



### Your tools for automated aesthetic inspection and classification

Human-like Self-learning Powerful





# Hunting defects

Deep Learning-based industrial image analysis

ViDi offers the first ready-to-use Deep Learning-based software dedicated to industrial image analysis. ViDi Suite is a field-tested, optimized and reliable software solution based on a state-of-the-art set of algorithms in Machine Learning. It allows tackling otherwise impossible to program inspection & classification challenges. This results in a powerful, flexible and straightforward solution for countless challenging machine vision applications.





# Deep Learning-based industrial image analysis

Automated detection, inspection and classification

Human-like Self-learning Powerful



🕂 🛛 swiss made software

ViDi offers the first ready-to-use Deep Learning-based software dedicated to industrial image analysis. ViDi Suite is a fieldtested, optimized and reliable software solution based on a state-of-the-art set of algorithms in Machine Learning. It allows tackling otherwise impossible to program inspection & classification challenges. This results in a powerful, flexible and straightforward solution for countless challenging machine vision applications. The Suite consists of 3 different tools:



### Feature localization & identification ViDi blue is used to find and localize single or multiple features within an image. Be it strongly deformed characters on very noisy backgrounds (OCR) or complex objects in bulk; the blue tool can localize and identify complex features and objects by learning from annotated images. To train the blue tool, all you need to provide are images where the targeted features are marked.



### Segmentation & defect detection

ViDi red is used to detect anomalies and aesthetic defects. Be it scratches on a decorated surface, incomplete or improper assemblies or even weaving problems in textiles; the red tool can identify all of these and many more problems simply by learning the normal appearance of an object including its significant but tolerable variations. ViDi red is also used to segment specific regions such as defects or other areas of interest. Be it a specific foreign material on a medical fabric or the cutting zone on lace; the red tool can identify all of these regions of interest simply by learning the varying appearance of the targeted zone.



### **Object & scene classification**

ViDi green is used to classify an object or a complete scene. Be it the identification of products based on their packaging, the classification of welding seams or the separation of acceptable or inacceptable defects; the green tool learns to separate different classes based on a collection of labelled images.

To train the green tool, all you need to provide are images assigned to and labelled in accordance with the different classes.

Graphical & application programming interfaces
Windows graphical user interface (GUI) with plugin support
HTML based GUI (required browser: Mozilla Firefox ESR (extended support release))
C library (Windows DLL / Linux shared object) for runtime and/or training
Microsoft .NET library (Wrapper for C library and WPF GUI components)
Hardware & OS Requirements
CPU: Intel Core i5 (minimum), Intel Core i7/Xeon (recommended)
Optional GPU: NVidia Graphic Card (CUDA compute capability ≥ 3.0)
Recommended: GeForce GTX970-980, GTX1070-1080, GTX TITAN, Quadro K2200-M4000-M6000, Tesla
K40-K80
Memory: 4GB (minimum), 8GB (recommended)
1 free USB port (for the license dongle)
OS: Windows 7 – 64 / Linux - Ubuntu 14.04 64bit LTS
Runtime license support & Maintenance
Licenses are permanent and do not require maintenance or renewable fees
ViDi Suite comes with a free 12 months update & remote application engineering support
Miscellaneous
Supported image file formats: PNG, BMP, TIFF, JPEG

Supported image properties: 1 - 4 channels, 8 or 16 bits

ViDi Suite GUI & documentation language: EN

Note: ViDi Suite performance - in term of processing time - will depend upon hardware selection

ViDi Systems SA, Zone Industrielle du Vivier 22, 1690 Villaz-St-Pierre, Switzerland 🕾 +41.26.653.72.30 | sales@vidi-systems.com | www.vidi-systems.com



### VIDI SUITE

Deep learning based industrial image analysis software for automated inspection and classification

Human-like: Outperforms the best quality inspectors

Self-Learning: No software development required

**Powerful**: Tackles the impossible to program inspection challenges

### **HOW DOES IT WORK?**

It is as simple as 1-2-3: 1- Collect images of "known good parts"

2- Let ViDi Suite train on those samples and create its reference model

3- Proceed with testing



# Defect Detection on Textured Metal Surface



With the ViDi red tool in its supervised mode and the ViDi green, the automated detection & classification of defects is now extremely simple.

# CHALLENGES IN AUTOMATIC DETECTION

**APPLICATION NOTE** 

VIDI

**Suite** 

- Typical defects like hits, scratches or stains are often hardly dicernable at the early production stages because of the parts' rough and strongly textured surfaces.
- Normal variations and non-significant anomalies in the material need to be tolerated
- Stains & hits often manifest themselves by a local change in contrast caused by non-uniform lighting.

The software algorithm trains itself on a representative set of annotated images as well as known good samples. The learning system automatically incorporates contextual information in order to form a reliable model of the part's shape and texture. As a consequence, difficult to discern defects can be detected as in the sample to the right: the hits and scratches are considered as anomalies because they have a textured area that deviates from the expected average local surface aspects and tolerable deviations.

### SAMPLE DEFECTS



### **TEXTURED METAL SHEET**

One of the key challenges when inspecting surface defects is that they are dynamic, process-related and caused by the forming process. They become visible and disturbing only after the later production steps, in which the parts get painted and varnished such that the resulting polished surface becomes a specular reflector of light. It is only under these conditions that hits, stains and scratches become easily visible. However, the cost of such defects will be prohibitively high if they can only be detected that late within the production process.

With ViDi red, typical defects can be detected and classified on coarse material in any orientation with standard illumination and on images acquired with standard matrix cameras.

After the training phase is completed, the inspection process reliably identifies defects in a couple of milliseconds when computing on a standard GPU.



### **RESULTS & PERFORMANCE**

**Powerful Detection**: ViDi can reliably detect and classify the defects on the complex textured surface on images with specular reflections and tolerable anomalies during early stages of the production process.

**Self-Learning**: The inspection is performed without the need for a multitude of carefully tuned and optimized detection algorithms, but instead relies on a human-like approach - learn and apply - however with an improved testing consistency and repeatability.

**Quick & Easy:** Learning from the representative set of samples can be achieved in less than 30 minutes.





### INTEGRATION

Due to its self-learning abilities, ViDi Suite can be deployed quickly and easily on new applications without the need for any specific development

ViDi Systems SA Zone Industrielle du Vivier 22 1690 Villaz-St-Pierre Switzerland

T.:+41.26.653.7230 F.:+41.26.653.7231

sales@vidi-systems.com www.vidi-systems.com

© 2016 ViDi Systems S.A. - Defect Detection on Textured Metal Surface Ver. 1.0, Oct. 2016, EN



# **Aesthetic Textile Inspection**



# CHALLENGES IN TEXTILE INSPECTION

- The fabric pattern can be highly complex, and position variants can preclude the use of simple methods based on spatial frequency analysis
- The visual appearance varies drastically: deformations due to the stretchable nature of the fabric and other variations such as yarn thickness.
- Defects in textiles come in countless forms and types and explicitly searching for all defects is not an option.

With ViDi Suite, the automatic inspection of complex pattern fabrics is now extremely simple.

The software algorithm trains itself on a set of known good samples to create its reference model. **No tedious software development is required!** 







Once this training phase is completed, the inspection is ready to go. Defective areas of the fabric can quickly be identified and reported. Best of all, there is **no need for extensive defect libraries!** 



### VIDI SUITE

Deep learning based industrial image analysis software for automated inspection and classification

Human-like: Outperforms the best quality inspectors

Self-Learning: No software development required

**Powerful**: Tackles the impossible to program inspection challenges

### **HOW DOES IT WORK?**

It is as simple as 1-2-3: 1- Collect images of "known good parts"

2- Let ViDi Suite train on those samples and create its reference model

3- Proceed with testing



### YARN DYE PLAID

For this first woven fabric, we provided our ViDi red tool with a representative set of good samples for the system to learn by itself, completely unsupervised, the weaving pattern, yarn properties, colors and tolerable imperfections.

After the training phase was completed, the inspection was able to quickly identify defects like the ones shown at the right. Top: Unexpected stitching Bottom: Weaving weft float

### **YARN DYE STRIPES**

On this second set of fabric, just as for the previous set, ViDi's red tool learns, by itself, a model of the complex knitting pattern from a collection of randomly selected good samples.

During the inspection phase, the red tool reports defective areas of the fabric like the ones shown at the right:















### **RESULTS & PERFORMANCE**

This novel approach brings human visual inspection performances to automatic textile quality control equipment. It radically differs from traditional Machine Vision solutions since it is:

**Self-Learning:** Textile inspections were conducted without involving any pre-defined defect library. Instead, the system learns all by itself, completely unsupervised, the weaving pattern, yarn properties, colors, and tolerable imperfections.

Human-like: It outperforms the best quality inspectors in term of accuracy, testing consistency, and speed.

**Powerful:** In both cases, learning from the known good sample was achieved in less than 10 minutes. Most types of textile manufacturing defects can be identified at each stage of textile processing (ginning, spinning, cutting, weaving/knitting, pretreatment, dyeing/printing, finishing, and stitching).





© 2015 ViDi Systems S.A. - Aesthetic Textile Inspection, Ver. 1.4, August 2015, EN

### INTEGRATION

Due to its self-learning abilities, ViDi Suite can be deployed quickly and easily on new applications without the need for any specific development

ViDi Systems SA Zone Industrielle du Vivier 22 1690 Villaz-St-Pierre Switzerland

T. : +41.26.653.7230 F. : +41.26.653.72<u>31</u>

# seeing what matters

### VIDI SUITE

Deep learning based industrial image analysis software for automated inspection and classification

Human-like: Outperforms the best quality inspectors

Self-Learning: No software development required

**Powerful**: Tackles the impossible to program inspection challenges

### HOW DOES IT WORK?

It is as simple as 1-2-3:

1- Collect images of "known good parts"

2- Let ViDi Suite train on those samples to create its reference model

3- Proceed with testing



# **Machined Part Inspection**



# CHALLENGES IN MACHINED PART INSPECTION

- Typically there are many different types of complex shapes
- Varying surface properties depending on machining tool quality and varying properties of the blank material need to be tolerated
- Some defects only show under a very particular combination of illumination, camera and surface orientation

With ViDi Suite, the automated visual inspection of complex machined parts is now extremely simple.

The software algorithm trains itself on a set of known good samples which are recorded while being rotated to create its reference model.





Once this training phase is completed, the inspection is ready to proceed. Defective areas on the surface of the machined part can be reliably identified and reported. With the flexibility of ViDi Suite, the machined part can be rotated in front of the camera to perform the inspection without the need for precise synchronization between image acquisition and rotation.

### SOLID CARBIDES

This first example shows cutting tools which are machined and coated. We provide our ViDi red tool with a representative set of good samples to train on the appearance of the cylindrical parts while rotating.

After the training phase is completed, the inspection process reliably identifies defects like the ones shown to the right. Top: outbreak at the cutting edge Bottom: small outbreak at the tip



### MEDICAL SCREWS

In a second example, ViDi red learns a complete medical-screw model. Again, the screw is rotated around the vertical axis when recording. This model is based on a collection of randomly selected good samples. It incorporates acceptable variations of the surface texture as well as the complex tip with its self-drilling undercuts.

During the inspection phase, the ViDi red tool reports defects anywhere on the surface like scratches, dents or stains.

### **RESULTS & PERFORMANCE**

**Powerful Detection**: Different types of defects were detected thanks to the rotation of the object in front of the camera.

Bad

**Self-Learning**: The machined parts inspection was conducted without any complex defect library, but instead relied on a human-like approach - learn and apply – supplemented with an improved testing consistency and repeatability.

**Quick & Easy**: In both cases, learning from known good samples was achieved in less than 20 minutes.





### © 2015 ViDi Systems S.A. – Machined Part Inspection, Ver. 1.2, May 2015, EN

### INTEGRATION

Due to its self-learning abilities, ViDi Suite can be deployed quickly and easily on new applications without the need for any specific development

ViDi Systems SA Zone Industrielle du Vivier 22 1690 Villaz-St-Pierre Switzerland

T.:+41.26.653.7230 F.:+41.26.653.7231 sales@vidi-systems.com www.vidi-systems.com



# **Pad Printing Aesthetic Inspection**



### CHALLENGES IN PAD PRINTING **INSPECTION**

- Multi-step tampography can lead to considerable but tolerable relative shifts (registration problem)
- Varying quantities of ink applied results in fonts or lines that are thicker/thinner in appearance
- Random texture of substrate, like brushed or otherwise decorated metal

automated aesthetic printing is now extremely simple.

The software algorithm trains itself on a set of known good samples and creates its reference model.

# With ViDi Suite, the inspection of complex pad

Good



Once this training phase is completed, the inspection is ready to go. Defective areas of the printing can quickly be identified and reported. ViDi suite does not limit itself to checking ink transfer but complements it with a detailed aesthetic inspection of the substrate. And best of all, there is no need for extensive defects libraries !

Deep learning based industrial image analysis software for automated inspection and classification

Human-like: Outperforms the best quality inspectors

Self-Learning: No software development required

Powerful: Tackles the impossible to program inspection challenges

It is as simple as 1-2-3: 1- Collect images of "known good parts"

2- Let ViDi Suite train on those samples and create its reference model

3- Proceed with testing



### WATCH DIALS

For this initial pad printing example, we provide our ViDi red tool with a representative set of good samples to train on the complexity of the watch dials and their tolerable imperfections.

After the training phase is completed, the inspection process reliably identifies defects like the ones shown to the right. Top: misprint on uneven surface Bottom: incorrect ink transfer









### **KEY BUTTONS**

On this second set of printed parts ViDi red learns a model of the '+' sign appearance at the center of a button. This model is based on a collection of randomly selected good samples and also incorporates acceptable variations of the substrate texture.

During the inspection phase, the ViDi red tool reports defective areas of the print like the ones shown to the right.







### **RESULTS & PERFORMANCES**

**Powerful Detection**: Most types of pad printing defects can be identified even when located on complex textured backgrounds.

**Self-Learning**: Pad printed inspections were conducted without any complex defect library but instead relied on a human-like approach - Learn and apply – supplemented with an improved testing consistency and repeatability.

**Quick & Easy**: In both cases, learning from the known good samples was achieved in less than 10 minutes.





### INTEGRATION

Due to its self-learning abilities, ViDi Suite can be deployed quickly and easily on new applications without the need for any specific development

ViDi Systems SA Zone Industrielle du Vivier 22 1690 Villaz-St-Pierre Switzerland

T.:+41.26.653.7230 F.:+41.26.653.7231



# **Solar Panel Inspection**



With ViDi Suite and the ViDi red tool in supervised mode, the automated analysis of EL images of photovoltaic modules is now extremely simple.

The software algorithm trains itself on a representative set of annotated images of the different defect types as well as known good samples. The learning system automatically incorporates contextual information in order to form a reliable model of the defects.

### CHALLENGES IN AUTOMATED INSPECTION OF ELECTRO-LUMINESCENCE (EL) IMAGES

- Large variations in luminescence between cells or modules are to be expected and tolerated.
- Some defects like micro-cracks or contact-forming errors can be very subtle and difficult to discern from a strong and highly irregular background texture.
- There is a multitude of very different defect types which makes it impossible to develop a simple yet robust algorithm to detect all of them.





Once this training phase is completed, the inspection is ready to proceed. Defective areas of the cells can quickly be identified and reported.

### VIDI SUITE

Deep learning based industrial image analysis software for automated inspection and classification

Human-like: Outperforms the best quality inspectors

Self-Learning: No software development required

**Powerful**: Tackles the impossible to program inspection challenges

### HOW DOES IT WORK?

It is as simple as 1-2-3:

1- Collect images of the different defects types as well as defect free samples

2- Let ViDi Suite train on those samples to create its reference model

3- Proceed with testing



### MICRO-CRACKS

The most challenging types of defects are the micro-cracks, mostly due to the strongly structured background which typically shares many features with them. Provided with a representative set of sample cracks, the learning system forms a reliable model of that defect. At the same time, it learns to distinguish the cracks from the similar appearance of the background pattern. The resulting detection is therefore highly specific and selective at the same time.





### **RESULTS & PERFORMANCE**

Bac

**Powerful Detection**: Most types of defects in photovoltaic modules revealed by EL imaging can automatically be detected and identified (cracks, breaks, short circuits, grid finger interruptions, contact-forming errors)

**Self-Learning**: The inspection of the EL images was conducted without the need for a multitude of carefully tuned and optimized detection algorithms, but instead relied on a human-like approach - learn and apply - topped with an improved testing consistency and repeatability.

**Quick & Easy:** Learning from the representative set of samples can be achieved in less than 30 minutes.





© 2015 ViDi Systems S.A. - Solar Panel Inspection, Ver. 1.2, May 2015, EN

### INTEGRATION

Due to its self-learning abilities, ViDi Suite can be deployed quickly and easily on new applications without the need for any specific development

ViDi Systems SA Zone Industrielle du Vivier 22 1690 Villaz-St-Pierre Switzerland

T.:+41.26.653.7230 F.:+41.26.653.7231



# **Watch Part Inspection**



With ViDi Suite and the ViDi red tool, the automated analysis of decorated watch parts is now extremely simple.

### CHALLENGES IN AUTOMATED INSPECTION OF DECORATED WATCH PARTS

- Surface decorations come in many different types and variants as well as on numerous types of materials.
- The production processes (manual or automated) are designed to reveal a random aspect which makes each part unique.
- There are many different types of defects which often manifest themselves not just by a local change in contrast, but a change of the local texture.

The software algorithm trains itself on a representative set of annotated images as well as known good samples. The learning system automatically incorporates contextual information in order to form a reliable model of the part's shape and decoration. As a consequence, difficult to discern defects can be detected as in the sample to the side: the two scratches are considered as anomalies because they have an orientation which deviates from the expected average local orientation of the decoration.



Bad

Deep learning based industrial image analysis software for automated inspection and classification

Human-like: Outperforms the best quality inspectors

Self-Learning: No software development required

**Powerful**: Tackles the impossible to program inspection challenges

### HOW DOES IT WORK?

It is as simple as 1-2-3: 1- Collect images of "known good parts"

2- Let ViDi Suite train on those samples and create its reference model

3- Proceed with testing



### IMAGE ACQUISITION SETUP

One of the key challenges when inspecting decorated watch parts is that typical defects like scratches or dents are only visible for some specific combinations of camera position, part surface orientation and illumination angle. In order to increase the probability that these combinations are found, the cogwheels are placed on the axis of a motor and rotated continuously in front of the camera next to a spot-like low-angle illumination. The resulting sequence of images reveals the different defects which often manifest themselves as changes in local texture.



### SAMPLE DEFECTS



### **RESULTS & PERFORMANCE**

**Powerful Detection**: Various types of defects on complex decorated watch parts can be reliably detected.

**Self-Learning**: The inspection of the decorated surfaces was conducted without the need for a multitude of carefully tuned and optimized detection algorithms, but instead relied on a human-like approach - learn and apply - topped with an improved testing consistency and repeatability.

**Quick & Easy:** Learning from the representative set of samples can be achieved in less than 30 minutes.





© 2015 ViDi Systems S.A. – Watch Part Inspection, Ver. 1.2, May 2015, EN

### INTEGRATION

Due to its self-learning abilities, ViDi Suite can be deployed quickly and easily on new applications without the need for any specific development

ViDi Systems SA Zone Industrielle du Vivier 22 1690 Villaz-St-Pierre Switzerland

T.:+41.26.653.7230 F.:+41.26.653.7231



# seeing what matters

### VIDI SUITE

Deep learning based industrial image analysis software for automated inspection and classification

Human-like: Outperforms the best quality inspectors

Self-Learning: No software development required

**Powerful**: Tackles the impossible to program inspection challenges

### HOW DOES IT WORK?

It is as simple as 1-2-3: 1- Collect images of "known good parts"

2- Let ViDi Suite train on those samples and create its reference model

3- Proceed with testing



# Welding seam inspection



# CHALLENGES IN WELDING SEAM INSPECTION

- Welding seams exhibit a large variety of shapes and features which can hardly be described by classical means
- Normal and expected variations in the welding process and material need to be tolerated
- The highly reflective and irregular metallic surface renders as a complex texture in the image

With ViDi Suite, the automated optical inspection of welding seams is now extremely simple.

The software algorithm trains itself on a set of known good samples which are presented in front of the camera and creates its reference model.



With its powerful statistical algorithm, ViDi Suite can train on a large amount of images representing all the process and image variations.

Once this training phase is completed, the inspection is ready to go. Defective welding seams can be reliably identified and reported.

### COG WHEELS LASER WELDING

This example shows laser welded cog wheels. We provide our ViDi red tool with a representative set of good samples to train on the appearance of the acceptable welded part.





After the training phase is completed, the inspection process reliably identifies defects like the ones shown to the right. Top: Missing welding Middle: Overpowered welding Bottom: Underpowered welding with holes in the welding seam.













### **RESULTS & PERFORMANCES**

**Powerful Detection**: Different types of defects can reliably be detected even when located on a highly reflective and irregular metallic surface.

**Self-Learning**: The welding seam inspection was conducted without any complex defect library but instead relied on a human-like approach - learn and apply – supplemented with an improved testing consistency and repeatability.

Quick & Easy: Learning from the known good samples was achieved in less than 20 minutes.





© 2015 ViDi Systems S.A. – Welding seam inspection, Ver. 1.2, May 2015, EN

### INTEGRATION

Due to its self-learning abilities, ViDi Suite can be deployed quickly and easily on new applications without the need for any specific development

ViDi Systems SA Zone Industrielle du Vivier 22 1690 Villaz-St-Pierre Switzerland

T.:+41.26.653.7230 F.:+41.26.653.7231

### VIDI SUITE

Deep learning based industrial image analysis software for automated inspection and classification

Human-like: Outperforms the best quality inspectors

Self-Learning: No software development required

**Powerful**: Tackles the impossible to program inspection challenges

### HOW DOES IT WORK?

It is as simple as 1-2-3: 1- Provide a reference collection of images labeled in accordance with the different classes 2- Allow ViDi Suite learn to separate different classes based on this collection 3- Proceed with sorting







# Appearance-based product identification



### CHALLENGES IN LOGISTIC CENTER PRODUCT TRACKING

- Automatic product identification and classification without access to bar or matrix code
- Normal and expected changes in product or batch appearance and environmental variability exist and can cause problems. So systems that are implemented to take on this challenge need to be resilient to the mentioned variations
- Possible visual similitude of different products
- Frequent introduction of new products or packaging

ViDi Suite offers significant advantages in terms of performance and simplicity for configuring and operating. It does not rely on a bar code to identify and sort products but does it based on the visual appearance of the products themselves. Its self-learning statistical engine empowers the logistic center manager to easily teach the system by providing images properly labeled in accordance with the product they show.



(No programming of extensive selection criteria – no development of image processing and filter sequences)

And when a new product has to be added, there is no need to involve a specialist in industrial vision: Just add the images of the new product to your image database and let ViDi Suite figure out by itself which features in the images offer the best separability. The system auto-calibrates and you are ready to go.



Two different milk cartons with the same package design. The only difference is the presence of an additional text (in the red circle). However, there is no need to feed this information to ViDi green. It figures this out by itself and learns to ignore all other changing yet irrelevant aspects such as the expiration date or the relative alignment of the bricks.





The two products are the same in the left and right image (4-pack wrap, same bar code). The difference emerges from the caddie preparation: half caddies (right image) preparation requires additional plastic wrapping (circled in red). ViDi green locks onto this "soft feature" by itself and reliably detects it across images tolerating significant variation in appearance.

### **RESULTS & PERFORMANCES**

Human-like: ViDi green is a bio-inspired tool able to differentiate classes of objects.

**Self-Learning:** ViDi green does not require any programming. All you need is to provide a sufficient number of images per class for labeling.

**Powerful Classification:** ViDi green solves a hard to tackle programming challenge; it automatically finds what distinguishes each class (without expert analysis).





### INTEGRATION

Due to its self-learning abilities, ViDi Suite can be deployed quickly and easily for new applications without requiring any specific development

ViDi Systems SA Zone Industrielle du Vivier 22 1690 Villaz-St-Pierre Switzerland

T.:+41.26.653.7230 F.:+41.26.653.7231

sales@vidi-systems.com www.vidi-systems.com

© 2015 ViDi Systems S.A. - Logistic Center Application Note, Ver. 1.3, May 2015, EN



# COMPANY PROFILE



- ViDi Systems SA is a Swiss company founded in 2012 as part of the CPA Group SA.
- ViDi provides breakthrough software technology and solutions in the domain of machine vision and automated inspection.
- ViDi's inspection technology is a result of a 5 year development project at CSEM.

ViDi develops and markets groundbreaking learning-based vision software for the automatic inspection challenges of today's industry. Its core technology builds on a learning engine that aims to "understand" images in order to focus on the relevant parts. This results in a powerful, flexible and straightforward solution for countless challenging machine vision applications like

- print inspection on watch dials
- quality control of medical implant surfaces
- product classification in logistic centers
- web inspection for print and textile
- detection of defects on cutting tools

Our commitments

- We stand behind our products
- We focus on empowering System Integrators to deliver leading edge vision solutions to their customers
- · We operate with a long term strategy, constantly investing in new developments



CPA Group is a holding company that invests in, develops and supports high-tech industrial companies targeting high-growth markets. Its subsidiaries (employing ca. 200 people) are mainly active in the watch, medtech, electronics, semiconductors and photovoltaic industries. It is located in Switzerland (Fribourg region).

# csem

CSEM, Centre Suisse d' Electronique et de Microtechnique (Swiss Center for Electronics and Microtechnology), founded in 1984, is a private applied research and development center specializing in micro- and nanotechnology, photovoltaics, system engineering, microelectronics and communications technologies.

ViDi Systems SA Z.I. du Vivier 22 1690 Villaz-St-Pierre Switzerland T +41 26 653 72 30 F +41 26 653 72 31 info@vidi-systems.com

www.vidi-systems.com

