



WEB-EYE, Version 10

WEB-EYE

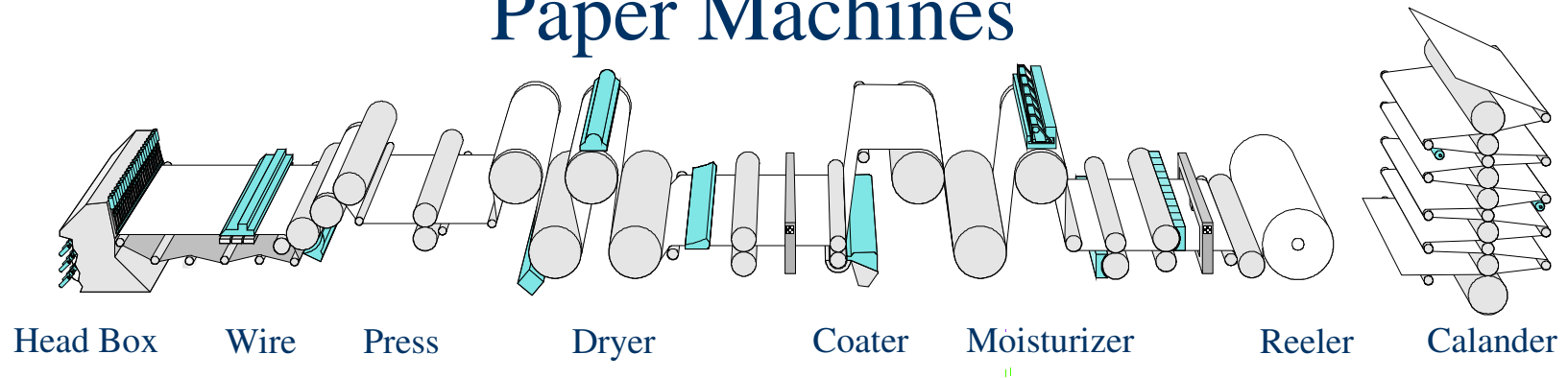
Digital Web Break Monitoring (WBM)



Digital Web Break Monitoring „Web-Eye“

Einsatzgebiete

Paper Machines



Plastics

Press Rooms

Transport Systems



Digital Web Break Monitoring „Web-Eye“

Warum ein spezielles Programm?



Normale Videoaufzeichnung (Security)

- 1...10 Bilder / Sekunde
- Automatische Belichtungszeit
- Automatische Blende

Web Break Aufzeichnung

- 50..200 Bilder pro Sekunde je Kamera
- Manuelle/Feste Belichtungszeit
- Manuelle/Feste Blende
- Synchrones Trending
- Bahnkantenüberwachung z.B. Randaufsteller



Digital Web Break Monitoring „Web-Eye“

Farbe oder S/W? Beide sind verfügbar

Bezeichnung	S/W	Farbe
Lichtbedarf	100%	200%
Speicherplatz	100%	300%
Rechnerleistung	100%	300%
Kamerakosten	100%	160%



Digital Web Break Monitoring „Web-Eye“

Advantages

- Improved runability
- Improved Efficiency
- Improved Machine Knowledge
- More Detail information regarding the web break cause



Digital Web Break Monitoring „Web-Eye“

Properties

- Brilliant pictures
- Intuitive operation
- Edge tracking, Edge flip detection
- Long term historical data
- Low maintenance
- Robust
- Modular concept, easy to extend
- „Software“-Trigger



Digital Web Break Monitoring „Web-Eye“

Technical Data

- Each picture has a time and date stamp in mS resolution
- Up to 4095 web leak sequences in direct access
- Wear and tear free recording to RAM
- Centralized time synchronization
- Camera position synchronization
- Picture content trending to localize the web break event
- Can switch between two recording speeds
- Standard PC-Hardware



Digital Web Break Monitoring „Web-Eye“

Technical Data

- Microsoft Windows-XP oder Windows-7, 32 Bit Plattform
- GigE Ethernet
- Modular concept, easy to extend
- Adaptable to any language
- Unlimited number of cameras
- Picture synchronous acquisition of analog and binary process data
- LED Flashlight and Metal Halide lighting
- Up to 255 machine speeds can be acquired
- Integrates into Parsytec/ISRA WIS-System to display synchronized WIS and WBM pictures



Digital Web Break Monitoring „Web-Eye“

Technical Data

- Lenses from Pinhole to Tele
- Exposure time from 1/50 to 1/10000 Sec.
- LED Flash time from 1/3,000 to 1/100,000 Sec.
- Casing protection class IP65
- Vortex air cooling
- Up to 200 frames / sec.
- Sensitivity from 0.01 Lux
- Cameras:
 - B&W
 - Color
 - Analog and GigE



Digital Web Break Monitoring „Web-Eye“

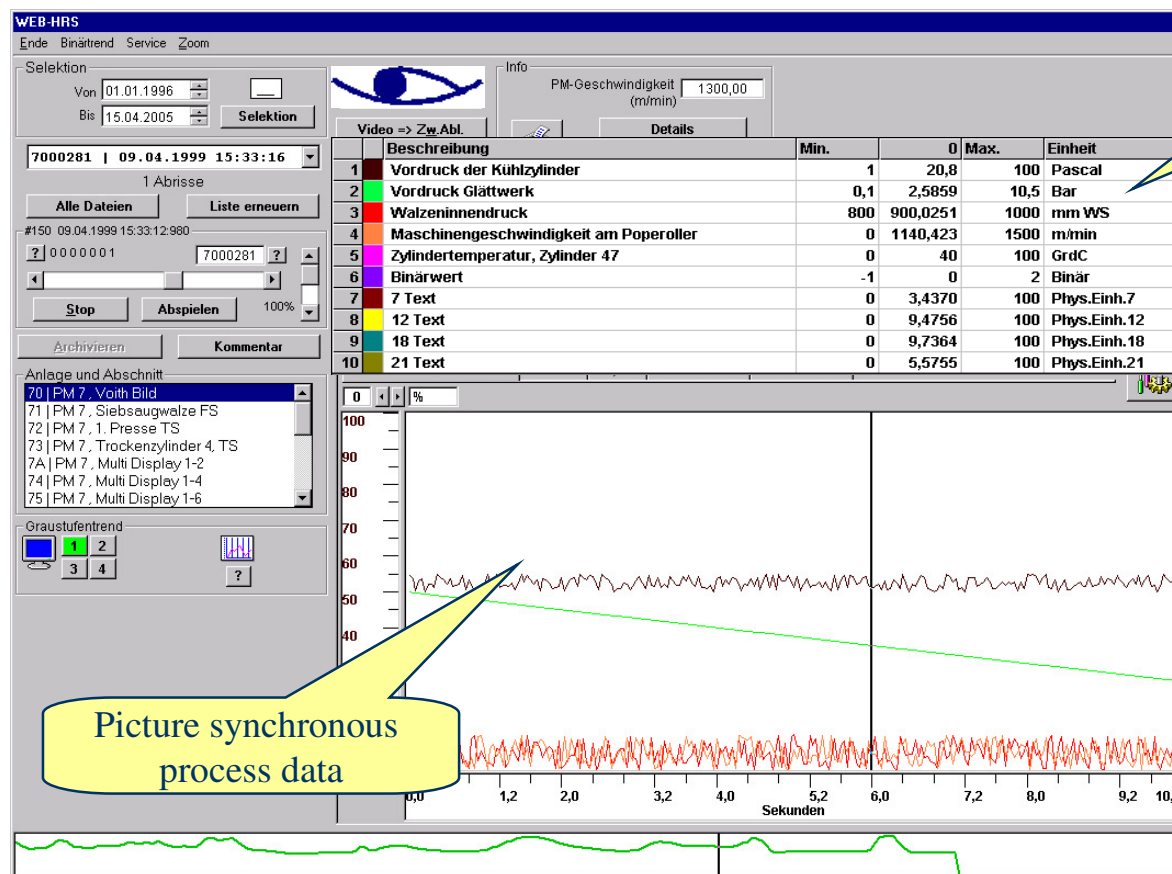
Up to 16 sequences displayed simultaneously





Digital Web Break Monitoring „Web-Eye“

Synchronous display of pictures and process data



Numerical process data

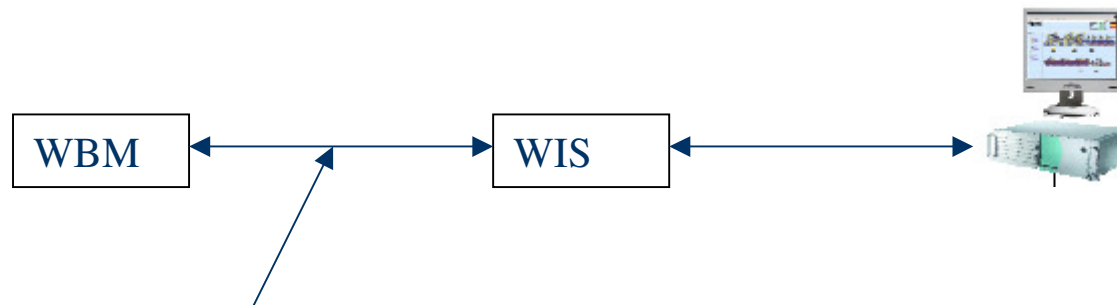
Export to Microsoft Excel

Picture synchronous
process data



Digital Web Break Monitoring „Web-Eye“

WIS / WBM Integrated Display



- WIS „sees“ a defect and requests pictures from WBM
- WBM „sees“ a defect (ROI Analysis) and sends pictures to WIS
- Photocells detect a web break, WBM sends pictures to WIS

WIS analyzes the WBM pictures using the same algorithm as it uses for its own picture analysis

Advantage:

- Proven algorithms
- Common classification
- No redundant functionality



Digital Web Break Monitoring „Web-Eye“

Picture quality and machine speed

Frame frequency, paper movement and machine speed

Speed [m/min]	Frame frequency			
	25 fps	50 fps	100 fps	200 fps
400	267 mm	133 mm	67 mm	33 mm
800	533 mm	267 mm	133 mm	67 mm
1.200	800 mm	400 mm	200 mm	100 mm
1.500	1000 mm	500 mm	250 mm	125 mm
1.800	1200 mm	600 mm	300 mm	150 mm
2.000	1333 mm	667 mm	333 mm	167 mm
2.200	1467 mm	733 mm	367 mm	183 mm

Exposure time and machine speed

Paper movement (mm) = (V (m/min) / 60 (Sec)) * 1000 * (1 / Exposure time (Sec))

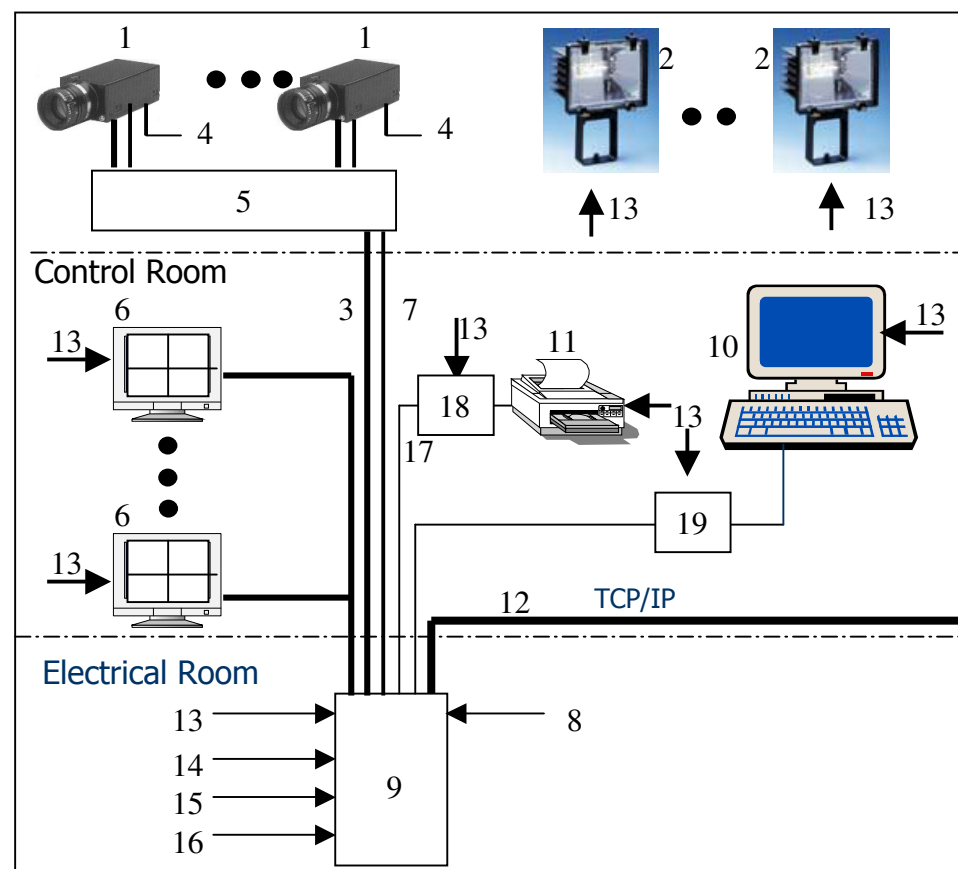
Exp.Time [Sek]	Web movement at...			
	800 m/min	1500 m/min	2000 m/min	2200 m/min
1/2000	6,7 mm	12,5 mm	16,7 mm	18,3 mm
1/4000	3,3 mm	6,3 mm	8,3 mm	9,2 mm
1/10000	1,3 mm	2,5 mm	3,3 mm	3,7 mm
1/15000	0,9 mm	1,7 mm	2,2 mm	2,4 mm



Digital Web Break Monitoring „Web-Eye“

Overview

Description	#	Comment
Cameras	1	
Lighting	2	
Video signal	3	LAN, LWL, RG59U
Cooling air and/or Water	4	
Fiber optic converter	5	
Live screen	6	
Power Supply 24 V AC	7	
Machine speed	8	max. 100 kHz
System Cabinet	9	Rittal
Operator Screen	10	
Printer	11	
LAN	12	
Power Supply 230 VAC	13	
Web Break Signal	14	
PM-Speed switch over signal	15	
Instrument ground	16	
Printer cable	17	
Printer cable extender	18	
KVM switch	19	





Digital Web Break Monitoring „Web-Eye“

Project Management

Walter Software

- ✓ Engineering
- ✓ Software
- ✓ Installation Supervision
- ✓ Startup testing

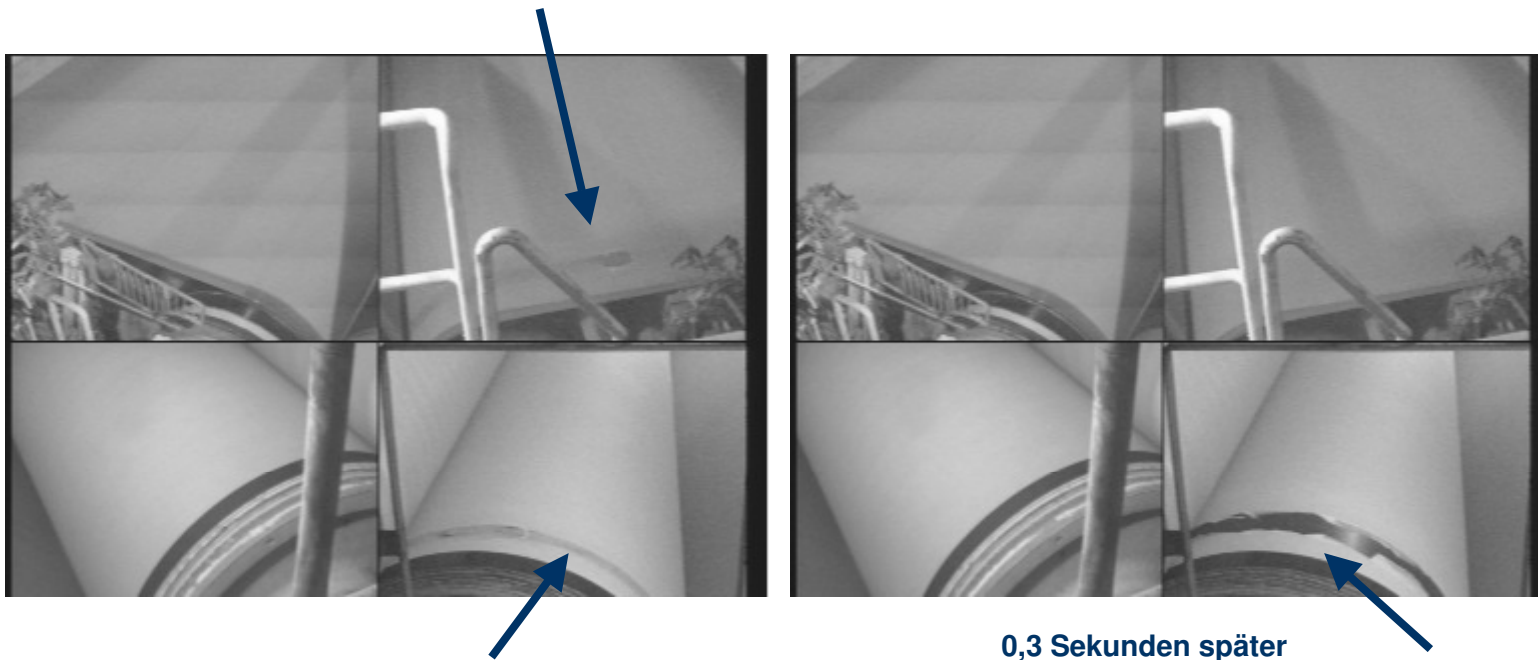
Customer

- ✓ Hardware procurement (maximized benefit at minimized cost)
- ✓ Installation



Digital Web Break Monitoring „Web-Eye“

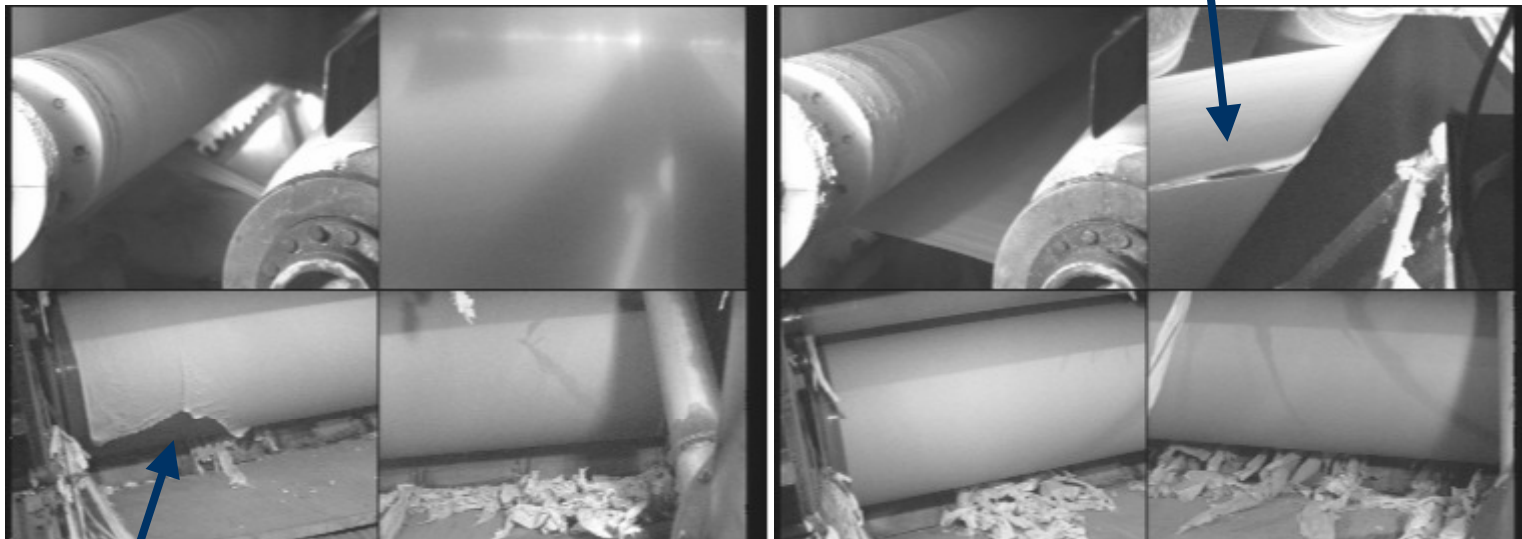
Fehlerbilder: Sieb am Rand gerissen





Digital Web Break Monitoring „Web-Eye“

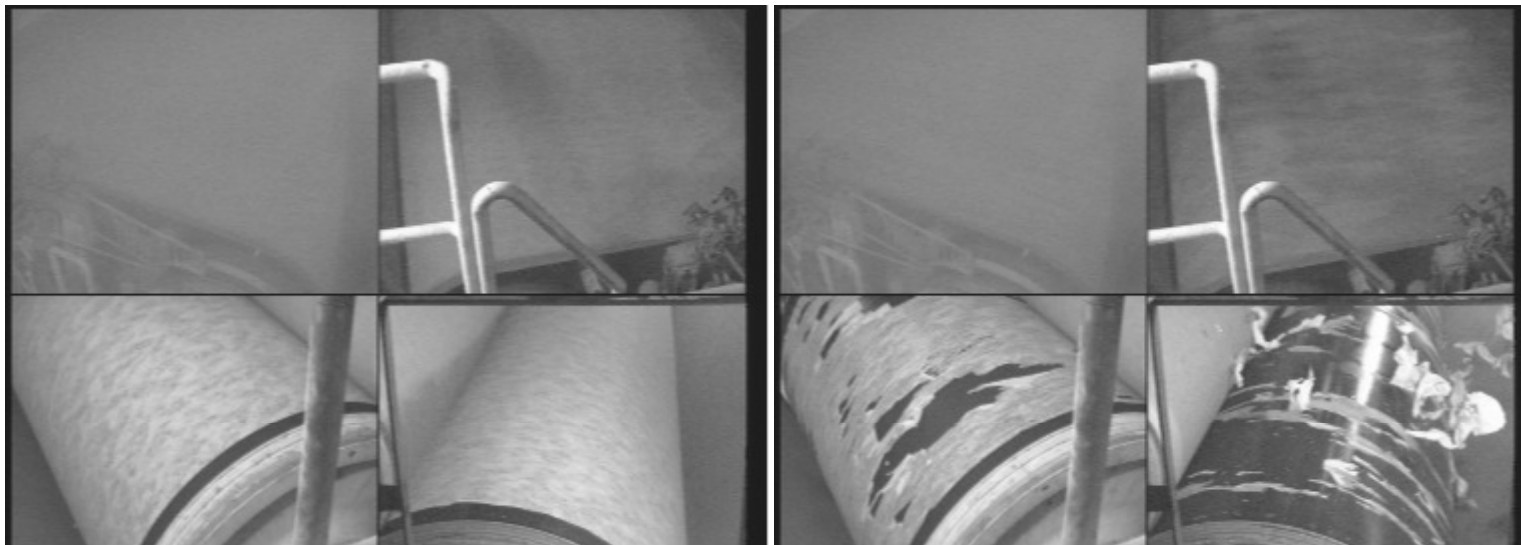
Dirt and Stickies





Digital Web Break Monitoring „Web-Eye“

Screen fails

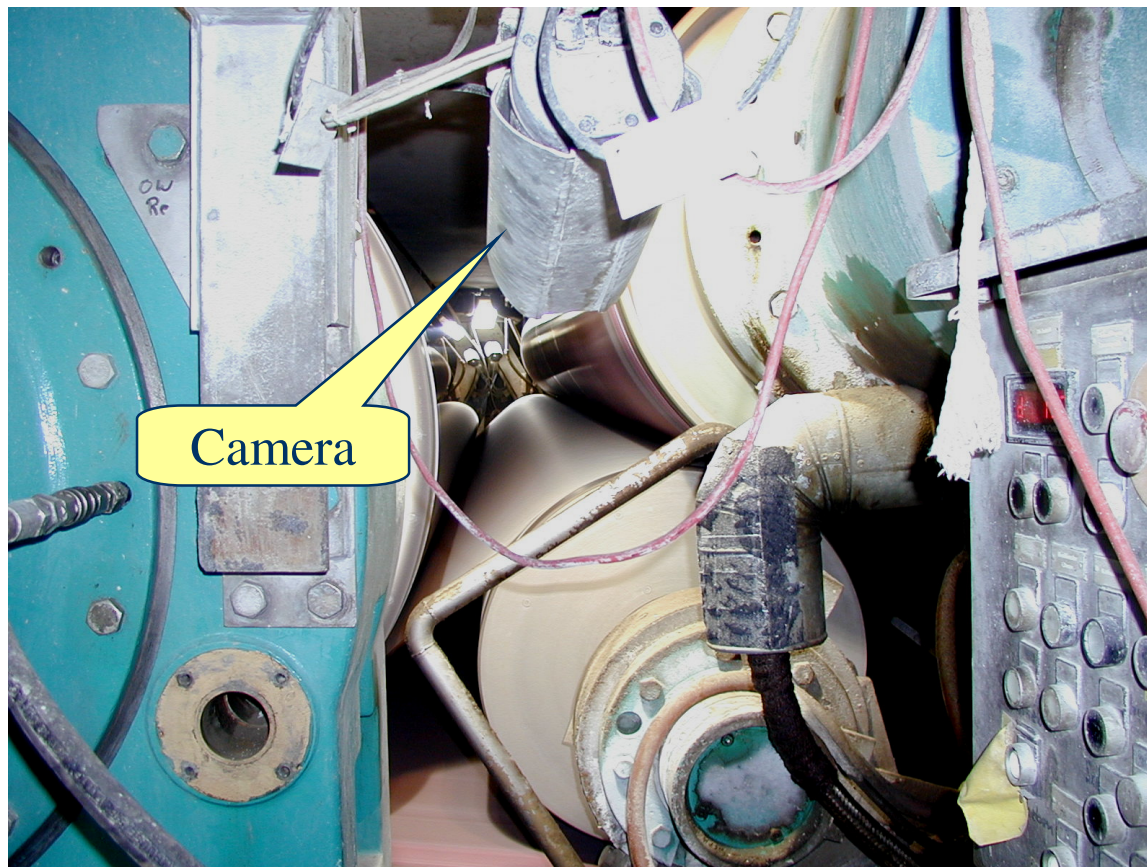


1 Second later



Digital Web Break Monitoring „Web-Eye“

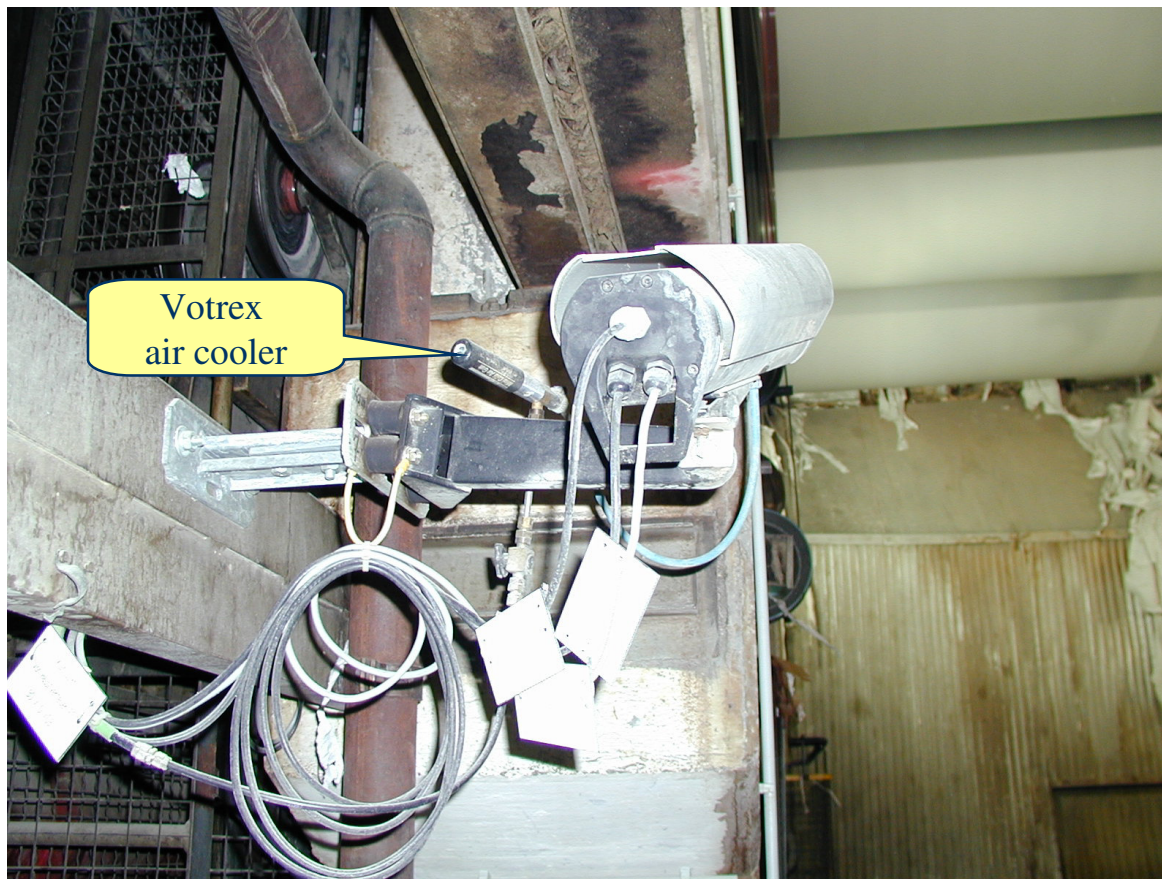
Camera installation





Digital Web Break Monitoring „Web-Eye“

Kameraeinbau





Vielen Dank für Ihr Interesse

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