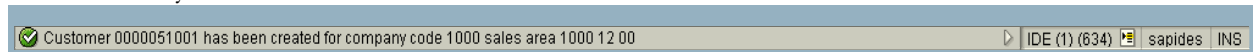
Billing Document Tab:

In the Tax Classification field of the output Tax table specify that this customer is tax-exempt⁹.

Paste a screenshot of the Billing Document Tab into the exercise template, then click the Save icon.



If the master record has been successfully created the following message will appear in the message line on the bottom of your screen:



To review a customer master record, use the following menu path:

⁷ The VAT registration number is used with EC for tax-exempt deliveries.

⁸ GL account to which transactions in the subsidiary ledgers (such as in the customer, vendor or assets areas) are automatically updated.

⁹ Use the look up function to find the code for this tax classification. You might need to adjust column width to be able to read column headings.

Menu Path: Logistics – Sales and Distribution – Master Data – Business Partners – Customer – Display – Complete (xd03)

STEP 2: CREATING AND PROCESSING A SALES ORDER

❖ Creating a sales order

Menu Path: Logistics – Sales and Distribution – Sales – Order – Create (va01)

CREATE SALES ORDER: INITIAL SCREEN

Enter the following data (see the screenshot below):

Field	Data
Order Type	OR
Sales Organization	1000
Distribution Channel	12
Division	00

Confirm your entries to proceed to the next screen:



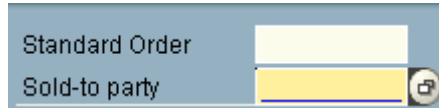
CREATE SALES ORDER: OVERVIEW

Sales Tab:

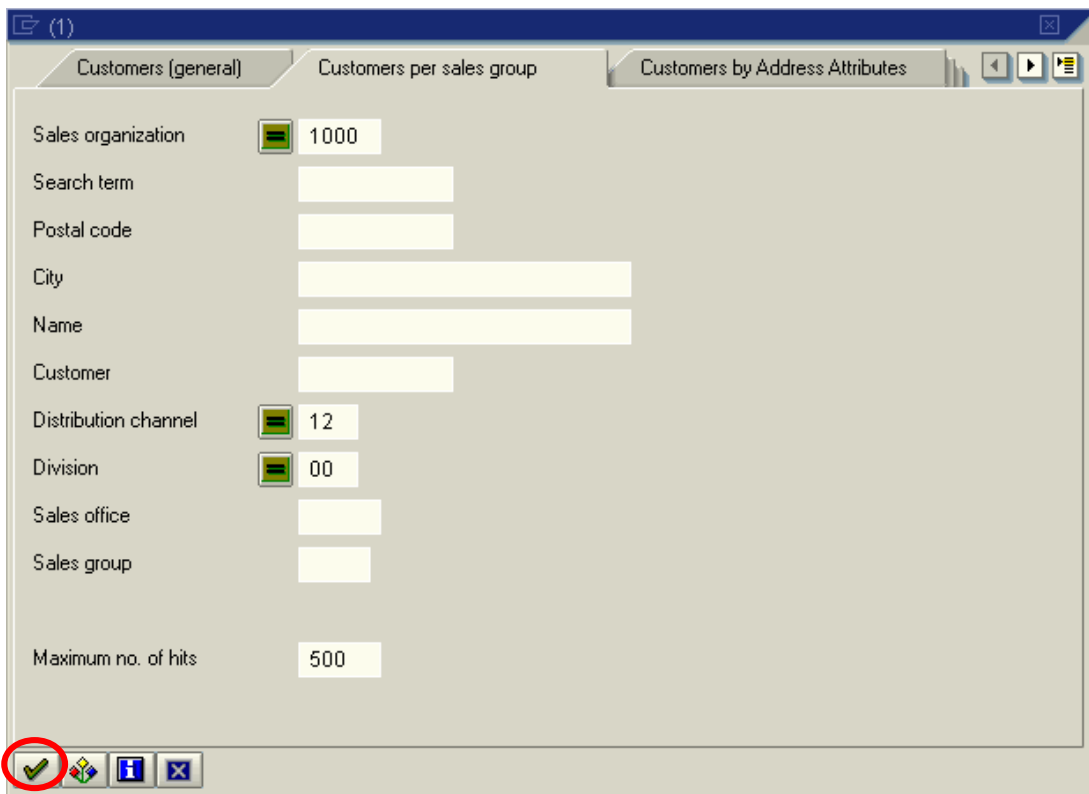
Enter the following data:

Field	Data
Sold-to-party	MOTORMARKT HEIDELBERG GMBH*

* To enter Sold-to-party you will need to know the customer ID number for MOTORMARKT HEIDELBERG GMBH. As noted above, you can find out an ID for a particular customer by using the lookup function (the “ball” icon):



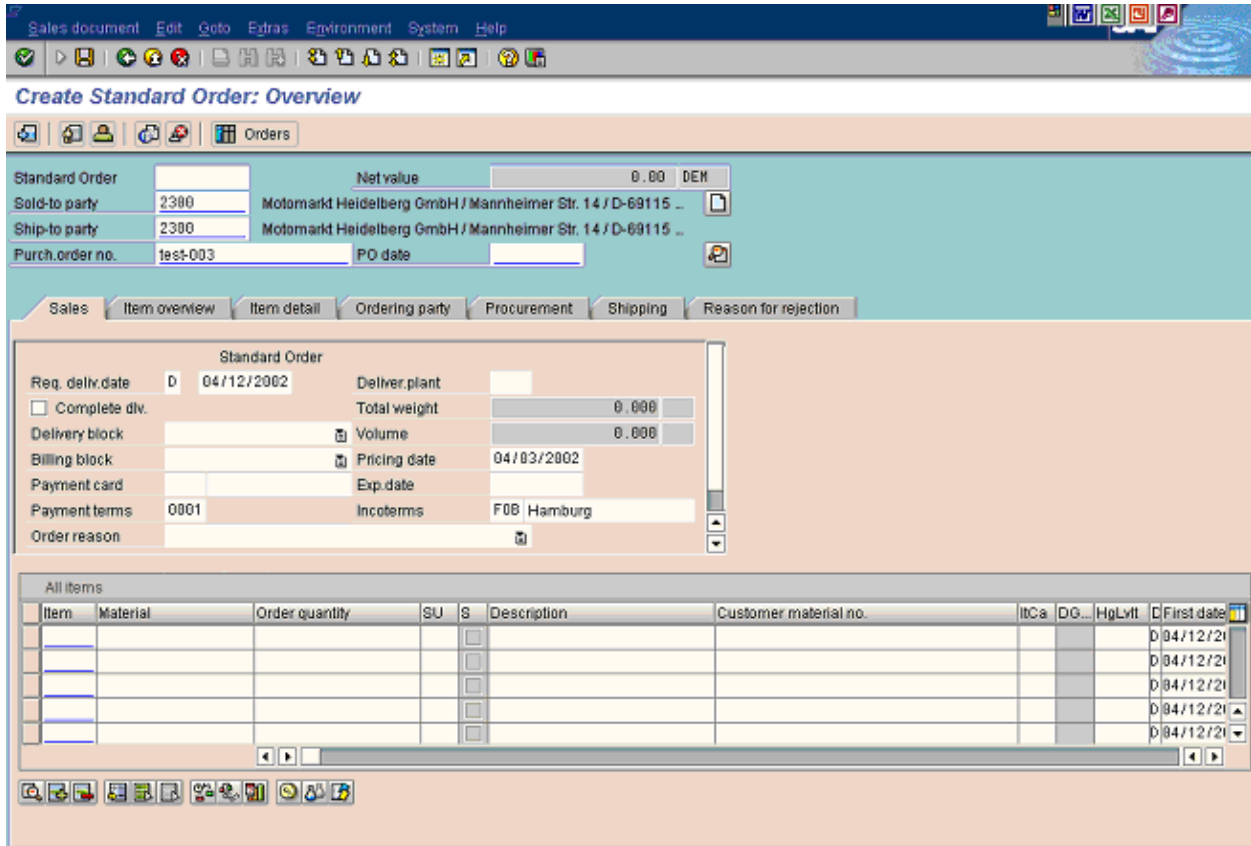
Besides basic lookup, this button allows you to perform system searches using various search parameters. The different tabs on the screen below are entry screens to search customers by sales group, addresses attributed, account group etc. We will do a search by sales group. Enter the following parameters and click the Enter icon:



The result of our search is a list of customers that are associated with sales group 1000 12 00. Find your customer and write the customer ID number here: _____.

Sales Tab:

Field	Data
PO number ¹⁰	Opm864-XX-01 (XX = your group number)
PO Date	Today's date
Req. delivery date	2 week in the future
Payment terms	0001
Incoterms	FOB



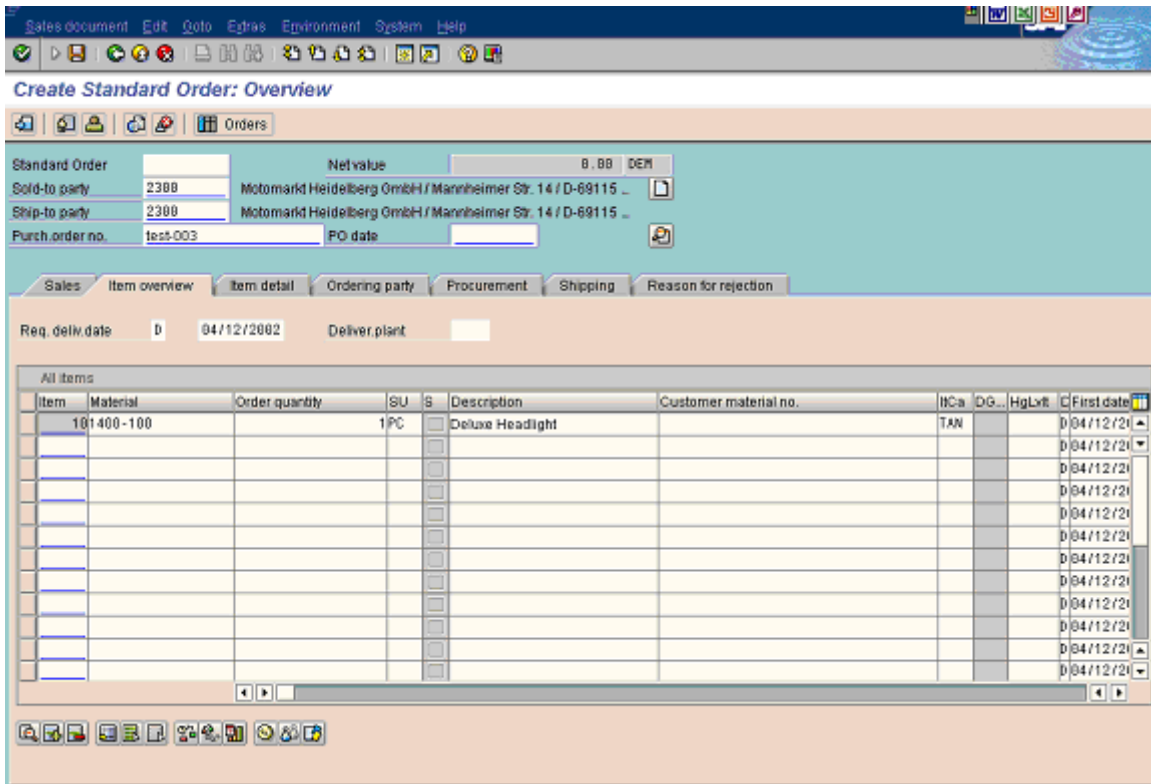
Confirm your entries and any dialog box that may appear




Item Overview Tab:

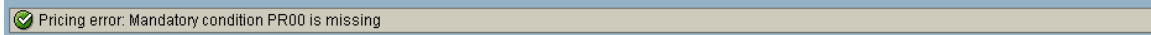
Field	Data
Material	1400-100
Order Quantity	1

¹⁰ PO number is a purchase order number provided by a customer that places the order. It is neither assigned by the system nor manually by an employee processing the order.



Confirm your entries .

The following error message should appear at the bottom of the screen:



From the SAP Library: The pricing procedure in SAP R/3 is carried out by applying pricing conditions to a particular sales document. Conditions essentially are a set of circumstances such as a particular customer, a particular product, order quantity, and a particular date, that determine the final price the customer gets. The system determines price based on the information stored in the condition master records.

For more on Pricing and Conditions see SAP Help Portal: SAP Library – Logistics – Sales and Distribution – Pricing and Conditions.

In our case Manual Pricing is set as a system default for new sales orders and condition PR00 is nothing more than just a price for a material that is being ordered. To correct the error and determine the price select Goto – Item – Conditions from the system menu (the upper line of the screen).

CREATE SALES ORDER: ITEM DATA

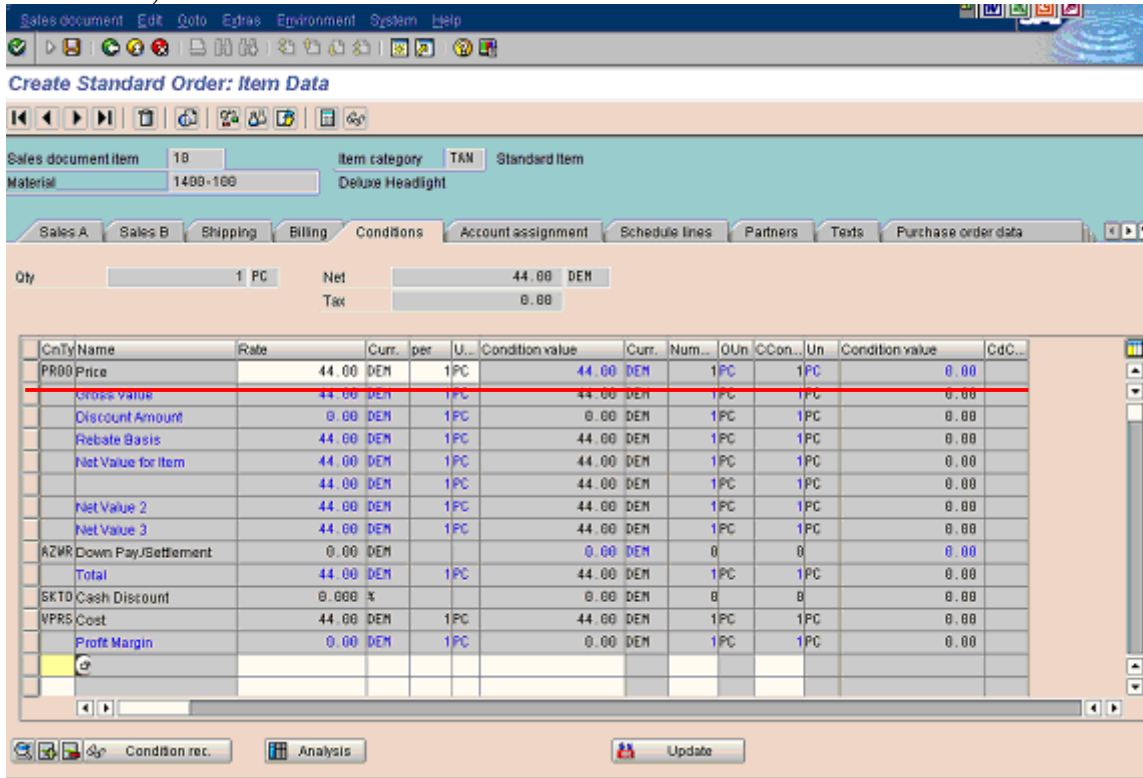
Conditions Tab (enter the following data in the first empty row of the conditions table):

Column	Data
CnTy (condition type)	PR00
Rate	44

Confirm your entries



Once you have confirmed the entries the Price row will be shifted over to the top of the table (see the screenshot below):

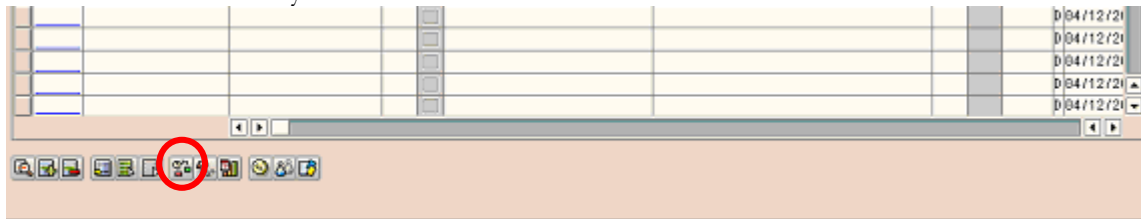


Select Goto – Overview to get back to the Create Sales Order screen.

CREATE SALES ORDER: OVERVIEW

Item Overview Tab:

Once you have entered the item data you are ready to perform the material availability check. To do so click on the Check Item Availability icon at the bottom of the screen:



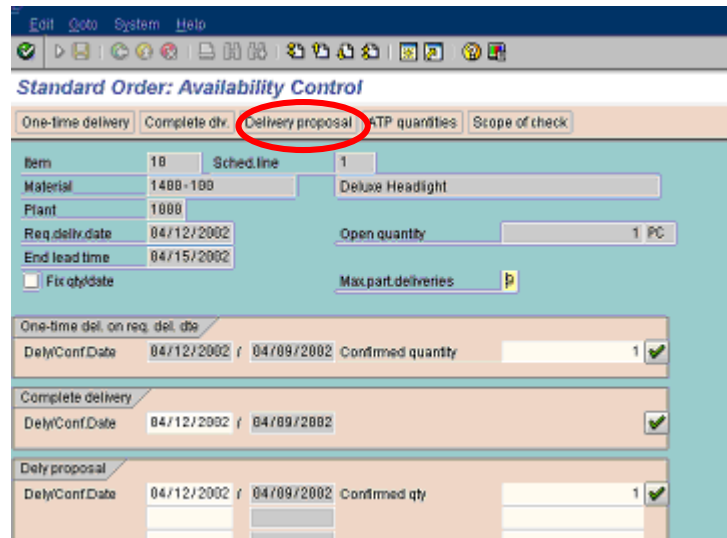
From the SAP Library: The availability check allows you to tell the customer if the product can be delivered on time. You can control the way the Availability check is performed by setting the Availability check field in the material master. There are two major Availability check methods:

- Check against planned independent requirements
- Available-to-promise (ATP) check


For more on the Availability Check in Sales and Distribution see SAP Help Portal: SAP Library –

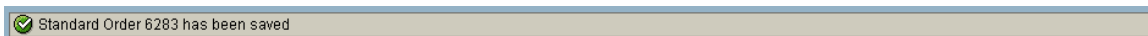
Logistics – Sales and Distribution – Availability Check and Requirements in Sales and Distribution.

If the system carries out an availability check and finds that there is insufficient stock for an order item to be delivered on the requested date, it displays a screen on which you can choose between several delivery proposals. In our case, we have enough material in stock and are able to meet the required delivery dates (see the screen below).




Click on the Delivery proposal icon (on the top of the screen) to return to the previous screen.

By performing the availability check we have made sure that the promised delivery dates can be met and now we can save the sales order by clicking on the Save icon . If everything is correct the system will save the order and generate an internal sales order number that will show up in the message line at the bottom of the screen:



Write your order number here: _____

Leave the order entry screen by clicking the Exit icon . Use the following path to review the sales order you created:

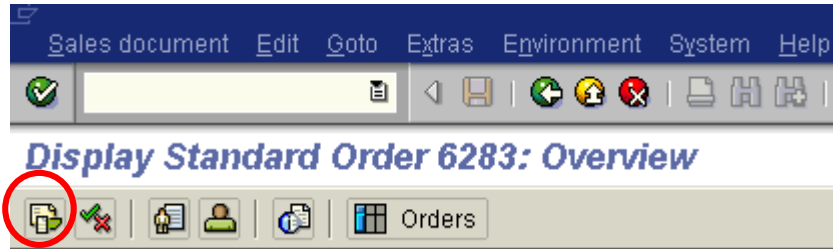
Menu Path: Logistics – Sales and Distribution – Sales - Order – Display (va03)

On the Sales Order initial screen, enter the sales order number (the one that was generated by the system when you saved the order) and hit Enter. In the Display mode you can look through all the views and tabs of the sales order but you won't be allowed to make any changes.

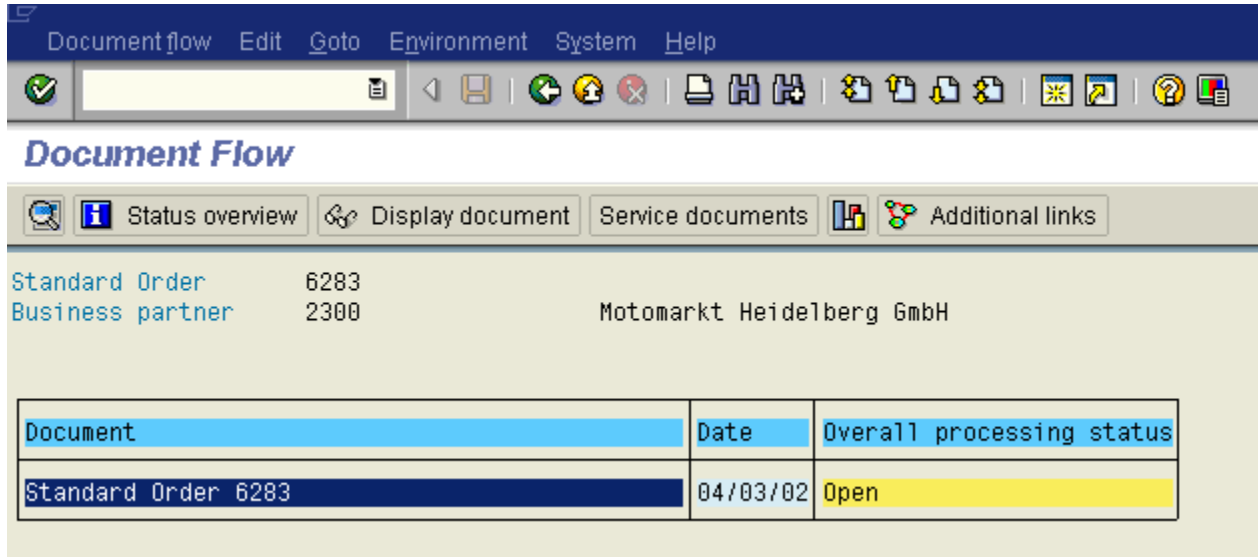
DOCUMENT FLOW

From the SAP Library: In SAP R/3 you can track the progress of the sales order by monitoring its Document Flow. The document flow shows how far the sales document has been processed and creates a business transaction out of consecutive documents in the system. From the document flow screen you can drill down into any of the documents displayed to see more details.

To bring up the Document Flow screen for a sales order click the Display Document Flow icon from the Display Standard Order mode:



Your screen will look like this:



Here you can see the number of the sales order, the date of creation, and the overall processing status.

Use the data below to create a sales order. All other fields can be left at the default values. Don't worry if you perform an availability check and discover that the product is not ready to ship.

Field	Data
Order Type	Standard Order
Sales Organization	Germany Frankfurt
Distribution Channel	Sold for Resale
Division	Cross-Division
Sold-to party	See Appendix 2
PO number	Opm864-XX-02 (XX = your group number)
Req. delivery date	1 week in the future
Material	Motorcycle Helmet – Standard ¹¹
Price	Use the standard price from the Material Master ¹²
Order Quantity	2

Deliverables:

- Paste a screenshot of the 'Create Standard Order: Overview - Item Overview Tab' into the exercise template

¹¹ Hint – use the search function (the “ball” icon) to find the material code.

¹² Hint – check under the Accounting 1 tab.

- Paste a screenshot of the 'Display Standard Order: Overview – Sales Tab' screen into the exercise template
- Explore the Shipping Tab of the Sales Order, collect the following data, and add to the exercise template

Field	Value
Delivery Date	
Material Availability Date	
Load Date	
Delivery Status	

- Explore the Material Master record of the Motorcycle Helmet – Standard (you will have to explore different tabs to answer all the questions – use Hamburg for plant-specific data such as MRP type, etc.), collect the following data, and add to the exercise template

What is the base unit of measure?	
What is the gross weight of the product?	
What is the MRP type?	
What is the reorder point?	
Is a planning fence established for this product?	
What is the procurement type?	
What is the current unrestricted-use stock?	

STEP 3: SHIPPING

From the SAP Library: Shipping is an important part of the logistics chain in which guaranteed customer service and distribution planning support play major roles. The shipping module supports the following functions, which include but are not limited to:

- Deadline monitoring for reference documents due for delivery (sales orders and purchase orders, for instance)
- Creating and processing outbound deliveries
- Planning and monitoring of worklists for shipping activities
- Monitoring material availability and processing outstanding orders
- Monitoring the warehouse's capacity situation
- Picking (with optional link to the Warehouse Management system)
- Packing deliveries
- Information support for transportation planning
- Support of foreign trade requirements
- Printing and transmitting shipping documents
- Processing goods issue
- Controlling using overviews of

For more on the Shipping function see SAP Help Portal: SAP Library – Logistics – Sales and Distribution – Shipping.

❖ Shipping a Sales Order


Menu Path: Logistics – Sales and Distribution – Shipping and Transportation – Outbound Delivery – Create – Single Document – With Reference to Sales Order (v101n)

CREATE OUTBOUND DELIVERY WITH ORDER REFERENCE

Enter the following data:

Field	Data
Order	The number of the sales order for Motormarkt Heidelberg GmbH from step 2 (you wrote down the order number earlier in this document)
Shipping point	1000
Selection date ¹³	Pick a date between the Material Availability Date and the Required Delivery Date from the Sales Order

The screenshot shows the SAP 'Create Outbound Delivery with Order Reference' screen. The menu bar includes 'Outbound delivery', 'Edit', 'Goto', 'Extras', 'Environment', 'Subsequent functions', 'System', and 'Help'. The toolbar contains various icons for navigation and actions. The main area has a title bar 'Create Outbound Delivery with Order Reference' and a sub-toolbar with options like 'With order reference' (selected), 'W/o order reference', and 'Post goods issue'. The 'Shipping point' field is set to '1000'. Below, the 'Sales order data' section contains fields for 'Selection date' (04/05/2002), 'Order' (6283), 'From item', and 'To item'. The 'Predefine delivery type' section has a 'Delivery type' field.

Confirm your entries  and proceed to the next screen. Explore different tabs and views of the next screen to get general understanding of what type of information is stored in an Outbound Delivery

document. Save the document 

If you did everything correctly the following message will appear on the bottom of the screen:

 Delivery 80006806 has been saved

¹³ For more information on the Selection Date field, select the field name and then click the Help icon.

Write down the delivery number here _____ (you will need it later). Paste a screenshot of the 'Create Outbound Delivery with Order Reference' screen into the exercise template.

The next step is to create a transfer order. Prior to processing the transaction, explore the SAP Help Portal and enter brief answers to the following questions in the exercise template¹⁴:

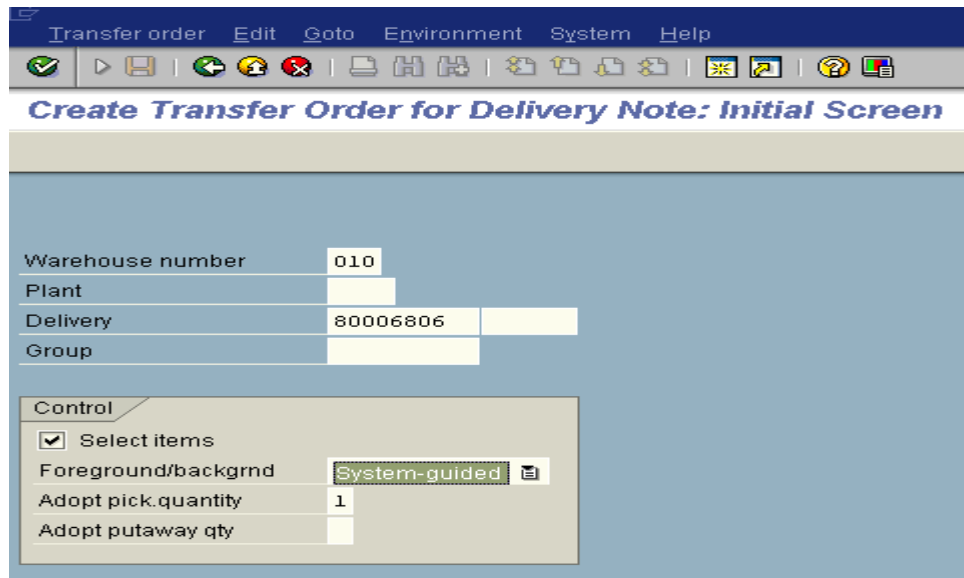
1. What functions do the transfer orders perform within the SAP R/3 system?
2. What is a necessary condition for a transfer order to be cancelled?


Menu Path: Logistics – Sales and Distribution – Shipping and Transportation – Picking – Create Transfer Order – Single Document (It03)

CREATE TRANSFER ORDER FOR DELIVERY: INITIAL SCREEN

Enter the following data:

Field	Data
Warehouse number	010
Delivery	No need to enter; this is the number that was created by the system when we saved the Outbound Delivery document.
Adopt pick. Quantity	1



Confirm your entries . This will take you to the next screen:

¹⁴ Hint: use the Find function in the SAP Help Portal to locate the required information (<http://help.sap.com>).

Transfer order Edit Goto Environment System Help


Generate TO item Stor.type srch seq.

Warehouse number 010 Delivery priority 1
 Delivery 80006806 Picking date 04/09/2002
 Shipping point 1000 Load date 04/10/2002

Active worklist Inactive items Processed items

Item	Material	Plant	SLoc	Batch	Picking quantity	S...	2..	T..
10	1400-100	1000	0001			1	PC	

Explore tabs and views of the Transfer Order screen to understand the overall structure of the document.

Save the document  and write down the transfer order number assigned by the system _____. Now go back to the sales order and display the document flow. At this point it should look like this:

Document Flow

Status overview Display document Service documents Additional links

Standard Order 6283
 Business partner 2300 Motomarkt Heidelberg GmbH

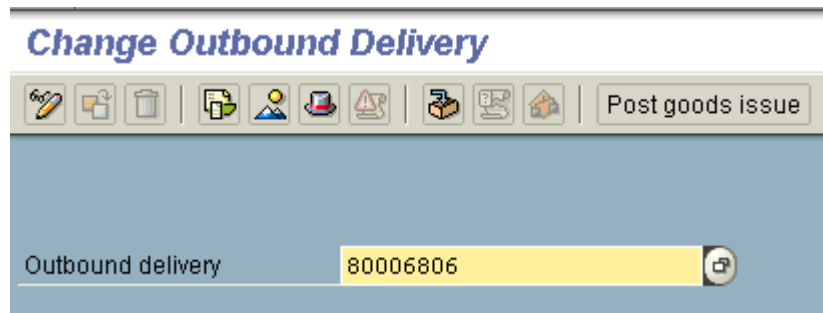
Document	Date	Overall processing status
Standard Order 6283	04/03/02	Completed
. Delivery 80006806	04/05/02	Being processed
.. WMS transfer order 532	04/05/02	Completed


Paste a screenshot of the 'Document Flow' screen into the exercise template.

The next step in the Shipping module of this exercise is 'post goods issue'. This is the last step before invoicing and loading the order on the carrier.

Menu Path: Logistics – Sales and Distribution – Shipping and Transportation – Outbound Delivery – Change - Single Document (vl02n)

CHANGE OUTBOUND DELIVERY



The system should automatically save the delivery number that was being processed last (if not just enter the delivery number that your recorded on this document a few pages back). Confirm your entries 

DELIVERY XXXXXXXX CHANGE: OVERVIEW

Click the 'Post goods issue' icon on the top of the screen.



If the posting was successful the system will generate a message:



Check the document flow for the sales order (at this point you should remember how to do that). The screen should look like this:

Document	Date	Overall processing status
Standard Order 6283	04/03/02	Completed
. Delivery 80006806	04/05/02	Being processed
.. WMS transfer order 532	04/05/02	Completed
.. GD goods issue:delvy 1000001	04/05/02	complete

Paste a screenshot of the 'Document Flow' screen into the exercise template.

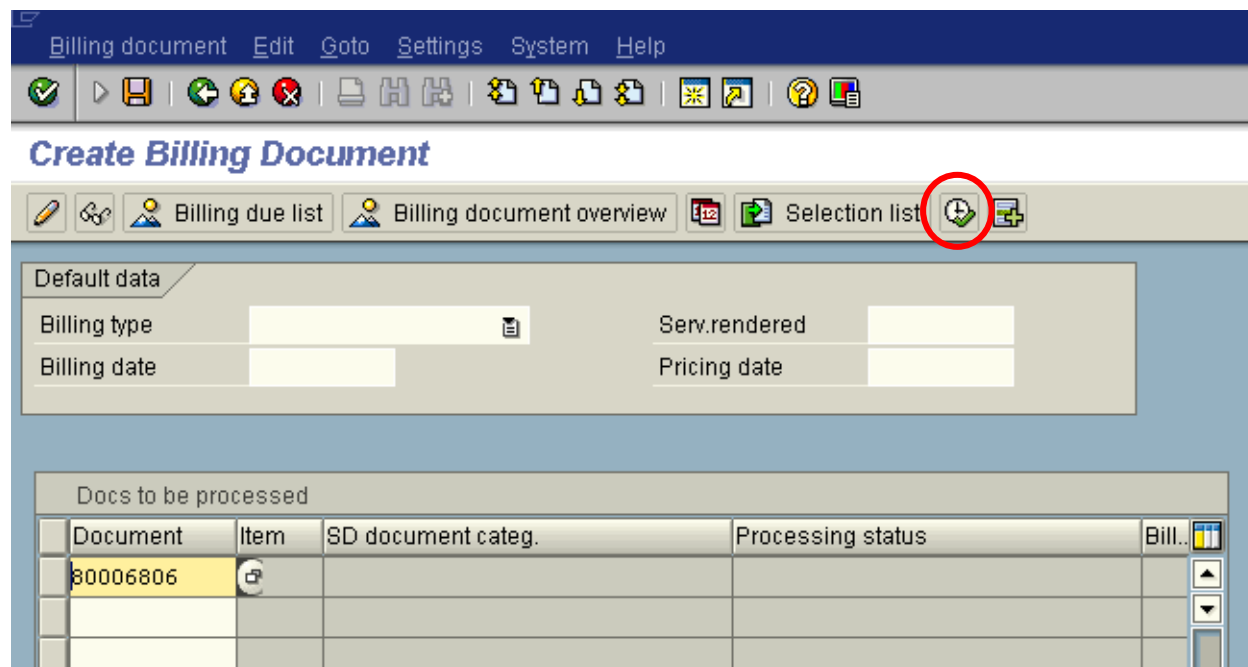
STEP 4: BILLING


❖ Invoicing a Sales Order

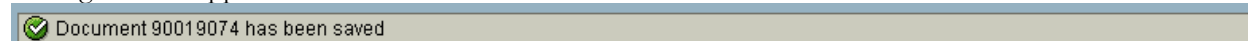
Menu Path: Logistics – Sales and Distribution – Billing – Billing Document – Create (vf01)

CREATING BILLING DOCUMENT

The following screen should appear when you click Create:



Click on the Execute icon (circled above). Then click the Save icon  on the next screen. The following message should appear at the bottom of the screen:




Exit the Create Billing Document screen  and check the Document Flow. You should see the following:

Document	Date	Overall processing status
Standard Order 6283	04/03/02	Completed
. Delivery 80006806	04/05/02	Completed
.. WMS transfer order 532	04/05/02	Completed
.. GD goods issue:delvy 1000001	04/05/02	complete
.. Invoice 90019074	04/05/02	Completed
... Accounting document 100000001	04/05/02	Not cleared

Paste a screenshot of the 'Document Flow' screen into the exercise template.

To review the invoice you have just created you can use the following path:

Menu Path: Logistics – Sales and Distribution – Billing – Billing Document – Display (vf03)

On the Display Billing Document screen enter the number of the invoice (by default the system will remember the last invoice that have been created) and click the Enter icon .

Examine the invoice. Click on the Accounting button on the top of the screen. Here you can review various accounting documents that have been created with regard to the invoice. Open the 'Accounting document' and paste a screenshot of the 'Document Overview' screen into the exercise template. You may drill down to get more detail on each of the two journal entries. What general ledger account numbers are affected by the billing step (you will have to drill down to get the answer for at least one of the journal entries)? What accounts do you think these are? What is the monetary change (specify the amount of change and whether you think the change in each account is an increase or decrease), and in what currency? Enter your answers in the exercise template.

APPENDIX 1

Fill out this form while going through the example in step 1 of the exercise.

Field	Data	What is it?
Company code	1000	
Sales organization	1000	
Distribution channel	12	
Division	00	
Region	06	
Transportation zone	D000060000	
Reconciliation account	140000	
Shipping Priority	2	
Shipping Conditions	02	

APPENDIX 2

Use Search to find customer identification codes.

Group	Customer, City
1	ELEKTRONIK GMBH, DORTMUND
2	SUDATECH GMBH, STUTTGART
3	KARSSON HIGH TECH MARKT, MUENCHEN
4	LAMPEN-MARKT GMBH, FRANKFURT
5	J & P, DUESSELDORF
6	HTG KOMPONENTE GMBH, HANNOVER
7	COMPUMAX GMBH, FRANKFURT
8	CHRISTAL CLEAR, HANNOVER
9	COLONIA COMPUTER CENTER, KOELN
10	COMPUTER CLUB MARKET, BOSTON