Inspection systems and industry 4.0:
Connected glass production for optimal quality and processes

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EVOLUTION OF PROCESSES IN GLASS

Mechanization

Mass production, assembly line

Production and quality automation and digitalization

Today
Smart factory, collaborative network

Complex systems, big data, decentralized decisions...
THE VISION:

✔ Automation of quality inspection
✔ Supply high quality information data
Touch & Inspect

Field proven portfolio for Plate Inspection

- Multiple applications
  - Size, Position and Shape of Plates
  - Surface and Edge Inspection
  - Coating and Color Homogeneity
  - Print Inspection
  - Rectangular and Freeform
  - Classification, Grading and Sorting
  - ...

- Ready-to-use for factory automation
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Modular Inspection Products realized with modern IT technologies

- Advanced LED Lightings
  - Smart with remote control
  - Simple cost effective
  - High speed pattern- and multi-mode switching
  - Optional wireless

smart Line compact
classic Line
classic Line GEL / GEL Advanced
Backline LED
smart Bar
Touch & Inspect

Modular Inspection Products realized with modern IT technologies

Smart Camera

- High speed line scan camera
  16K with 1360 MByte / sec
- Color or monochrome
- Multi Core & FPGA data preprocessing
- Image Fusion and Super-Resolution algorithms
- Optional wireless data transfer

Application oriented software download on demand

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Services Oriented Architecture

- Video Capturing
- Classifiers I
- Detection II
- Profinet
- Web Interfaces
- Realtime I/O
- Service Process
Modular Inspection Products realized with modern IT technologies

**Mobile Terminals**
- Application oriented User Interface for touch devices
  - One Terminal can access several inspection systems
  - Multiple Terminals can access same inspection system
- Maintenance Information
- Display of reports and production summary

**Workstations**
- Advanced processing
- Data storage and collaboration
- Data mining and report generation

Services Oriented Architecture
THE VISION:

- Automation of quality inspection
- Supply high quality information data
- Support global production optimization
- Standardize communication for effective process analysis
- Enhance global competitiveness


EPROMI – Quality Data Management

Combines huge data in your company to better understand the relationships between different plants.

- Daily 20 TB
  Combined data at a Cie with 10 plants

- Daily 2 TB
  Combined data at 1 plant with 3 lines

- Daily 700 GB
  Inspection data at 1 glass line

Extracts and correlates the essential information at each company level.

Combines information data from all line sensors & inspection equipments.
EPROMI – Powerful Reporting Tool

Integrates flexible configuration for each hierarchy level

analyzes production data and support local decision-making

Generates real time analysis and propose standard reporting tools
Optimizes:
- Strategy
- Benchmarking
- Reporting
- production
- product
- quality
- efficiency

EPROMI – Optimized decision making support

Efficiency, Supplier, Quality Decisions, ...
Yield Management, Root Causes, ...
Defect Data, Images, Trends, ...

HQ
Plant
Machine-line
The Next Step to:

INDUSTRIE 4.0

- MOBILITÄT
- LOGISTIK
- STROMNETZE
- PRODUKTE
- GEBÄUDE
Thank you for your attention