HERNIS Detection System

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Video Motion Detection VMD

HERNIS and their technology partner Detec AS have together with SINTEF (the largest independent research organisation in Scandinavia) made large investments into the development of robust algorithms for advanced video motion detection. By using adaptive statistical colour-based image analysis that ignores reflections from water, changing light conditions, vibrations from wind and vessels etc., the system only reacts to real events and alarm criteria such as persons boarding a ship.

Video Motion Detection VMD

VMD or Video Motion Detection technology allows for early detection of movement and can be used for detection of oil spill, leakage or intruders in the target area. The same technology may also be used reverted to detect flameouts, in which case the ceasing of movement triggers predefined actions in the CCTV system.

In the event of an incident the system can be programmed to instantly relay live video images from that specific area to one or more specific monitors alarming the control station operator. Time critical decisions can thus be based on facts, rather than presumptions thereby increasing the safety of people and equipment.

Perimeter Protection

Perimeter Protection is designed to protect the immediate perimeter and critical access points of the vessel when the vessel is anchored up or at dock. The perimeter detection system is modularly designed to meet the vessels specific needs. It can be used to activate lights, the ships CCTV system, and audible alarms to detect intruders and minimise damage to property and risk to personnel.

HERNIS' perimeter security systems can be used with PTZ cameras by loading different sets of advanced video motion detection criteria, whether the vessel is anchored up, at dock or sailing. The different sets of criteria can be assigned to schedules, saying e.g. that when a vessel is at dock, it should only notify alarms on persons boarding between 11:00PM and 06:00AM.

HERNIS can deliver CCTV systems that detect intrusion at port facilities and docked ships, and even small vessels approaching ships within the cameras fields of view. Our systems are therefore ideal components in the security system.

ISPS Requirements

In order to meet the safety measurements required for ships and port facilities in the International Ship and Port Facilities Security Code (ISPS) HERNIS can offer advanced video motion detection systems which help operators identify security threats.

HERNIS perimeter protection systems are also used for more typical security purposes like notifying alarms when people, vehicles or small vessels enter into critical areas near seashore or cross fences on onshore installations and port facilities.

Floating Object Detection

In arctic regions floating ice can represent a danger to marine going vessels. HERNIS thermal camera stations are able to detect the floating ice at a longer range than the human eye is capable of, reducing the risk of close encounters. Our advanced CCTV detection system offers range estimation and integration to existing alarm systems contributing to the safety of the crew and vessel.

HERNIS Leakage Detection

HERNIS Leakage Detection combines remote surveillance, image analysis and digital storage in one system. Typical applications are smoke detection and oil leakage detection, essential to fire outbreak prevention.

The leakage detection system is offered as an optional feature to the HERNIS CCTV systems. By pointing a CCTV camera to a critical area such as the fuel oil pump on the main or auxiliary engine, the video motion detection system will detect any possible leakages.

The HERNIS Leakage Detection system revolutionizes fire safety on board, since the fire itself does not trigger the alarm, but instead a sophisticated mathematical analysis of images interprets potentially hazardous events, for instance oil spill on a hot surface or smoke or gas leakages barely visible to the human eye. (See video from engine room, where mist is detected and highlighted in the video as well as on the event list)

To avoid false alarms the system has a detailed masking feature defining areas that are not to be analysed for movements or change in colour. The system also offers selection of max/min object size, definition of direction of movement as well as the option of setting horizontal and vertical planes in the image.

The HERNIS Leakage Detection systems are delivered in cooperation with Detec. Shortly after the introduction of the new feature to the HERNIS CCTV systems, HERNIS received orders for 4 LNG-carriers, one super-yacht and one offshore installation, showing that this automatic alarm system is warmly welcomed by the market.

An oil leakage has been detected in the engine room onboard a ship.

If the situation is recognised as a real alarm in that specific area, the system can be programmed to instantly relay live video images to one or more spesific monitors to alarm the control station operator(s)

HERNIS Intelligent Flare Monitoring

HERNIS offers Intelligent Flare Detection optionally as an important feature for their flare surveillance systems. A flare serves as a safety device as it burns off gases vented from drilling or refinery process units. Excess gases are especially produced during start-up and shut-down procedures. Flares range in size, but most are normally about 6m high with a 1m diameter.

Video images of the burning flare will be fed to and analyzed by a PC with special software application suitable for this purpose. In event of the flare stops burning operators will be notified by an alarm and the incident may also be recorded. The system can be programmed to instantly relay live video images and alarms to a designated operator. Time critical decisions can thus be based on facts, rather than presumptions, thereby increasing the safety of people and equipment.

Flare Monitoring will facilitate a fixed camera station connected to a monitor located in the control room. All camera stations are made in stainless steel and are available in both explosion proof and weatherproof versions. Normally the camera sensor will be of CCD type, and a suitable lens is selected based on the height of the flare itself and the distance between the camera and flare. Remote controlled camera stations with pan, zoom and tilt could be utilized to overview several flares.

Another choice of camera would be to use an IR (thermal?) sensitive camera. This alternative will reproduce only rays emitted from the heat of the flare. In such way we can avoid the unwanted effects created by visible light. These effects are normally caused by reflections, changes made by clouds or general difference between day and night time conditions.

Signal Transmission

The type of transmission for video, power and eventual control signals are normally selected based on distance between location of camera and control room. HERNIS can offer their Multicables or alternatives based on fibre optical or twisted pair cable for this purpose. In some cases equipment using wireless transmission could provide a cost effective choice.

Features and Benefits

- Full visual overview of remote flares
- Reduced danger for personnel
- Integrated alarm if flare is not burning
- Simple and reliable concept
- Reduced downtime and operational costs
- Interface to remote ignition system
- Application available on all HERNIS control systems

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