RICOH

Solution Sales Guide.

Barcode & **O**CR **P**ackage (BOP). **I**ntelligent **B**arcode **S**olution (IBS).

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Editorial.

Dear Sales Colleague,

This Solution Sales Guide contains all the information you need to successfully market barcode solutions.

<u>This document has been specially produced for you and is for internal use only.</u>

For external communication with customers we have produced a 4-page Solution Bulletin which provides a quick overview of all the information our customers need. It is available to download from the Intranet.

We hope you enjoy reading this guide and wish you successful sales!

The Product Management Team

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1 Introduction.

1.1 The product.

Barcode & **O**CR **P**ackage (BOP) and **I**ntelligent **B**arcode **S**olution (IBS) are our barcode generation software products.

With the help of our barcode solutions, customers can utilize the precision and low operating costs of Ricoh printers and multifunction systems to print one- or two-dimensional barcodes (e.g. Code 128 or PDF 417) and thus improve productivity and optimize workflows.

BOP and IBS are **printer-based solutions**: the software is installed on an individual system and from that point on, it runs on that system and cannot be transferred to another one.

1.2 The market.

Imagine you were given the task of reading a 10-digit number, comparing it with another number and then copying it. Then imagine you had to do this all day long. If you had to work quickly, you would almost certainly get digits the wrong way around or make typing errors. Barcodes are designed to automate this task, which is why they are becoming increasingly popular in office communication.

In the past, laser printers were unable to handle barcodes so customers had to invest in special machines such as matrix or thermal printers. These were often expensive to purchase and rarely offered the features or energy efficiency of modern multifunction printers (MFPs). Some customers still are not even aware that there is an alternative.

In recent years, most printer manufacturers have recognized this niche-market and have developed a wide range of barcode printing solutions. So the competition for barcode generation solutions is fairly large.
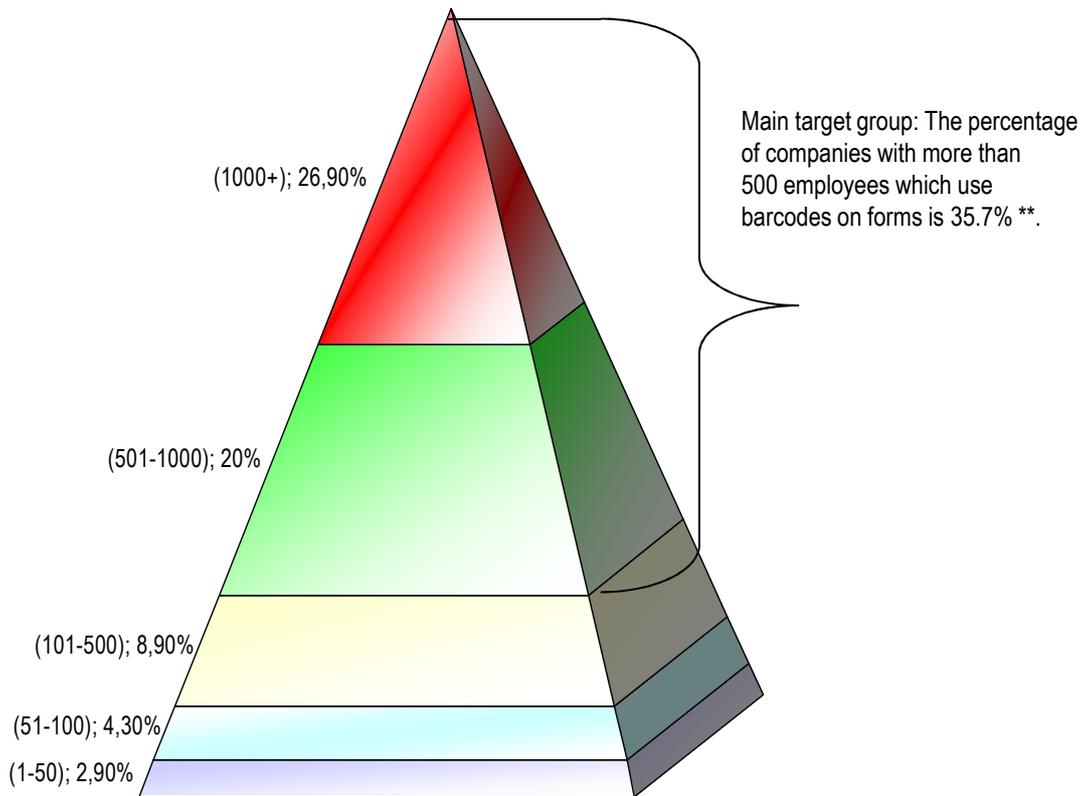
The market can be divided into the following segments:

- Some printers (e.g. Kyocera, Brother and Epson) have built-in barcode functionality, so no additional barcode generation software is required. This market segment is currently quite limited.

- Most manufacturers (e.g. HP, Canon and Lexmark) opt for printer-based barcode solutions similar to the Ricoh model (often from the same supplier, stethos). So our primary USP is the professionalism and experience of our IT Solution Support team.

- Barcodes can also be generated using external server-based solutions (such as ELP, Mercury and PlanetPress), which are however also offered by our competitors. In these cases, barcode generation is usually an extra function offered by the software.

1.3 Positioning.

Horizontal market. Companies with over 500 employees using the SAP R/3 system are the most important target user group (red and green segments).

(1000+); 26,90%

(501-1000); 20%

(101-500); 8,90%

(51-100); 4,30%

(1-50); 2,90%

Main target group: The percentage of companies with more than 500 employees which use barcodes on forms is 35.7% **.

* Ratio of number of employees to SAP market penetration. Source: Harte-Hanks Market Intelligence (EUROPE) July 2001
 ** Proportion of barcode and OCR usage in companies with more than 500 employees. Source: IDC EURO IT100, survey in April 2002

Vertical market. Companies in the manufacturing, retail, wholesale, financial and insurance sectors are the most important target user group (these are the industries with the highest number of SAP installations***).

*** Source: Hartle-Hanks Market Intelligence (EUROPE) July 2001

2 Function.

In order to generate barcodes on Ricoh systems, an additional solution is required. There are two possibilities: Either the barcodes can be installed on the printer as static printer fonts, or they can be generated by the printer autonomously and dynamically by means of PCL commands. The preferred solution depends on the customer's environment.

BOP and IBS are **printer-based solutions**. The software is installed on an individual system and will only run on this system. The solution cannot be transferred from one system to another. The advantage is that the customer does not need to source any additional system hardware.

Barcode functionality can be added to a Ricoh system in a few simple steps! The barcode solution is simply installed on the hard disk or SD card of the print system. The high quality of modern Ricoh printers guarantees barcodes that can be recognized easily by all barcode readers.
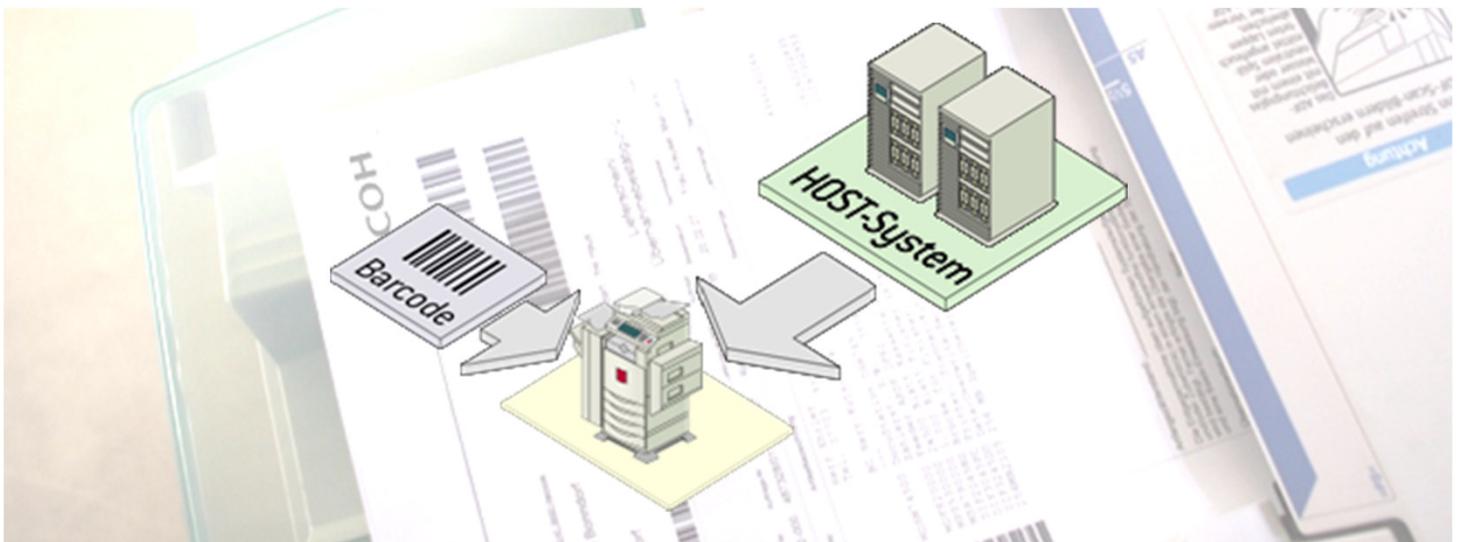
2.1 Barcode & OCR Package (BOP).

The cheaper Barcode & OCR Package (BOP) is suitable for environments where only Code 39, for example, is needed - a type of barcode without a check digit.

• BOP is a font-based barcode solution for 1D barcodes and OCR fonts.

• Simple barcodes (e.g. Code 39, without a check digit) are handled character by character, like a typeface.

• More complex barcodes (such as Code 128) can only be handled by an external program (BCP), for which a call must be added to the SAP script.

• The package is available on SD card or can be downloaded to the Ricoh system's hard disk.

Code 128: an example of a 1D barcode Content: www.ricoh.de

2.2 Intelligent Barcode Solution (IBS).

For customers who need more flexibility and functionality, we offer the Intelligent Barcode Solution (IBS).

• IBS supports a wide range of international 1D and 2D barcodes, postal barcodes and OCR fonts.

• The Intelligent Barcode Solution autonomously evaluates barcodes from the data flow generated by ERP applications such as SAP, BAAN or Oracle.

• No modifications required in SAP script / SmartForms documents.

• Automatic calculation of check digit and validation of barcode data with reference to barcode specification.

• Built-in function for start and stop characters, eliminates the need for programming modifications and reduces the programmer's workload.

• The free IBS Config Tool allows automatic recognition of devices, monitoring of device statuses and central management of licenses and configurations.

PDF 417: an example of a 2D barcode Content: Ricoh Deutschland GmbH – Vahrenwalderstrasse 315 – D-30179 Hannover – www.ricoh.de

2.3 Typical applications.

Manufacturing / retail. Barcodes are usually printed on product packaging, price tags, labels and documents for logistics systems. Printing barcodes allows the distribution of goods to be automated. Today, the same barcodes are used on delivery documents and invoices to automate documentation as well as distribution.

Example: barcode labels

Banks / government agencies. In recent years printed barcodes have become increasingly common on contracts and application forms. First, the bank or agency sends two copies of the contract or application form to the customer or citizen, with a printed barcode and signature. The recipient returns a signed copy of the document by mail. The document can then be scanned into the bank's or agency's archive system. The barcode is used to manage the information in the contract or application form in the document management system.

Banks. Banks often use OCR fonts on money transfer forms. The printed forms must be signed and returned to the bank by mail. Finally, the forms are scanned into the bank's archive system. OCR fonts improve the accuracy of recognition of the OCR characters. The combination of OCR printing and an OCR system automate the processes involved in individual transactions.

Example: money transfer form with special OCR paper

3.2 What is a barcode and what is OCR?

A barcode is an optical machine-readable representation of data consisting of a series of lines of varying widths representing alphanumerical characters. It is rather like Morse code for computers. In this context the term "code" does not refer to a type of encryption but the representation of data using binary symbols. The data in a barcode is read by optical readers such as barcode scanners or cameras, and processed electronically.

Example: one-dimensional barcodes and OCR

A number of different barcodes have been developed in recent years. There are two main types:
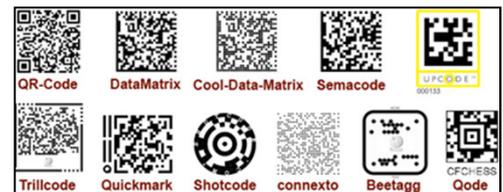
One-dimensional (1D) barcodes consist of parallel vertical lines of different widths.

Two-dimensional (2D) barcodes may take many shapes and can represent more data in a smaller area.

Example: two-dimensional barcodes

OCR (Optical Character Recognition) is the automatic recognition of printed characters. Special fonts have been developed for OCR, and these are used to print check forms, for example. These fonts are designed to be read quickly and easily by an OCR scanner.

3.3 The importance of barcodes in office communication.

Nowadays barcodes are found on nearly all everyday items. The barcode data can be mechanically read with an optical scanner and then processed electronically. This opens up numerous possible applications in day-to-day office communication.

Many of our customers use barcodes to optimize their processes (e.g. electronic routing slips), to minimize errors (e.g. using barcodes instead of handwritten customer numbers), and for many other purposes.

You will find more examples in part 2.3, "Typical applications".

3.4 Barcode generation.

For this reason our systems must be able to handle barcodes. When the barcode is sent to the printer as an image no further action is required, although the barcode is often sent to the system as a control sequence. Most laser printers and MFPs on the market do not support this function. **<u>Important: No Ricoh system supports barcodes in "as shipped" state!</u>**

As we already know, to print barcodes on Ricoh systems we need an additional solution. This slide shows some of the benefits of IBS and how it works.

IBS is a **printer-based solution**, i.e. the software is installed on an individual system and only runs on this system. IBS autonomously calculates barcodes from the data flow generated by ERP applications such as SAP, BAAN or Oracle. A major benefit for the customer is that with IBS there is no need to modify the SAP script or SmartForms document. The software calculates the check digit automatically and validates the barcode data with reference to the barcode specification. IBS also supports a wide range of international 1D and 2D barcodes, postal barcodes and OCR fonts.

For more details about the differences between BOP and IBS, refer to "2. Function".

3.5 Customer benefits at a glance.

• Platform-neutral! Barcodes can be printed from many applications with different operating systems.

• Cost-effective! Barcodes can be produced cheaply and offer cost-effective data entry.

• Efficient! Barcodes eliminate all input errors and dramatically speed up the bulk data input.

• Reliable! Barcodes provide unique identification for every item, enabling material tracking and effective control of the material flow.

• Hardware-neutral! With our barcode solutions, there is no more need for special printers. Now you can print barcodes on the Ricoh system itself!

3.6 Approach.

To stimulate the customer's interest in barcode generation, there are some opening questions you can ask to identify the customer's needs. These questions were drawn up by the sales team at RICOH Deutschland GmbH.

Here are a few examples:
• Do you want to use barcodes on your delivery documents and parcel labels?
• Would you like to use OCR fonts and barcodes for automatic scanners in your accounts department?
• Do you think your only option is to invest in a special printer (e.g. a matrix or thermal printer)?
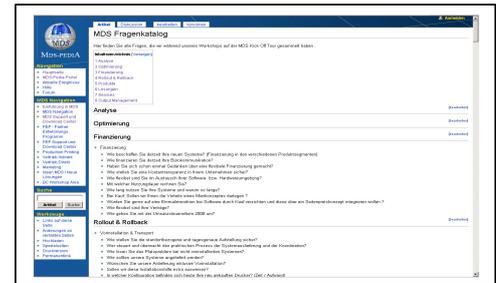
MDSPedia Portal / MDS Support & Download Center / MDS Questions

4 Technical data.

4.1 Features.

Barcode & OCR Package (BOP)

Barcodes

Printer language:	PCL 5
Font type:	PCL fonts
Supported barcodes:	For the following barcodes (without check digit) there is no need to modify the SAP script:

- Matrix 2 of 5
- Industrial 2 of 5
- Code 39 (3 of 9)
- Codabar
- MSI

Size scale:	Proportional length and width

OCR

Printer language:	PCL 5
Font type:	PCL fonts
OCR font:	OCR-A, OCR-A1, OCR-B
Size scale:	Proportional length and width

Intelligent Barcode Solution (IBS)

Barcodes

Printer language:	PCL 5
Font type:	No PCL fonts are used to produce barcodes.
	The barcode is generated by the printer by means of PCL commands.
Supported barcodes:	

- UPC-A, UPC-A +2, UPC-A +5
- UPC-E, UPC-E +2, UPC-E +5
- EAN/JAN-8, EAN/JAN-8 +2, EAN/ JAN-8 +5,
- EAN/JAN-13, EAN/JAN- 13 +2, AN/JAN-13 +5,
- EAN/JAN Velocity,
- Interleaved 2 of 5 (+CHK),
- Matrix 2 of 5 (+CHK), Industrial 2 of 5 (+CHK),
- German Postal (13-digit) control code, (11-digit) ID code,
- USPS 25 (10-digit) Tray Label, USPS 25 (8-digit) Sack Label,
- Code 39 (+CHK), Code 39 extended (+CHK),
- Danish PTT 39, French Postal 39 A/R, PZN,
- Code 93, Code 93 extended,
- Code 128 autoswitch, Code 128 A/B/C,
- UCC/EAN-128, UPC-128/SSCC-18, UPS-128,
- Codabar, AIM Codabar,
- MSI Plessey (+CHK10), (+CHK 10/10), (+CHK 11/10),
- Code 11, (+CHK 11), (+CHK 11/11),
- USPS POSTNET (5, 9, 11 digits), FIM, ZEBRA,
- Australian 4-state, Singapore 4-state, KIX, RM4SCC,
- PDF 417, UPS matrix code, data matrix

Size scale:	Variable length and width (non-proportional)

OCR

Printer language:	PCL 5
Font type:	PCL fonts
OCR font:	OCR-A, OCR-A1, OCR-B (OCR-B also as human-readable text in barcode).
Size scale:	Proportional length and width

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4.2 Compatibility

BOP is supported by the following Ricoh systems:

System printer:

•Ricoh Aficio SP C420DN

•Ricoh Aficio SP 8200DN

•Ricoh Aficio SP 9100DN

•Ricoh AP 610

MFPs:

•Ricoh MP 1600 / MP 2000

•Ricoh Aficio MP 2500 / 2500SP

•Ricoh Aficio MP 3350CSP / 3350BAD

•Ricoh Aficio MP 4000CSP / 4000BAD

•Ricoh Aficio MP 5000CSP / 5000BAD

•Ricoh Aficio MP C2050/ C2550

•Ricoh Aficio MP C2800 / C3300

•Ricoh Aficio MP C6000

•Ricoh Aficio MP C7500

Please refer to the current compatibility list at http://stethos.com/bop

BOP is available as an HDD version and on SD card (type E), and this must be taken into account in the configuration. Details can be found in the list.

IBS is supported by the following Ricoh systems:

System printer:

- Ricoh Aficio SP 4210N
- Ricoh Aficio SP C420DN
- Ricoh Aficio SP 8200DN
- Ricoh Aficio SP 9100DN
- Ricoh AP610N

MFPs:

- Ricoh Aficio MP 171
- Ricoh Aficio MP 1600 / MP 2000
- Ricoh Aficio MP C2050 / MP C2550
- Ricoh Aficio MP 2500
- Ricoh Aficio MP 3350CSP / 3350BAD
- Ricoh Aficio MP 4000CSP / 4000BAD
- Ricoh Aficio MP 5000CSP / 5000BAD
- Ricoh Aficio MP C2800 / MP C3300
- Ricoh Aficio MP C4000 / MP C5000
- Ricoh Aficio MP C6000
- Ricoh Aficio MP C7500
- Ricoh Aficio MP C3002/ MP C3502 **(new)**
- Ricoh Aficio MP C4502/ MP C5502 **(new)**
- Ricoh Aficio MP C4002/ MP C5002 **(new)**
- Ricoh Aficio MP 301 **(new)**
- Ricoh Aficio MP C305 **(new)**
- Ricoh Aficio MP C6002 / MP C7502/ MP C9002 **(new)**

Please refer to the current compatibility list at http://stethos.com/ibs

IBS is either installed on the HDD or on an SD card, and this must be taken into account in the configuration. Details can be found in the list.

Good luck and successful selling!

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