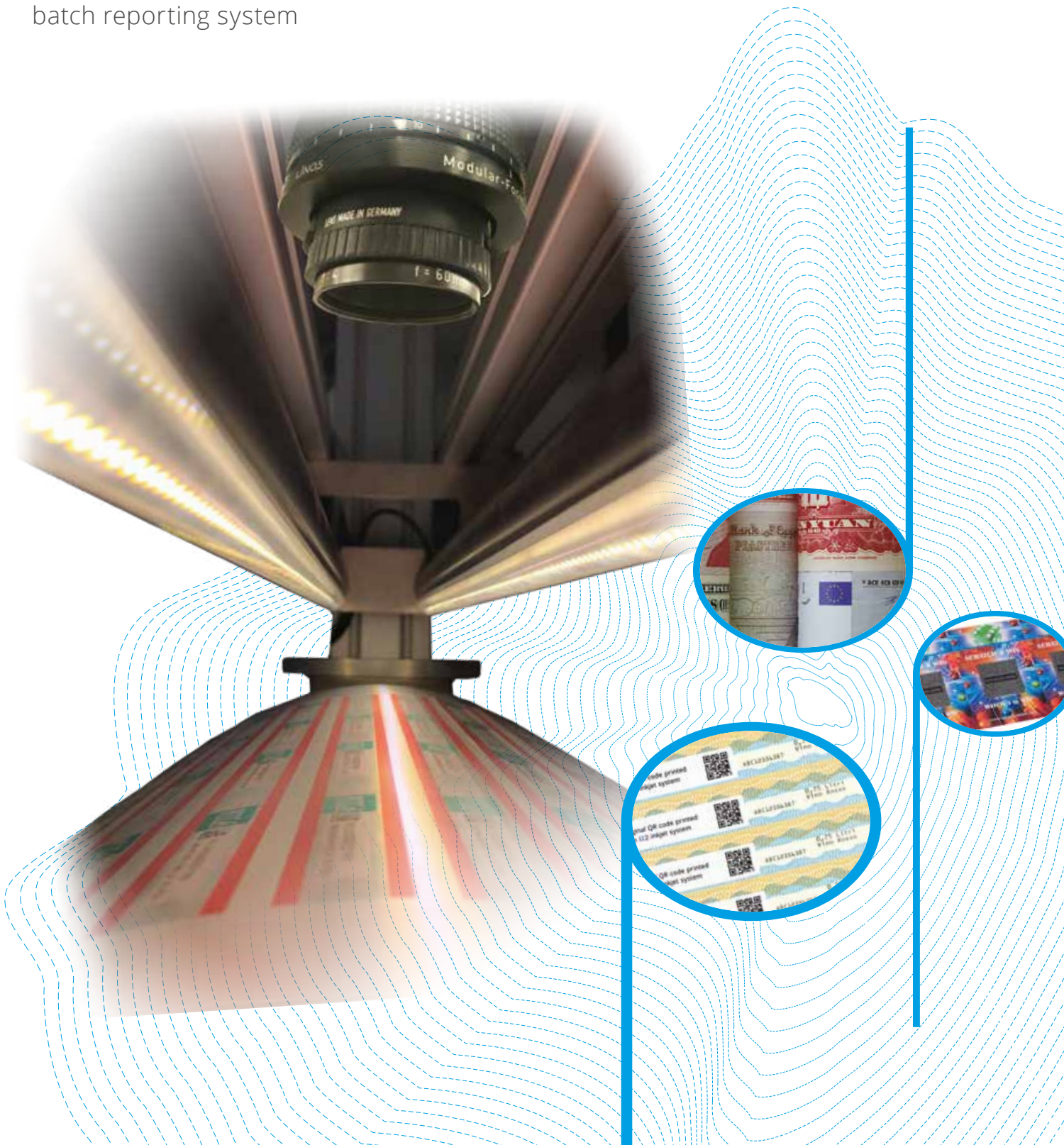VERIFICATION AND INSPECTION SYSTEM

VERO LineScan

- High speed combined verification and inspection
- RGB or monochrome image processing
- Scalable image processing hardware
- Batch based production run with integrated
  batch reporting system

VERO LineScan

VERO LineScan is an advanced machine vision system which combines 1D/2D/OCR/OCV decoding of variable data with print quality inspection in one high performance inspection system. It can be supplied with different configurations in order to cope with virtually any printing process, from single label print inspection to large scale, fast digital printing on narrow web processes.
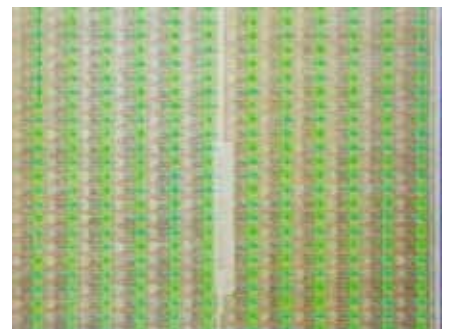
Any combination of alphanumeric strings and 1D/2D codes are decoded and verified in real-time against the expected data, available on a database or fixed during the batch run. The decoding is combined with a print quality inspection (ink in excess or missing, tone mismatch, blurs, streaks, smears, foreign ink/graphics and etc.), on print areas with static content.

In case of verification against a database (option available for serialized production) **VERO** LineScan includes data reconciliation procedures that can be customized according to the specific printing or converting process in order to guarantee secured serialised production batches.

Barcode grading is an integral part of data inspection. Grades are in compliance with the standards 15O/IEC 15415, 15O/IEC 15416, AIM DPM-1-2006, and SEMI T10. Double camera configurations are available for the front/back side inspection (duplex system configuration).
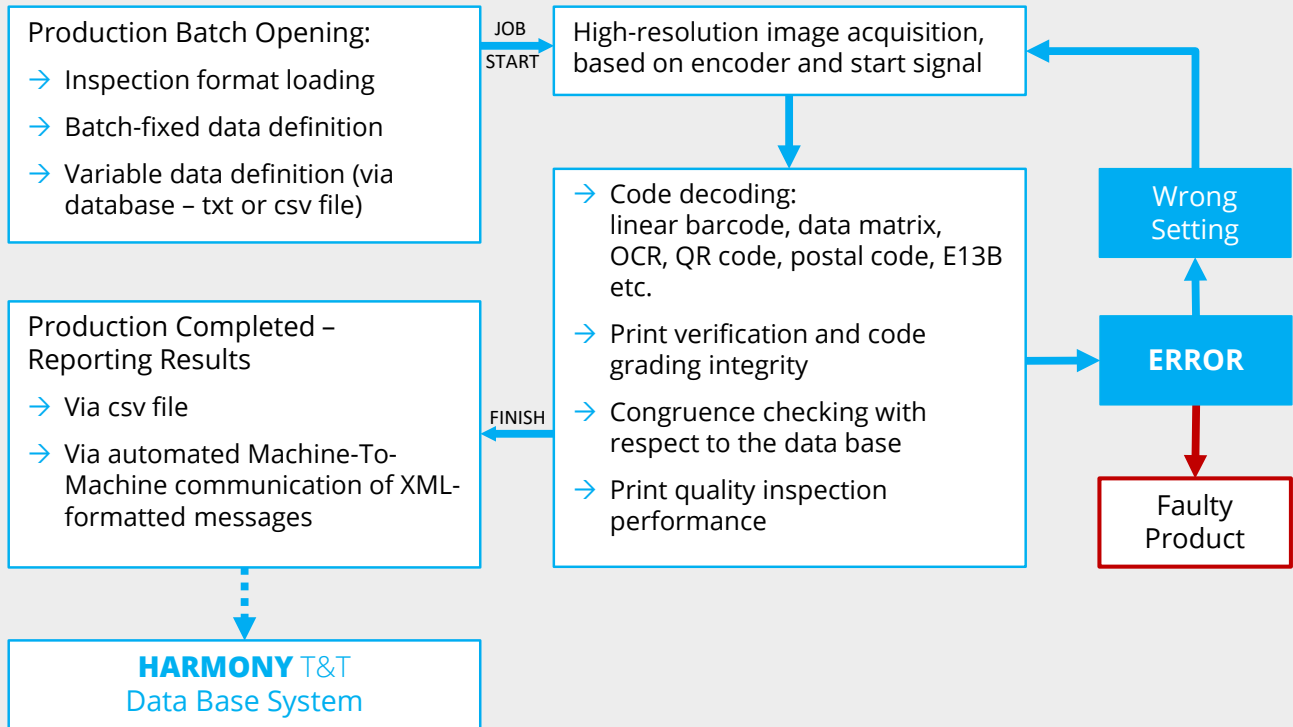
Key Features & Benefits

- High reading and verification precision
- Reliable defect detection
- Alarm and warning functions for quick defect correction
- Versatile application to ensure high levels of quality
- 100% job inspection
- RGB or monochrome Image processing
- Flexible on image acquisition hardware, from LineScan to CIS or area scan camera
- Batch based production run with integrated batch reporting system
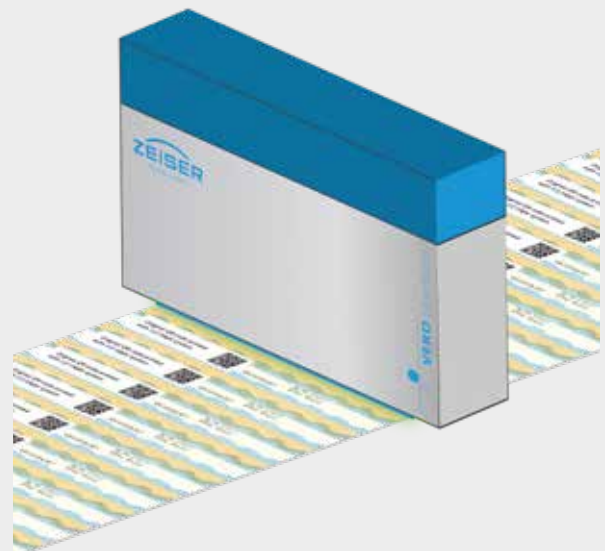
VERO LineScan – Functions and Process Flow

The **VERO** LineScan system is equipped with a powerful multi-thread software for decoding variable data and for inspecting the print quality with advanced features.The software is optimized for a simple and efficient use of the system. With our solution, based on scalable, multi-core parallel processing, the control of digital printing of variable data is carried out with utmost precision at the highest speed ranges required by the most advanced digital printing processes.

Production Batch Opening:
- → Inspection format loading
- → Batch-fixed data definition
- → Variable data definition (via database – txt or csv file)

JOB START →

High-resolution image acquisition, based on encoder and start signal

- → Code decoding:
  linear barcode, data matrix, OCR, QR code, postal code, E13B etc.
- → Print verification and code grading integrity
- → Congruence checking with respect to the data base
- → Print quality inspection performance

Wrong Setting

ERROR

Faulty Product

Production Completed – Reporting Results
- → Via csv file
- → Via automated Machine-To-Machine communication of XML-formatted messages

FINISH ←

HARMONY T&T
Data Base System

Inspection Samples

3D Animation

Technical Specifications

Technical specifications	Machine model: **VERO** LineScan
Field of view	Up to 520 mm (standard solution)
Resolution	300 dpi (600 dpi on request)
Maximum speed	150 m/min (300 m/min on request)
Ambient temperature	0–40° C (32–104° F) (higher temperatures possible with climate control unit)
Relative air moisture	1–90% (not condensed)
Camera	
Type	Linear cameras with up to 8K/line pixel. Monochrome or RGB colour CIS image acquisition – standard resolution: 600 dpi
User Interface	
Monitor	From 17" to 23" TFT multi-touch screen
HMI	• User-friendly, password protected selective access • Batch-based production runs • Recipe-based inspection settings • Intuitive recipe set-up procedure
Image Processing and Analysis	
	• Visualization on monitor of both results and pictures of codes with the possibility of zooming and pan on the global image • Real time display of the complete history of the last images with the defects found
Hardware Actions	
	Acoustic/light signaling. digital outputs for PASS/FAIL, line stop, etc.: possibility to define a set of "critical" alarm for consecutive errors (parameter available on the HMI)
Software Actions	
	Warning messages – on-screen alarms displaying the "non-compliant" code, possibility of saving the statistics and image of the defect. Generation of a batch report file that can be transferred externally via "Memory Stick" (USB pen drive) or on a network accessible via a path to a shared folder on the network or on the system's hard disk.
Options	
	Front to back module – 21 CFR Part 11 Compliance – MES/Automated M2M interfaces via XML messages – PDF Proofing

ZEISER offers customized system and CONTROLLER configurations to meet your application requirements

• Production management software (i.e. T&T): **HARMONY**
• Inkjet printers: **FLUENTE**
• Curing devices: **SERENO**
• Transport systems: **VIVO**
• Verification systems: **VERO**

ZEISER
CREATING IDENTITY