Navitas Vision System

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Navitas Vision Co., Ltd.
https://www.nvs-one.com
What is Navitas Vision?

Navitas Vision is Print Vision Inspection Builder in Japan

1,000 Navitas Vision Inspection Systems achieved in September, 2018

Founded on April 1st, 2011
Software Solution

Navitas Vision original software solution

Clear structure (user interface)

Easy to use

Intuitive functions
Market-1 Web Inspection

Web Inspection

- Label printing
- Film printing
- Business form printing
- Online printing machine with CIS camera
Sheet fed

- Sheet fed label inspection
- Sheet fed package and business form inspection
- Bank card, credit card, insurance card inspection
- Online printing machine with CIS camera
Market-3 Digital Printing Inspection

Supply in digital or hybrid printing machines

- Variable label printing
- Variable film printing
- Variable business form printing
- Variable printing using Ink jet printer
- Online printing machine with CIS camera

Master digital PDF data for variable printing

Variable printing camera image with defects inspected by Navitas Vision system

Compare
Market-4 Bottle Printing Inspection

Inspection of bottle printing

- Cylindrical and oval shape bottle
- Tube type bottle
- Clear bottle
- Pharmaceutical and cosmetic industry

//www.takeuchiyoki.co.jp
Market-4 Bottle Printing Inspection

Defect examples

Outside bottom inspection

Inside bottom inspection

Outside surface inspection

Scratch

Break

Spot

Dimension, Position Gap

Pinhole

Blur

Character

Defect examples
USP-1 Multiple Master Imaging

※USP=Unique Sales Point

Multiple Master Imaging

- Compare image to image (standard)
- bmp, jpeg or pdf as golden master (including automatic color and size correction)
USP-1 Multiple Master Imaging

Multiple Master Imaging

※USP=Unique Sales Point

Compare

extracted data as master for multi pattern images

Compare

past inspection data as golden image
USP-2 Variable Characters Inspection

1-D barcode and 2-D-data code inspection
OCR(Optical Character Recognition) and variable characters inspection

- print quality check
- simultaneous defect detection on both variable and fixed parts
- verification of code
- variable characters quality inspection with OCR
- data management with csv. files

※USP=Unique Sales Point

Recognized characters: 00725

Recognized code: www.futeceurope.com

Recognized characters: 4912345678904
Recognized code: 4912345678904
## USP-2 Variable Characters Inspection

1-D barcode and 2-D-data code inspection

※USP=Unique Sales Point

<table>
<thead>
<tr>
<th>readable 1-D barcode</th>
<th>readable data code</th>
</tr>
</thead>
<tbody>
<tr>
<td>NW-7 (Codebar)</td>
<td>QR Code</td>
</tr>
<tr>
<td>JAN (EAN, UPC)</td>
<td>Micro QR Code</td>
</tr>
<tr>
<td>CODE-128</td>
<td>Data Matrix (ECC200, GS1)</td>
</tr>
<tr>
<td>CODE-93</td>
<td>PDF 417</td>
</tr>
<tr>
<td>CODE-39</td>
<td></td>
</tr>
<tr>
<td>Interleaved 2of5 (ITF)</td>
<td></td>
</tr>
<tr>
<td>Industrial 2of5</td>
<td></td>
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<tr>
<td>RSS (GS-1 Databar)</td>
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<tr>
<td>Customer Barcode</td>
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</tbody>
</table>
Automatic blur correction by Marginal Fuzzy Logic (MFL)

※Marginal Fuzzy Logic (MFL) is Navitas Vision original image processing algorithm.

- Master image
- Real print image

Detection result without automatic blur correction by MFL
Detection result with automatic blur correction by MFL

Only real print defects will be shown

※USP = Unique Sales Point
USP-4 Automatic ROI and Extraction Function

Automatic ROI and extraction function

※USP=Unique Sales Point

Settings made on single object will be adopted to the full web
USP-4 Automatic ROI and Extraction Function

Automatic ROI and extraction function

※USP=Unique Sales Point

Automatic recognition of object area

Automatic recognition of edge area

Automatic recognition of outside area

Automatic recognition even with arbitrary shapes
USP-5 Automatic Position Alignment

Automatic position alignment

- Automatic correction of:
  - expansion
  - contraction
  - distortion
  - deformation
  - rotation (up to 180° can be corrected)

※USP=Unique Sales Point
USP-6 Register Movement Correction

Register movement correction

by which fine defects on character edge position can be detected
with ignoring acceptable register movement

- Small print defects will be detected, even on same color and on edge position
- Acceptable register movements will be ignored

※USP=Unique Sales Point
USP-7 Measurement Function

Measurement function

- precise position and size measurement of the object
- multiple color register defects detectable
- print – punch position measurement

※USP=Unique Sales Point
Solution
Network

Processing NG Objects

Inspection Results File Server
- NAS
- Windows Server

Verifying and Analyzing Inspection Results

Navitas vision System
- Offline Inspection
- Online Inspection
About us

<table>
<thead>
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</tr>
</tbody>
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History

2004  Start to develop the image processing inspection software “Navitas Checker” for printing industry.

2011  Independent from parent company and started own business.

2016  Develop new software “Asmil Vision”.

2018  Sold totally more than 1,000 inspection units over the world.