VIDi

seeing what matters

株式会社エーディーエステック
小嶌 勇輝　(コジマ ユウキ)

COGNEX VIDi Suite

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<変遷>

2012 : ViDi systems社設立
2014 : ViDi Suite 1.3リリース
2016: ViDi Suite 2.0リリース
2017:(米)Cognex社による
吸収合併

VIDI

WINNER
Best Machine Vision Solution
Robotics Business Review Game Changer Awards
San Jose 2015

WINNER
Platinum Level Award
Vision System Design Innovators Awards
Chicago 2015

WINNER
Innovation Award
TÜV SÜD Award for Digitized Industries
Munich 2015

WINNER
Best Innovation
ITMA Future Materials Awards
Milan 2015

WINNER
Best Startup
IMD Business School Award Competition
Lausanne 2015

WINNER
Top 10 Swiss Startups
Equidam Top 10 Undiscovered startups
Amsterdam 2016

FINALIST
Best Technology
Swiss Technology Award Startup Category
Basel 2015

FINALIST
Best Startup
Bosch Venture Forum Startup Pitch Contest
Stuttgart 2015

FINALIST
Best Startup
CVPR VIEW Startup Pitch Contest
Boston 2015

FINALIST
Export Award
Switzerland Global Enterprise, Step-In
Zurich 2016

FINALIST
W.A. De Vigier Prize
Support for young entrepreneurs
Solothurn 2016

FINALIST
Best ICT Technology
Swiss ICT Award Newcomer Category
Luzern 2015

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VIDI

GRAND WINNER ROBOT LAUNCH 2016

VIDI
seeing what matters

Vidi Systems from Switzerland is the overall Grand Winner of the 2016 Robot Launch global startup competition, beating out many US contestants in a field that included sensors, artificial ts and industrial solutions. Overall, the European robotics ear with 8 making The Shortlist for awards. Canada also s, but the rest of The Shortlist were based in the USA, Hong Kong.

rovides deep learning vision software dedicated to classification for a wide range of applications in stry, automotive, logistics center, bottling industry, textile,

ODENSE ROBOTICS AWARD for EUROPEAN STARTUP:

- **Robomotive**
- ViDi Systems
- Halodi
- Tactile Robots
- bridgeOS

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出展：http://robohub.org/vidi-systems-wins-the-robot-launch-2016-competition/

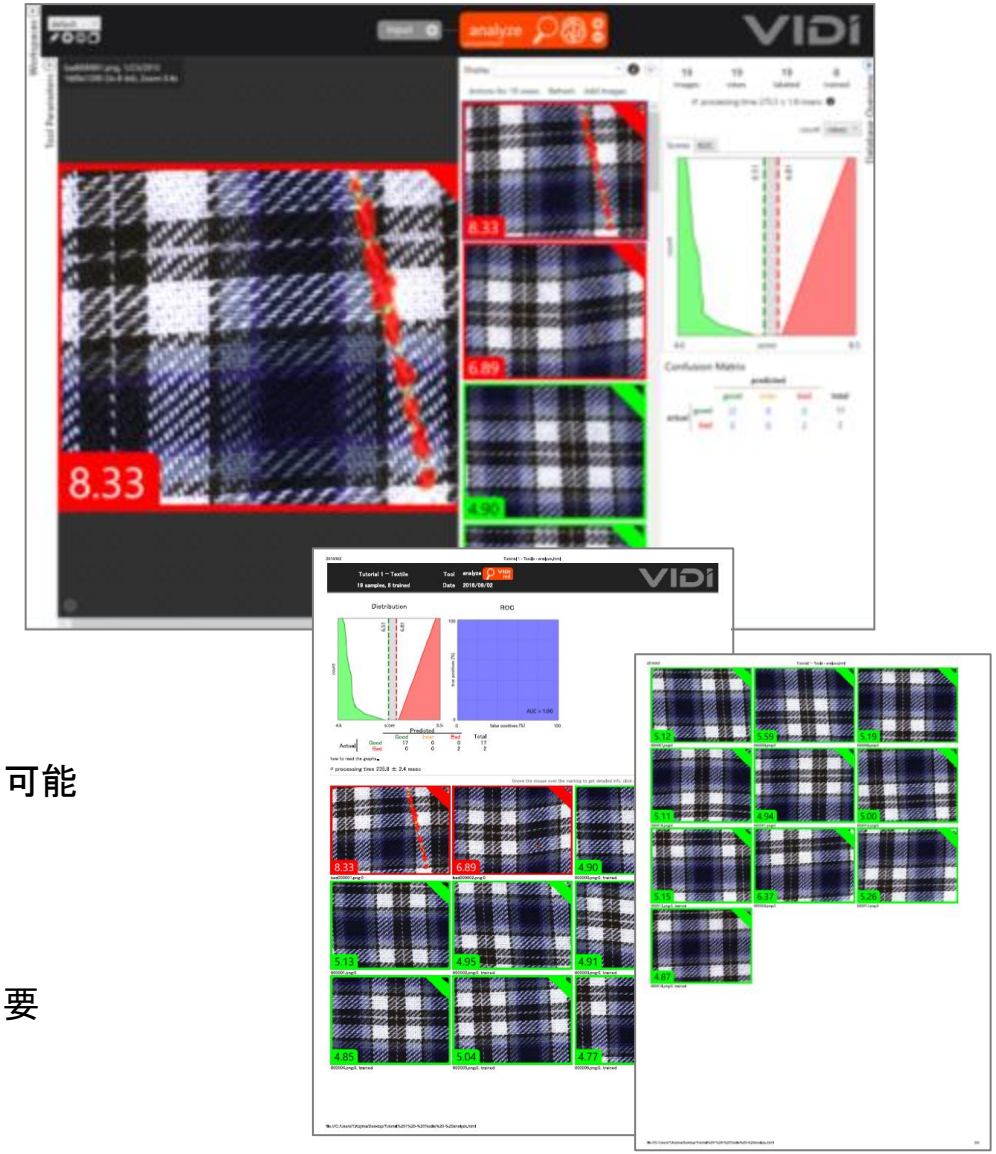
VIDi Suite とは?

- ディープラーニングをベースにした
  産業用画像解析ソフト
  - 位置決め　Positioning
  - 検査　Inspection
  - クラス分け　Classification

- セルフ・ラーニング
  - 複雑なマシンビジョンシステムの開発は不要

- 高性能:
  - 従来手法ではプログラム不能な検査にも適用可能

- GUI ベースの学習と解析
  - ROCチャートによる学習結果の確認
  - コマンドによるハイパーパラメータの設定は不要



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COGNEX VIDi Suite

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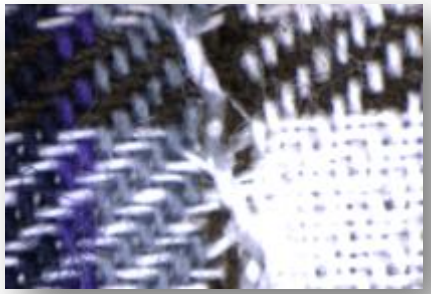
産業用アプリケーションにおける挑戦

1

2



3

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解析手法

1 Collect
(収集)

2 Characterize
(特徴定義)

3 Train
(ラーニング)

4 Validate
(検証)

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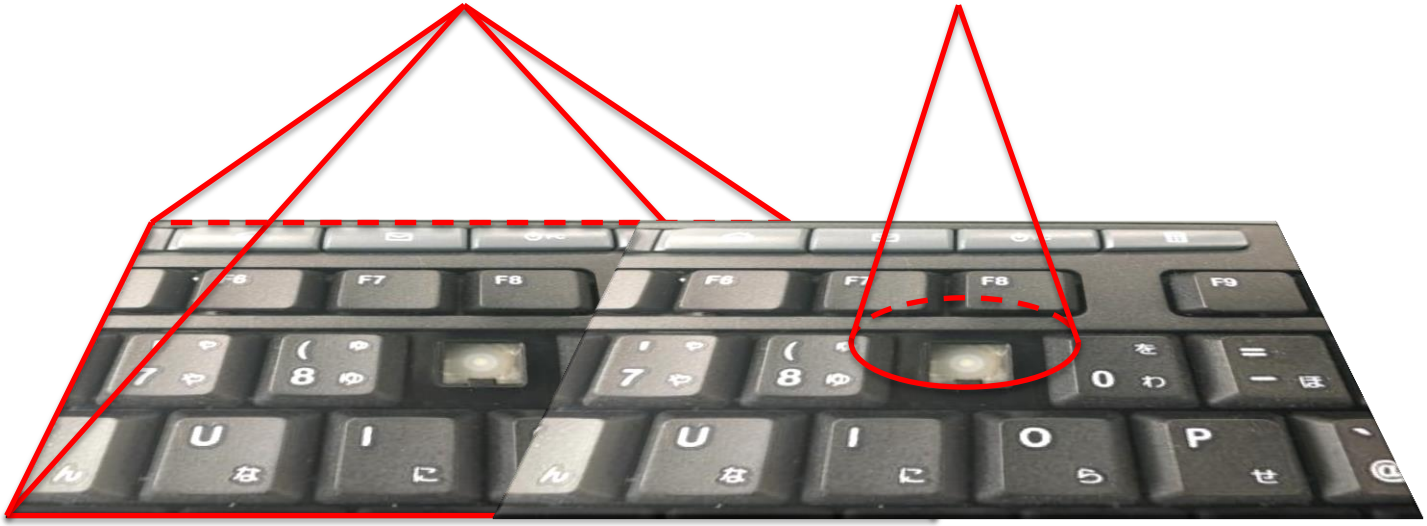
能動的な検知

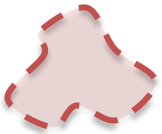


全体

他に類を見ないアーキテクチャ

コア　　解析分類　　ツール

Positioning



Inspection

Classification

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VIDi blue

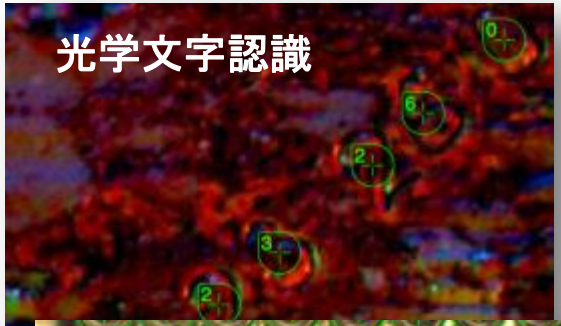
ローカリゼーション

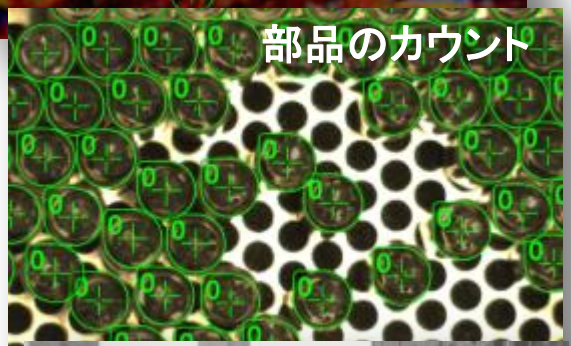
VIDi red

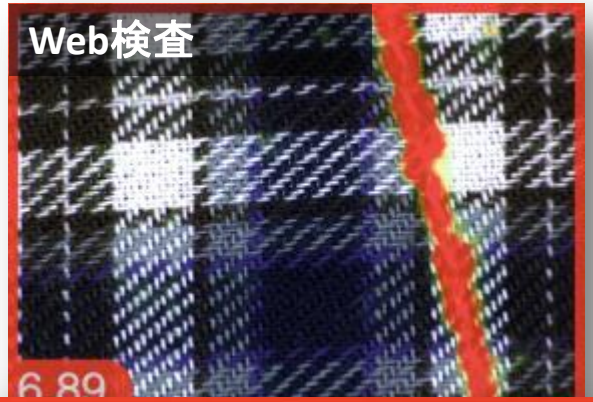
異常検出

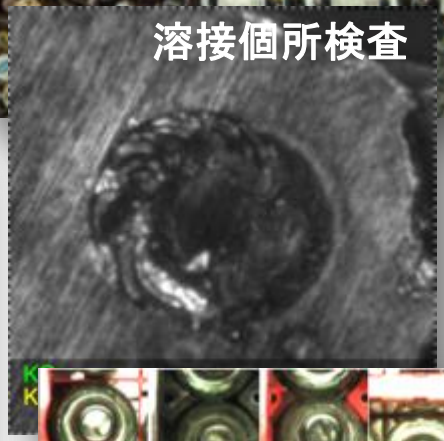
VIDi green

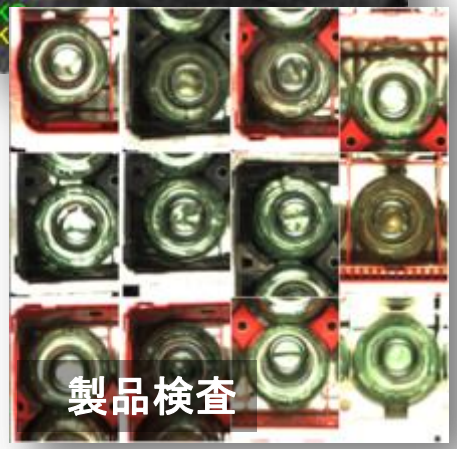
画像タグ付 &クラス分け











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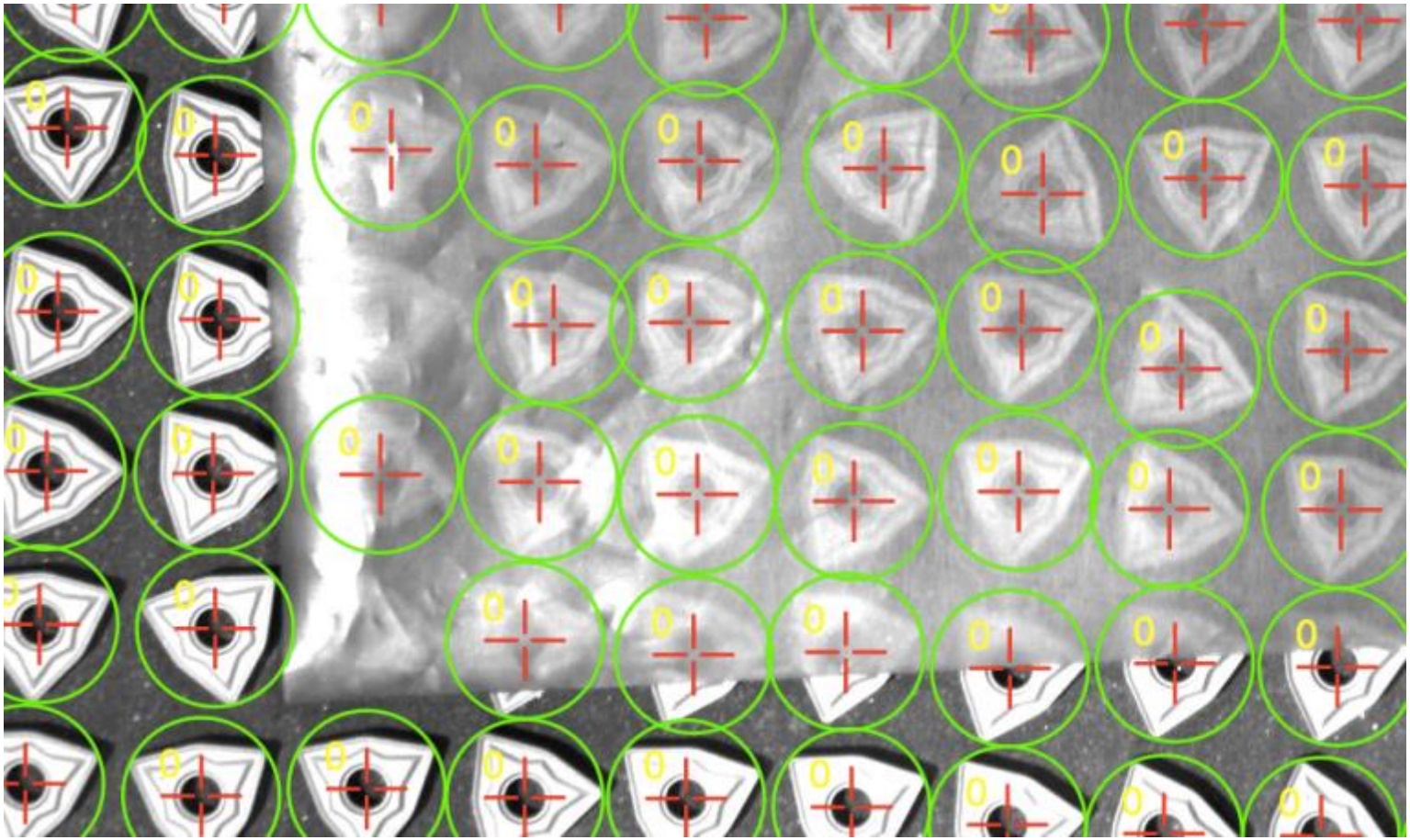
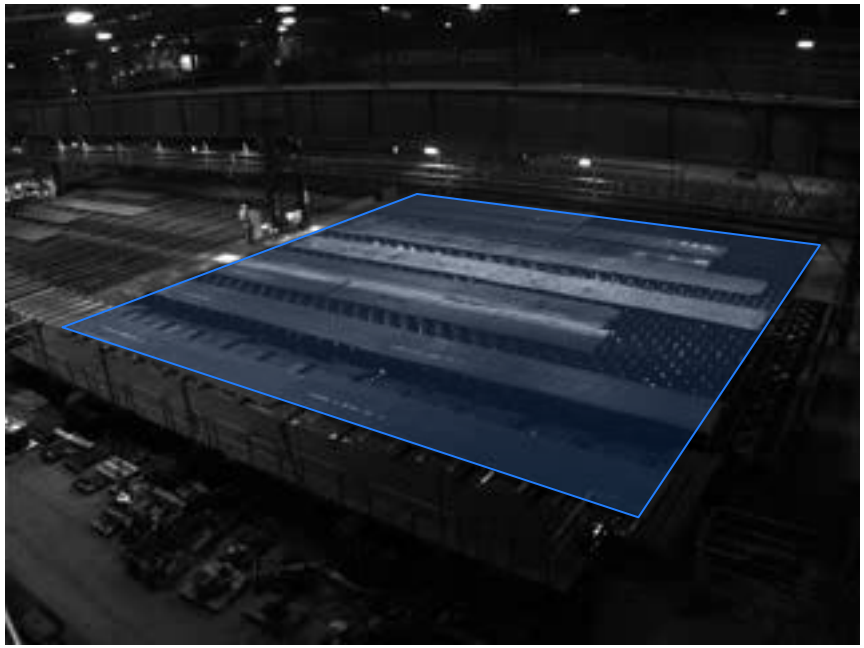
切削刃の位置特定

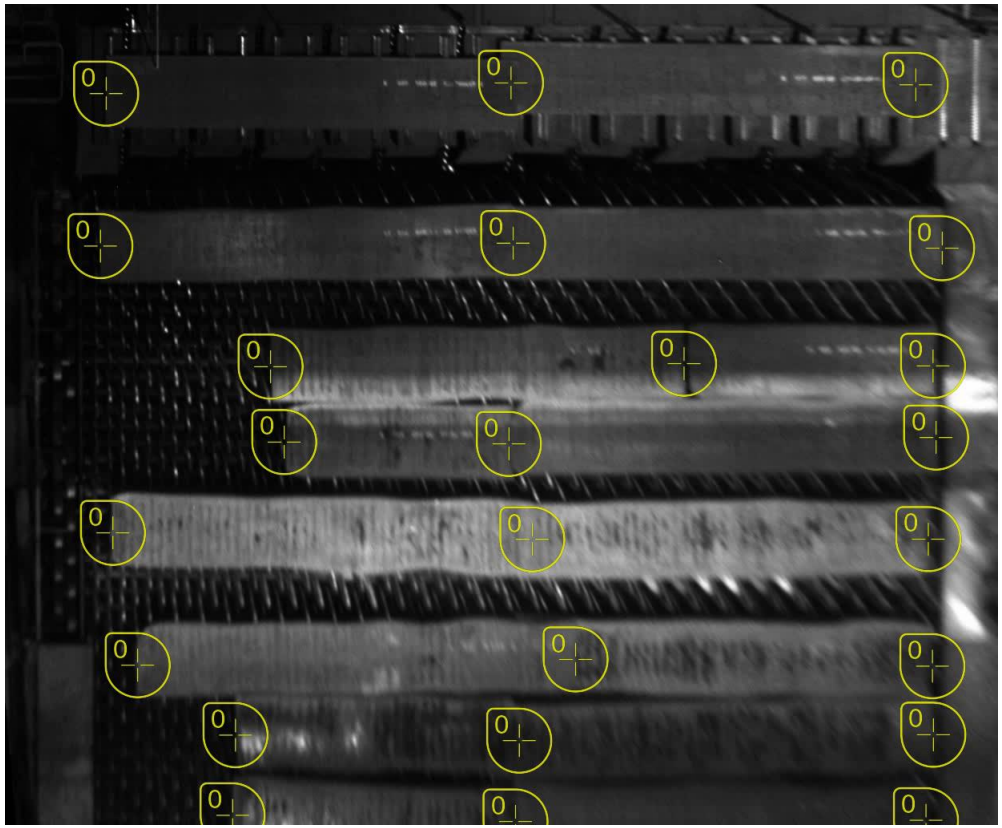


包装に覆われた部品

鉄鋼産業

冷却台上の鉄板の追跡



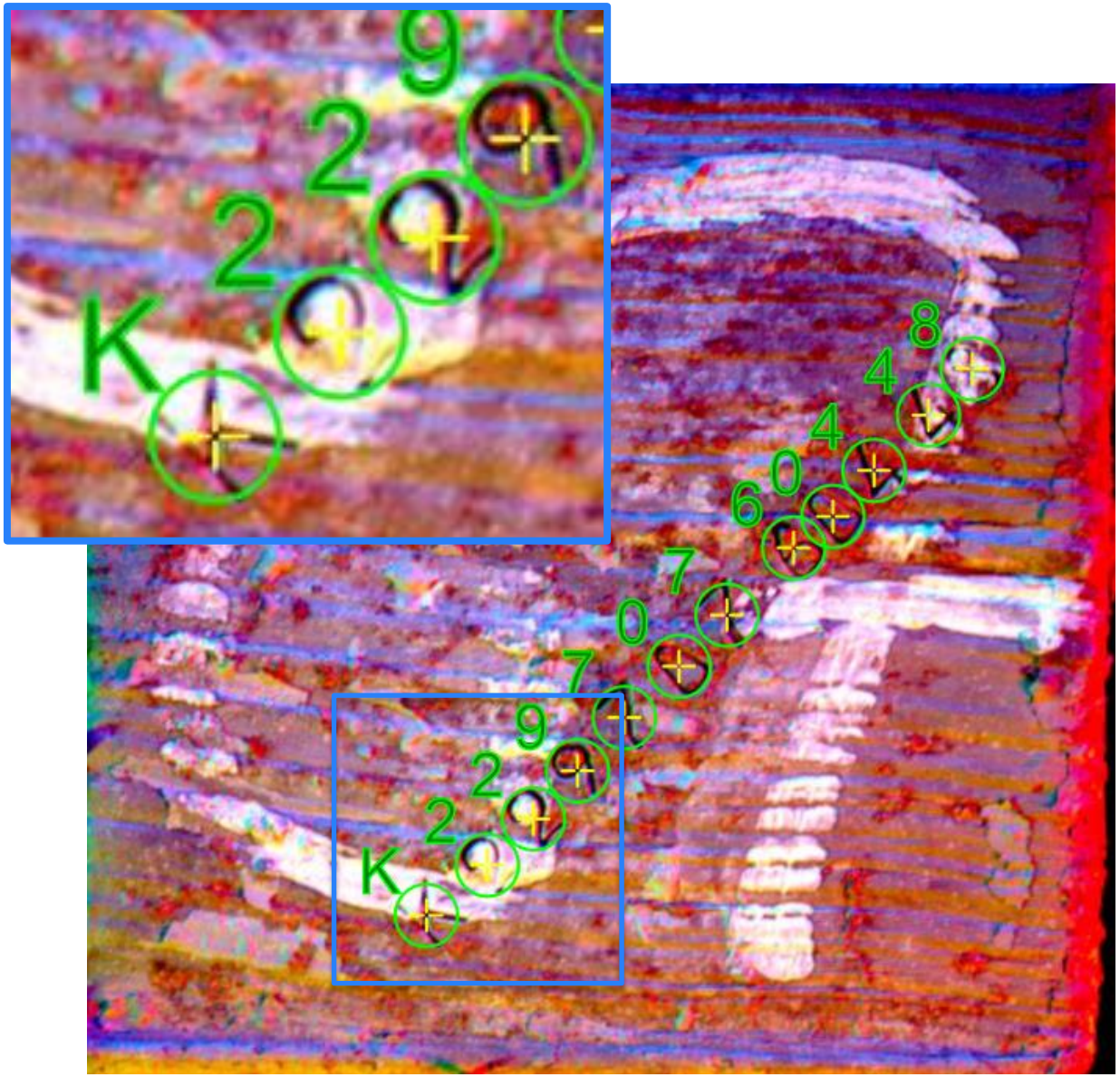


VIDi blue

Optical
Character
Recognition

光学的文字認識

認識率 ＞ **98%**
(エラー訂正含む)



画像提供：images courtesy by SMS Concast AG, Zürich

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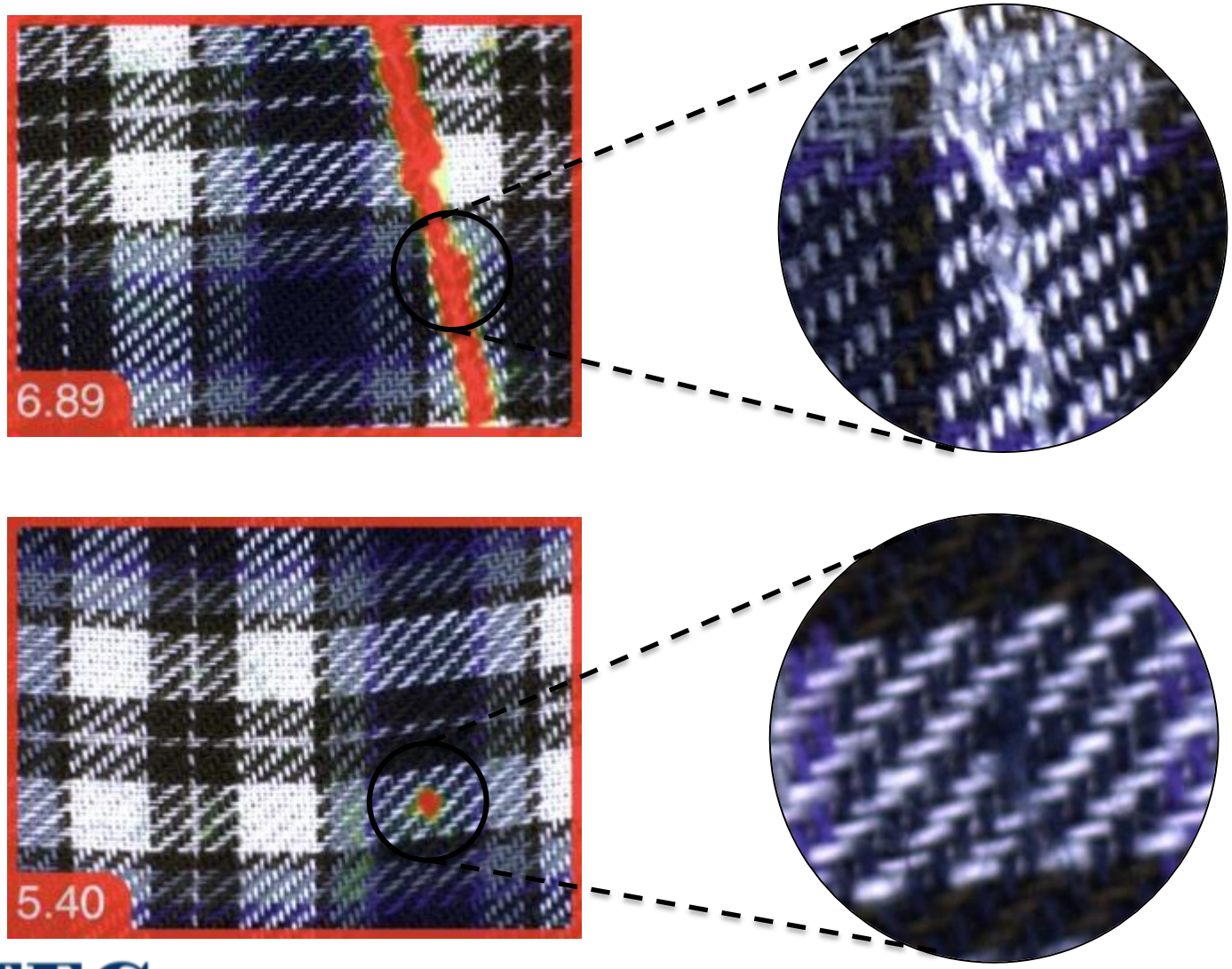
繊維検査



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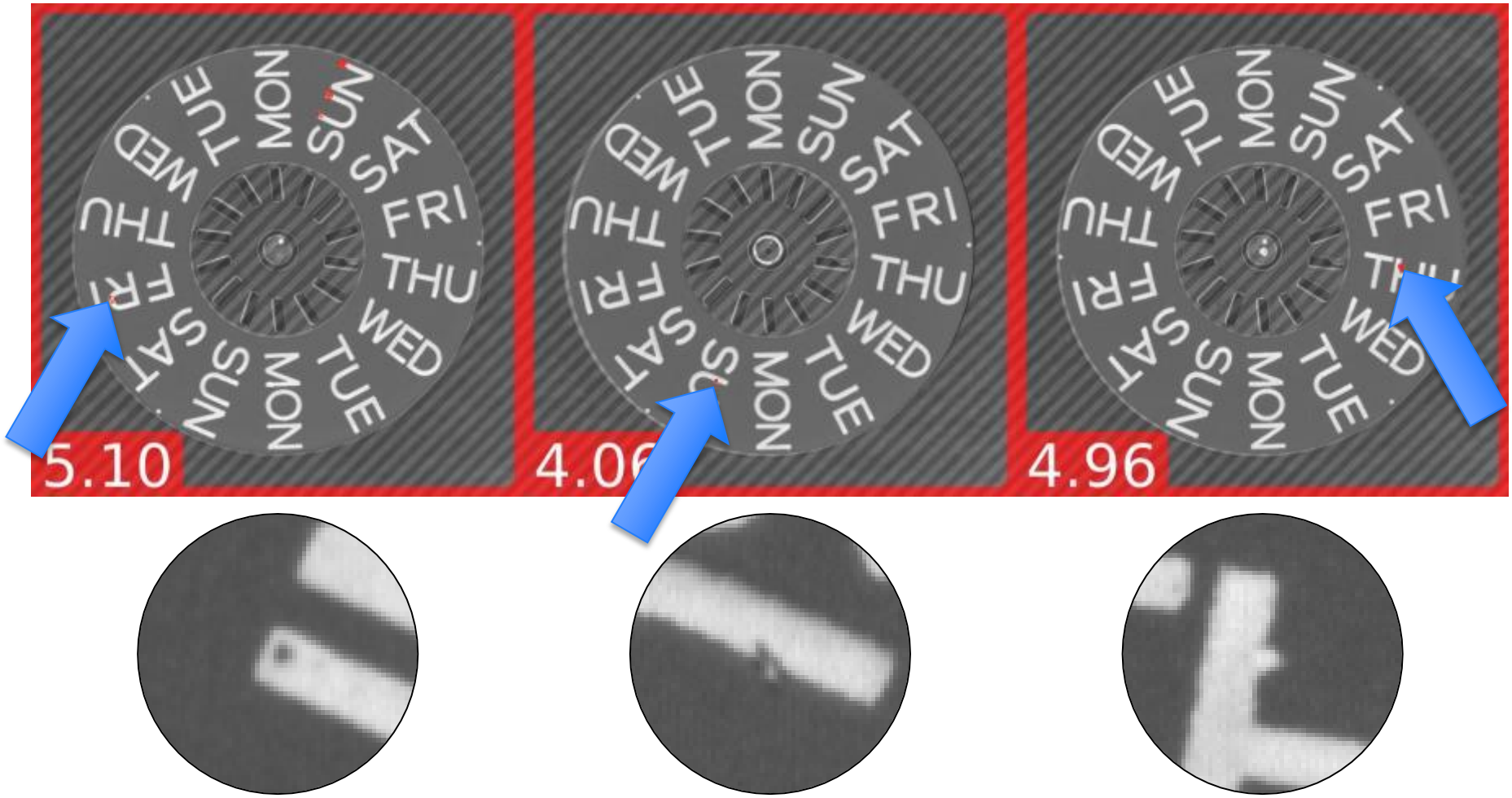
印刷 印字検査
(曜日日スタンプ)



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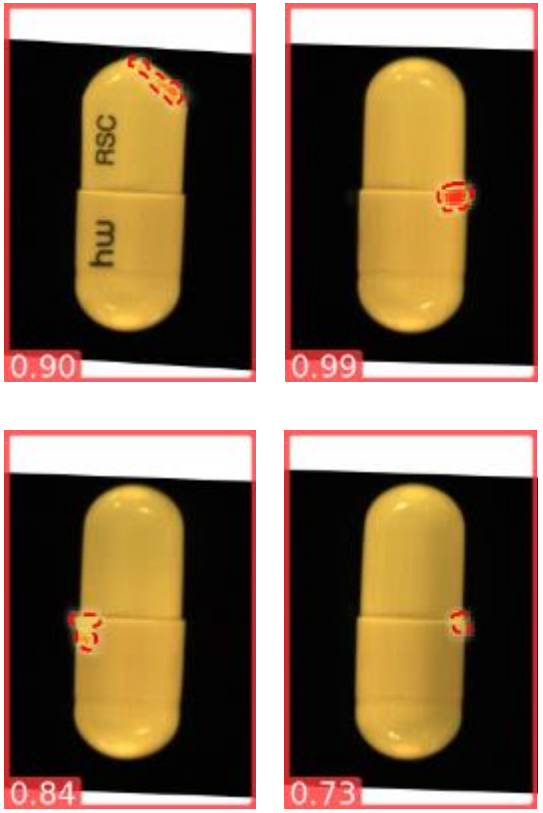
カプセル

ヘコミ、カケの検査



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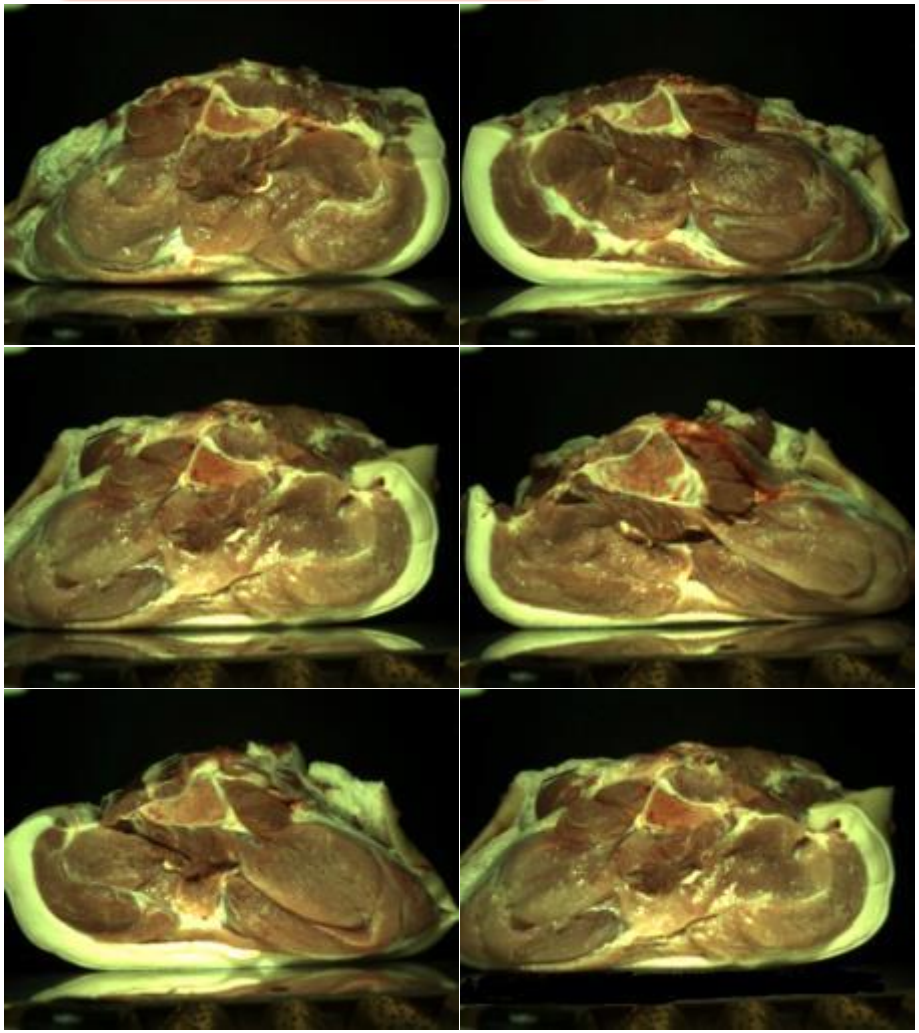
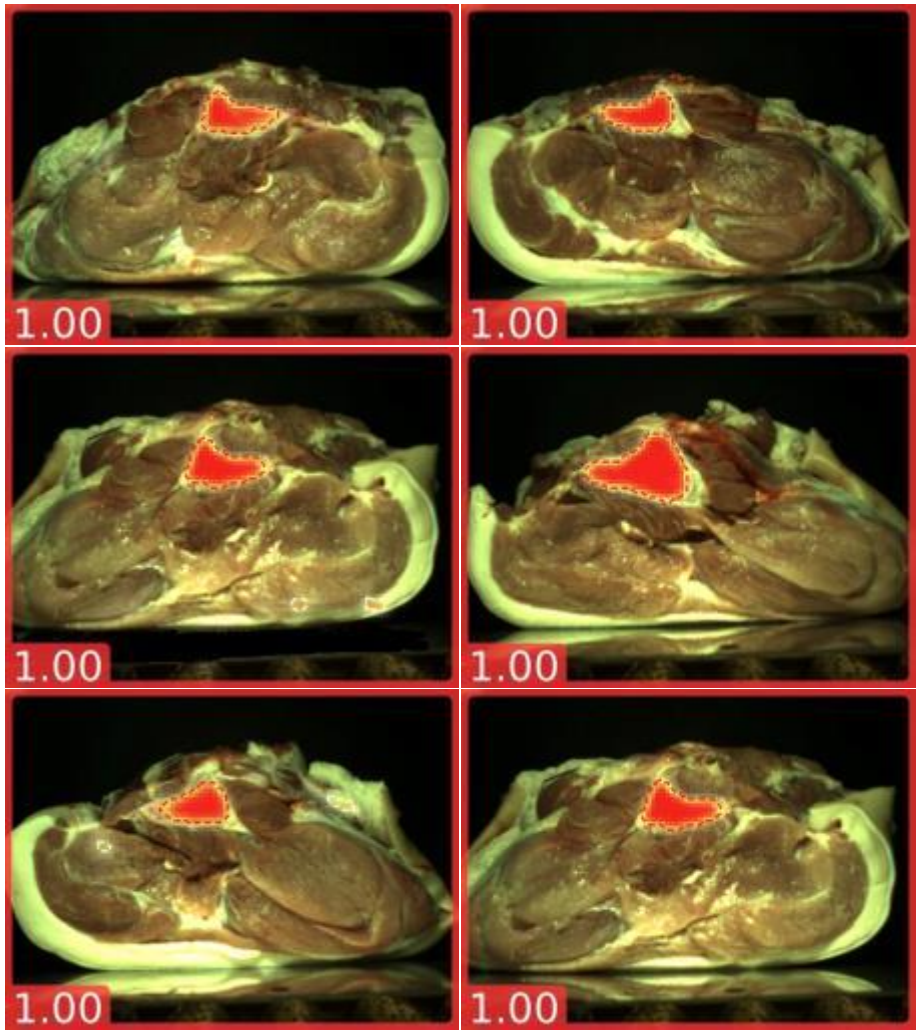
骨の検出

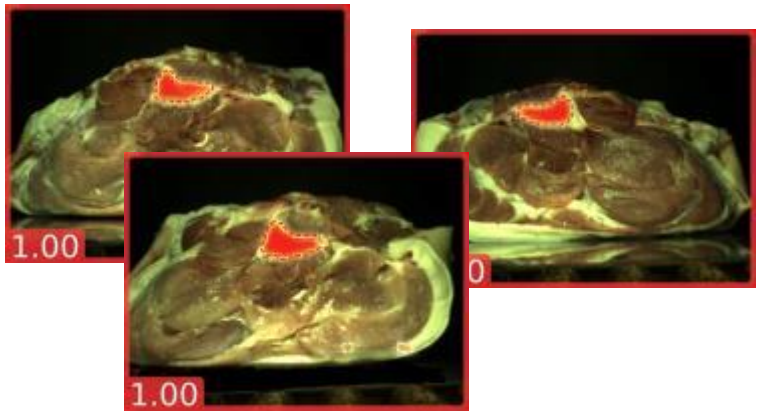




VIDi

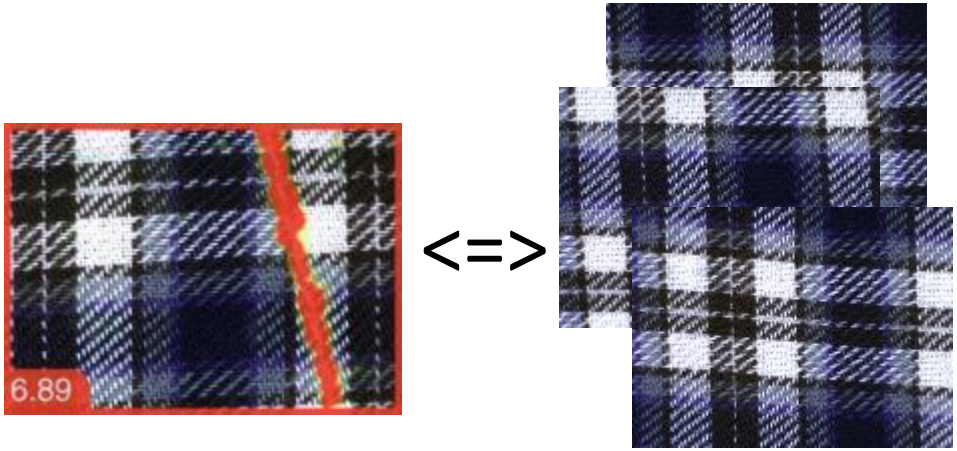
VIDi red

Supervised



学習：OK品、NG品

Unsupervised



学習：OK品のみ

	Supervised	Unsupervised
未知のNGの反応	×	△
線形状、クラック系のNG	○	×
一部の変性のNG	×	○

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物流センター

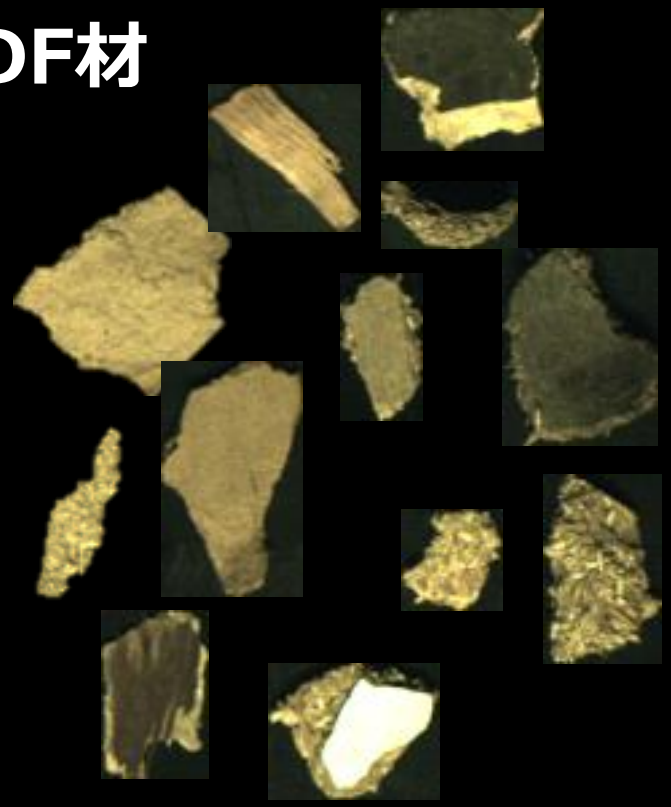
多数のクラスに分けて画像選別

木材選別

本物の
材木

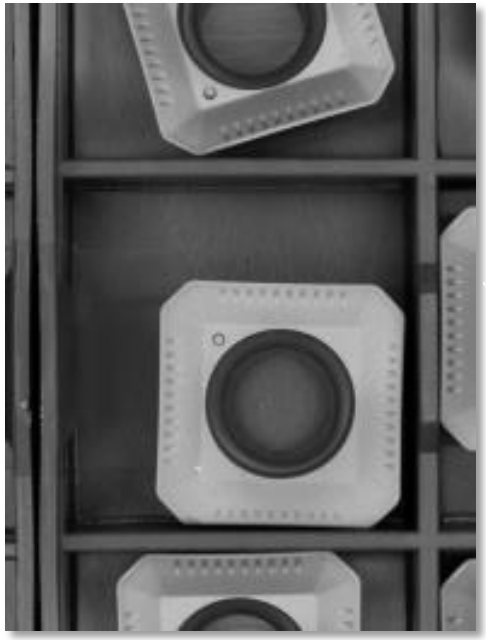
vs

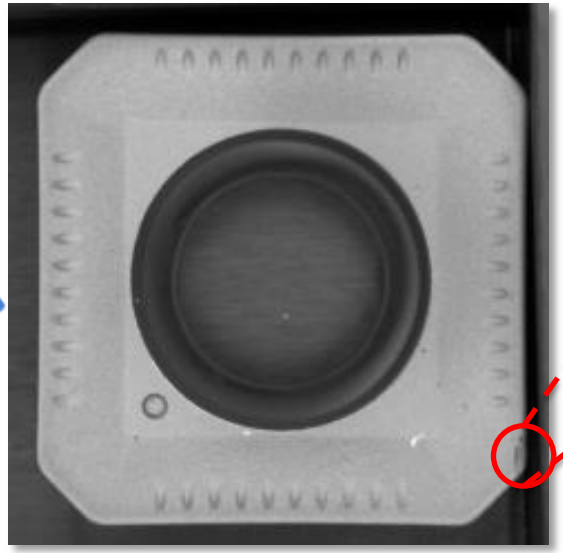
MDF材

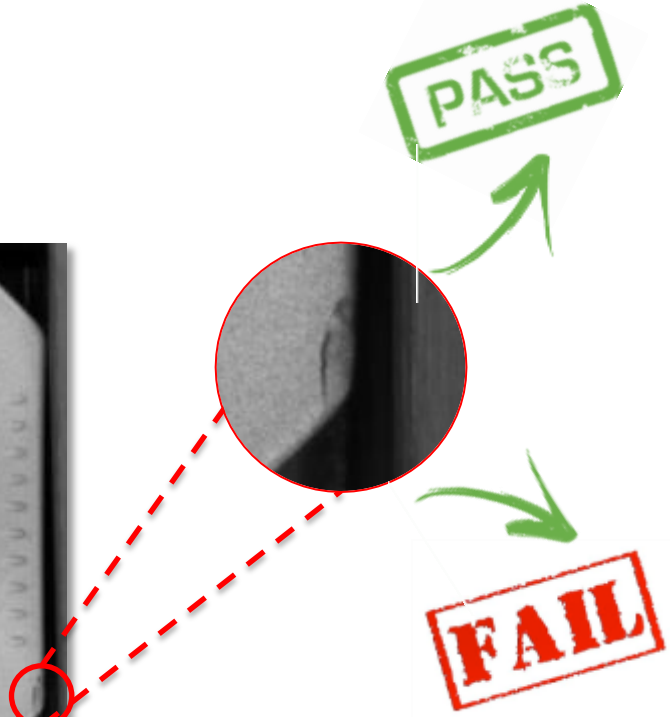


98.2% 正解

VIDi







部品を認識

VIDi blue

欠陥を発見

VIDi red

クラス化

VIDi green

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VIDI

メリット

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500’000人
品質検査員が米国にいます。
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http://finance.yahoo.com/news/america-10-fastest-shrinking-companies-145745947.html

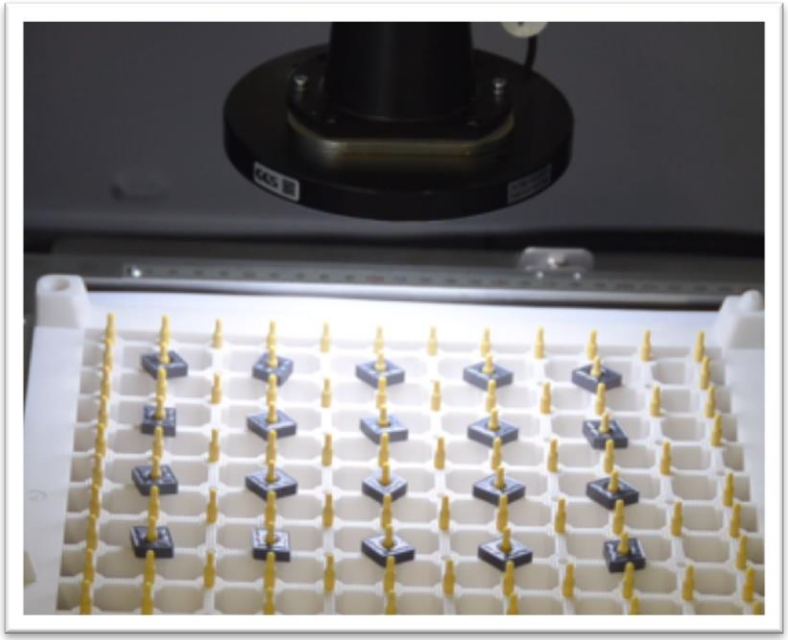
VIDI

主な優位性:
品質検査員を上回る実力

導入前

60 名の品質検査員

VIDI Suite



5 台の自動マシン

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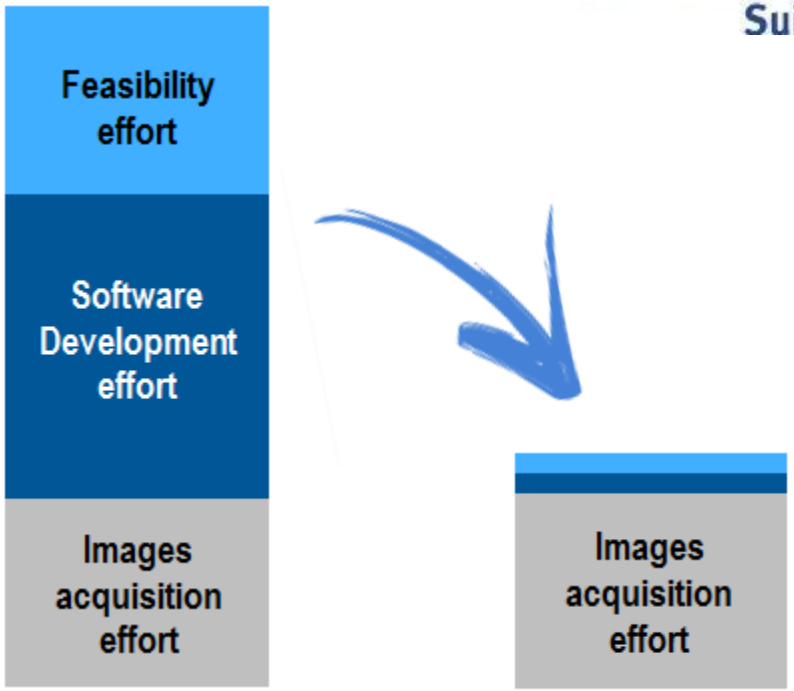
主な優位点:
導入工数の短縮

従来型の画像処理手法

VIDI Suite

導入前



現在

60+ 日に渡る開発

0.5 日の開発

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ViDi Suite

- 目視検査並みの精度
- 自己学習
- ハイパフォーマンス

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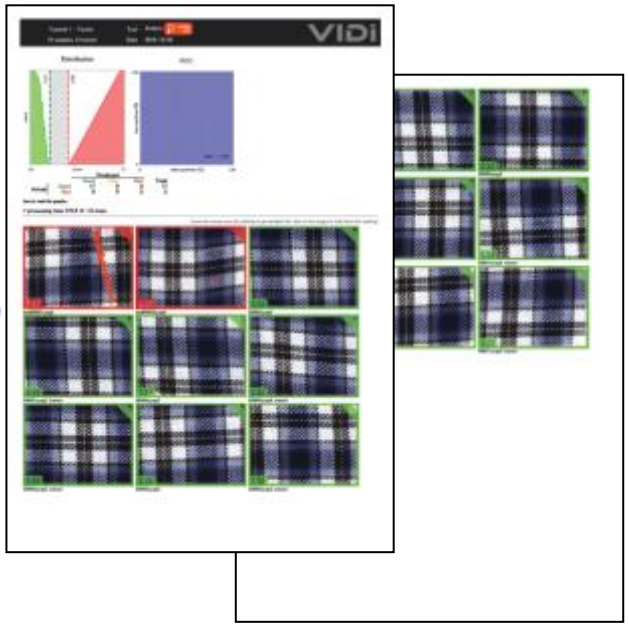
レポート サービス



ADSTEC HP内: http://www.ads-tec.co.jp/vidi-sample-report/

COGNEX VIDI

Hunting defects

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