Optical process- and device-observation

Interface between human and technology
Recognize event before it becomes dangerous.

Workplace reliability, stress minimization, loading station, safety, security, special resolution, particularly.
We are providing the interface between human and technics for sophisticated operation and observation of industrial process and facilities - a new generation of interactive process-visualisation.

Our Expert Team (feat. by TecTradeSolution GmbH) is putting you in the position to recognize events before they endanger and to control industrial facilities safely and efficiently.

In particular we are specialized in:

- the optical monitoring of processes and facilities within explosion-prone areas in the industry,
- industrial safety technology by video surveillance via IP,
- personal security, monitoring of hazardous areas,
- cognition, evaluation and notification of events which are not visible or just are happen to notice by humans,
- development and programming of the active components,
- planning and execution of the complete surveillance system and fault
- monitoring the automation of technical process in the control room,
- ergonomic arranged, interactive videowalls and displays for the operation and visualization of central process management systems,
- development, planning and execution of the complete establishment
- solutions for fuel level and flow rate

Special solutions of the human-maschine-interfaces for a secure future.
MORPHEUS optical process- and device observation
made for rough industrial application
heavy-duty / Ex-zone 1
MORPHEUS is an optimal solution for demanding process- and device-observation tasks at site in Ex-zone 1/2. As an intelligent, decentralized, high resolution IP-video-camera system this process- and device-observation can offer an optimal overview in rough industrial applications and thus increase safety significantly.

MORPHEUS is an explosion-proof, high resolution optical process- and device-observation system with a HiRES IP video camera powered by Mobotix. With a 3 megapixel resolution and up to 30 pictures per second.

MORPHEUS can be configured and programmed according to the conditions of the device. Due to numerous possibilities of freely programmable event- and alert-sensor windows, events can be recognized. This triggering event can be analyzed subsequently by means of integrated pre-/postalarm records. Error analysis. A link to PMSX (central process management system) by binary output card or via BUS is also possible.

Nothing will escape MORPHEUS! You decide what it should report!

With MORPHEUS you can pan, tilt and zoom virtually.

Your advantage: The camera still supervises the entire area and all event- and alert-sensor windows stay active. Therefore, the camera is not blind at the side facing away during the panning and zooming. In case of an event or alert the view changes to the alert mode. And: there are no movable parts which have to be maintained or can wear.

MORPHEUS processes and evaluates events independently, decentralized with its own processor and data storage and sends the found picture to the network. All messages and alerts are produced by the camera. Therefore, there is no danger that events or alerts are generated too late due to a too high data throughput in an evaluation apparatus with many cameras.

By example:
During an observation the transmitted picture quality is reduced. Only changed pixels are sent via net. In case of an event or alert the event will be recorded with the highest quality and the picture will be displayed in the foreground of the monitor. A nearly unlimited amount of cameras can be connected to an observation system and configured according to the conditions of the observation station. A connection to PMSX (central process management system) is possible.

MORPHEUS is equipped with an EEx de plug, which allows the assembly respectively disassembly during maintenance works in Ex-protection atmospheres without any „glow of fire“. All cameras are brought together by an IT network with CAT 6 cable and the data of the pictures are transmitted.

MORPHEUS can be initialized with each browser by release via network.
The views of all cameras are administered in the network and monitored centrally in the control room by means of the supplied software "MX ControlCenter".

Special alert scenes and layouts can be set. Alert output to PMSX (central process management system).

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MORPHEUS Exd OPT S HiRes IP video camera

Day-sensor, HiRes, resolution max. 2048 x 1536 (3Mega)
Picture processing: picture processing in the camera, backlight compensation, autom. white fader, image restitution, video sensor (motion detection)
Low-maintenance and without movable or wear parts.
Virtual PTZ: digital pan/tilt/zoom, stepless up to 8x
Alert/events: triggering of events by integrated multi-window motion detection, ext. signals, temperature sensor, information via e-mail, FTP, telephony (VoIP, SIP), visual/acoustics alerts, pte-/post-alert picture
Even in case of a system breakdown of the PC-network or the PC the events are recorded by the camera.

Interface: Ex de coupling (accessory) Ethernet 10/100
Connection via CAT6 network cable, up to 100m.
Voltage supply by PoE switch (accessory) Power over Ethernet (IEEE 802.3af): PoE class variable, depending on operating mode
Power consumption: type 3 Watt; by PoE switch
Operating temperature: -30 to +60 °C
Camera disc: mineral crystal

Approvals:
Endclosure: Ex II 2G Ex d IIC T6 / II 2D Ex tD A21 IP66 T85°C made of die-cast aluminium
Connecting plug: II2G EEx de IIC T6 IP66
Camera electronics: BGV C9 ("UVV Kassen"); EMV: DIN 61000 (living area, industry), EN 50155 (shock, vibration, temperature.), FCC part 15B; CE

Picture sensor: 1/2" CMOS, Progressive Scan
Max. picture resolution:
Color: 2048 x 1536 (3Mega), black-and-white: 1280 x 960 (Mega)
Lens options:
22 to 135 mm small-picture, horizontal perspective 90° bis 15°
Picture formats:
2048 x 1536, 1280 x 960, 1024 x 768, 800 x 600, 768 x 576 (D1), 704 x 576 (TV-PAL), 640 x 480, 384 x 288, 352 x 288, 320 x 240, 160 x 120;
Free picture format selection (for example 1000 x 200 for skyline)
Max. picture rate (M-JPEG):
(live/record) VGA: 25 fps, TV-PAL: 18 fps, Mega: 8 fps, 3Mega: 4 fps
Max. video rate (MxPEG) (live/record)
VGA: 30 fps, TV-PAL: 30 fps, Mega: 30 fps, 3Mega: 30 fps
Min. light intensity:
Full color: 1 Lux by 1/60 s, 0,05 Lux by 1/1 s
Image compression: MxPEG, M-JPEG, JPG, H.263 (Video-VoIP-Telephone)
Internal DVR MicroSD-Slot (camera internal recording up to 32 GB) external video ring buffer directly to NAS and PC/server without additional recording software.

Safety:
User-/group management, HTTPS/SSL, IP-adress filter, IEEE 802.1x, Intrusion Detection, digital picture signature

Measures:
Ø 130 x T 102 mm, W along cable gland 190 mm;
H over plugr 190mm, coupling additionally 80mm, weight: about 1000 g (preliminary)

Scope of delivery:
free choice of the lense, manual, software, video-management software MxEasy, control room software MxControlCenter, 4 GB MicroSD.

Info:
Camera electronics: powered by Mobotix, current world market leader of high-resolution video.

Additionally:
Components for network technology, wall/ground/ceiling brackets, canopy, object depth.
Adjustment and configuration of the camera according to customer demand and specifications.

Subject to technical changes/no liability for typing or printing errors and misstatements.
State 01.12.2011
MORPHEUS can not replace a safety device for a plant, but give an overview and support the security decisively by means of event- and alert sensor windows.
Examples of use

• Optical process- and device observation

• Reactor monitoring

• The safe loading station

• Torch monitoring at exhaust combustion

• Sight glass monitoring
The camera MORPHEUS EX supervises the trouble-free function of the reactor-system.

Action frameworks define which areas of the reactor-system have to be supervised.

In case of an incident, e.g. by steam outflow at a flange, the action framework will flash red and an error message will be forwarded to the responsible monitoring personnel.
Camera MORPHEUS EX is observing the flow of material. This is in normal state, event sensor are not supplying an alarm.

Camera MORPHEUS EX is observing the flow of material. The camera is detecting the flow rate is too small and is supplying an alarm (drawn red).
Camera MORPHEUS 1 is observing the state of flame in the flame bed. Action frameworks are not supplying an alarm. State of flame is normal.

Camera MORPHEUS 2 is observing the volume of the flame from underneath, it’s seen the fire ring.
Camera MORPHEUS 1 is observing the state of the flame. The flame is leaving the flame bed and is above the prescribed level. The combustion turns bad, event sensor are supplying an alarm (drawn red).

Camera MORPHEUS 2 is observing the volume of the flame from underneath. It’s seen the fire ring and a slight nebulization. As camera MORPHEUS 1 is supplying an alarm, live pictures of both cameras will show up in the control room, both camera are recording for documentation.

Examples of use

Torch monitoring at exhaust combustion

Camera MORPHEUS 2 is observing the volume of the flame from underneath.
The safe loading station

Patent pending
Monitoring the turnover of gas

The safe loading station

switch room

control room

- PoE switch
- WEB IO
- WL-converter

loading 1
loading 2
V1
V2
V3

zone 1

zone 2

no EX

control room videowall
- alarm
- hazardous area monitoring

camera MORPHEUS EX

camera MORPHEUS EX

camera MORPHEUS EX

camera MORPHEUS EX

camera MORPHEUS EX

camera MORPHEUS EX

Monitor 4
Morpheus OPT Ex Kam

Step 1:
- Monitoring of the loading station
- No picture is shown in the control room
- Tank trains incoming at the loading station will be reported in the control room with image

Step 2:
- Access control
- Entering the tank train without applied fall protection will be alarmed

Step 3:
- Personal security while coupling after applying the fall protection
- The camera captures the staff on top of the tank train. Whenever the staff is falling down or is getting powerless it will be alarmed to the control room (with image) and on-site.
Step 4:
- Monitoring of the loading
- The connection fittings are focused
- In case of product-spillage there will be a image-alarm in the control room and acoustic on-site.

Step 5:
- Personal Security while decoupling
- Alerting as in Step 3

Nothing escapes Morpheus