

Optical character recognition (OCR)

Identification of handwritten and machine generated texts with the highest reading rates



VITRONIC

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The VIPAC identification system identifies handwritten and machine generated characters such as:

- Addresses: streets, house/apartment numbers, zip codes and countries
- Product numbers
- Quantitative information
- Provider numbers

on labels and outer packaging – even under plastic film.



The VIPAC OCR software identifies machine-generated and handwritten address information.

The automatic evaluation of information from plain text is performed exclusively by VITRONIC's VIPAC OCR reading software. Accurate reading of various characters is achieved even at high speeds.

The VIPAC optical character recognition is performed in the following steps:

- Label detection
- Identification of the label ID barcode and the label fields
- Generation and evaluation of label field hypotheses
- Separation of the lines and the characters in the label field
- Isolating the characters from the background
- Separation of the individual characters
- Classification of the individual characters

VIPAC camera-based identification system

The automated processing of object- and client-related information serves to optimize the logistic processes. Optimization is achieved with the fully automated VIPAC identification system. VIPAC has a modular structure consisting of one or several camera units and decode computer(s). Dimensioning is also available with cameras or standalone.

VIPAC identifies the most accurate reading rates from handwritten and machine-generated characters, as well as 1-D and 2-D codes from all sides of the object, regardless of the objects orientation. VIPAC even recognizes writing and codes under plastic film. The VITRONIC technology allows identification at belt speeds of up to 4.5m/s (885fpm).

From the cameras initial search for the label to the beginnings of character classification, gray value procedures ensure that the software provides the best reading results even in cases of inadequate contrast or bad character qualities. The classification of individual characters is performed independently by several procedures (multi-stage classifier). It is arranged to minimize calculation time and maximize reading rates. The combination of different algorithms leads to higher reading accuracy.

Highest reading rates

The VIPAC identification system allows the highest reading rates. In respect to the quality of characters, the following factors are also important:

- Contrast
- Printing method
- Size of the characters
- Stained or dirty labels

To improve reading quality and read rates the reading results need to be compared. This is accomplished by integrating the customer and specific country database to evaluate results.

100 percent reading rates using video coding

Information that is usable to be recognized or completely unidentifiable can be redirected to video coding work stations, via a fast intelligent network. Promptly, an image is made available, allowing the operators to enter the missing information.

Web-based monitoring software

An image archiving and analysis tool allows pictures to be saved and documented for future follow-up. In addition, a precise breakdown of the identification process can be maintained.

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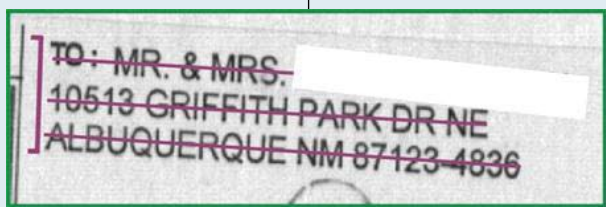
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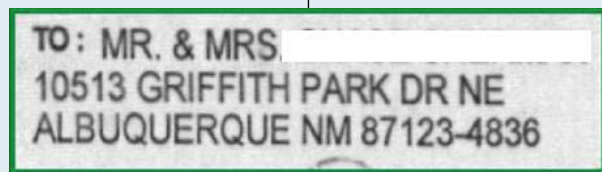
In the first step, the OCR software searches for and finds the label. Next the system searches for the label ID barcode and the label fields.



Now the OCR software generates the writing fields' hypotheses and evaluates them.



In the next step, the lines and the characters in the writing field are separated.



And finally, the characters in the background are isolated, separated and classified.