

TRACK-PATROLLING SURVEILLANCE SYSTEM

 Robo M



ISON

ISON CO.,LTD.

AWARDED AS 2014 NO. 1 SME IN DIVISION OF
QUALITY EXCELLENCE INDEK AND TECHNOLOGY POWER BY
THE SPORTS DONGNA NEWSPAPER

Autodata

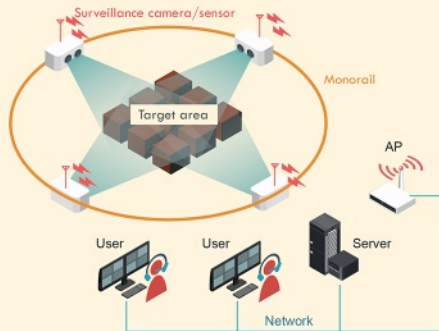
AUTODATA INTERNATIONAL CO.,LTD.

DESIGNATED AS 2016 SMALL GRANT BY POHANG CITY

About Technology!!



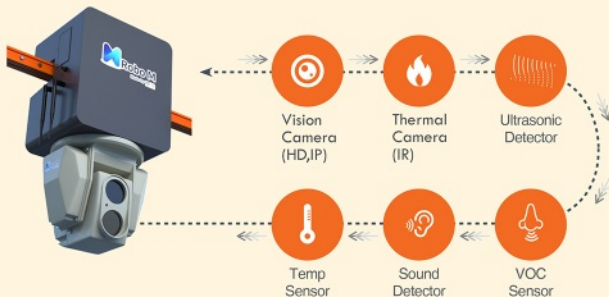
TERRAIN-FOLLOWING AUTO SURVEILLANCE SYSTEM
OFFERS REAL-TIME MONITORING FROM REMOTE LOCATION



About Application!!



INCORPORATES MULTIPLE FEATURES, EACH DEDICATED TO IMAGE,
TEMPERATURE, FOUL SMELL & AUDIO EVENTS AND GAS UNDER SURVEILLANCE

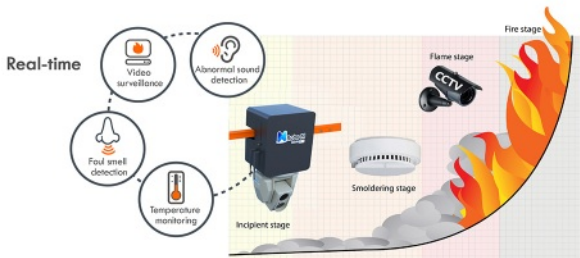


TRACK-PATROLLING SURVEILLANCE SYSTEM

All-in-one surveillance features with thermal imaging camera, vision camera and sensors detecting gas, smell and abnormal sound

It's too late to ring after the hail!!!

In-advance facilitation prevents costly incidents, some leading to disasters.



The current system is a true all-in-one solution for the prevention of incidents & fires by incorporating infrared camera, vision camera, gas & smell detector, abnormal sound detector and fire detecting/alarming mechanism. The system capable of automatically moving itself back and forth continuously along the monorail track enables a facility perimeter to be remotely monitored in real time.

The monorail track can flexibly, whether linear or curved, be suited to specific circumstances of the site. A housing of the system completely encloses the power cables and driving chain, such a structurally compact design of which occupies smaller space and affords big cost savings.

The system uses wireless signals to transmit data in no need of cabling and has a built-in self-diagnosis function for

Electrical	Fire surveillance for main facilities in power plant, manned or unmanned substation or underground utility-pipe conduit
Roadway	Tunnel traffic/facility monitoring, bridge condition monitoring
Logistics	Fire surveillance in distribution center
Public	Facility surveillance in underground utility-pipe conduit
Military	Roving surveillance against critical watch-out points
Civil	Roving camera in concert hall, automatic cargo transportation using monorail, etc.



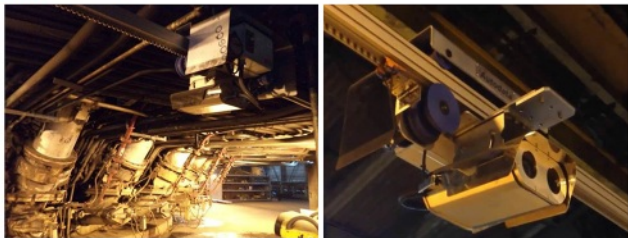
Product Specifications



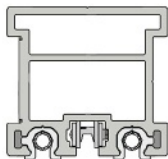
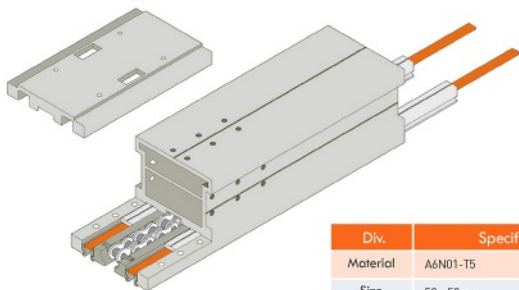
Div.	Specifications	Option
Thermal imaging camera	0-350°C, 320 x240 pixel	640x480 [option]
Thermal imaging camera	1080p HDTV , H.264	
Pan Tilt Driver	Pan : 0-355°, Tilt : -80--+60°	
Driving Unit	BLDC 90Watt, Encoder, Sensor etc.	
Communication device	Device Server, HUB	
Wireless AP	802.11a/b/g	
Controller	8 bit AVR Microprocessor	
Power Unit	DC24V or AC220V, 1ph	

** All products can be custom-made to suit your own requirements.

Application example



Application example



Div.	Specifications
Material	A6N01-T5
Size	50 x 50mm
Finish	Anodizing
Weight	Abt 2.5 [kg/m]
Bus Bar	CU Ø6x0,7t [11,6mm ²] - 2 Line
Driving Type	Chain - RS35
Power	DC24V or AC220V, 1ph
Acc.	Connector etc

** Adding heat line is optional

Comparison of monorail types

Conventional type

Monorail track and bus bar separated

Improvement type

Integration of monorail, power supply unit and chain

Application example



Day & Night Camera

D&N View

Laser beam illuminates human intruder at 1.2km in total darkness at a fraction of ICCD or Thermal camera costs

Single Laser Illuminator Dnview-205



Double Laser Illuminator Dnview-305



Remote Control Features

- Camera controls
- Camera and laser beam pan/tilt control
- Laser power level and beam collimation
- Time of the day setting
- Remote maintenance

Built-in Features

- TEC maintains laser diodes at 27°C
- Internal micro pan/tilt mechanisms
- RTC with battery for periodical maintenance
- Automatic feed-back-control of laser beam size/direction during camera zoom in/out

Dnview-205

Sun Shield

Laser illuminator with collimation lens for extreme range



Internal micro pan/tilt mechanisms for camera and laser illuminator

Corrugated/extruded aluminum housing for natural convection

High IR sensitivity zoom camera



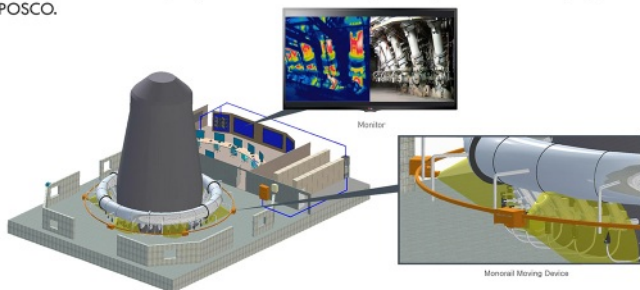
Man at 500m in wide FOV camera in total darkness

Specifications

Div.	Descriptions
Camera	30x optical zoom, WDR 52db, D/N-570/520 TV lines
Laser Diode	Day 0.4 Lux/Night 0.08 Lux
Video output	5W CW type, class 3b eye safety, $\lambda = 808\text{nm}$, 10,000 MTBF hours, laser beam collimation; 1°-60°
Remote control	TCP/IP, RS232/485(optional, Pelco protocol), Micro pan/tilt control software
Dimension	236(w) x 147(h) x 280(d) mm for Dnview 205, 330(w) x 147(h) x 280(d)mm for Dnview 305
Weight	5.0 / 6.0 kg for Dnview 205/305
Power input	-40°C to +50°C operating, 90% RH
Environments	Design IAW Mil-Std-810F, CE, IP65
Cooling	Natural Convection

Monitoring the amount of heat generated in overheated furnace incidents

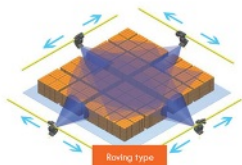
Thermal fatigue due to overheat in a blast furnace, a core facility in the steelmaking industry, may cause fire hazard thereby resulting in crack on its outer surface. Even a fine crack may, with greater possibility, lead to a catastrophic accident accompanying with fatal injuries. To prevent such likeliness by way of in-advance detection, ISON systems are currently applied to POSCO.



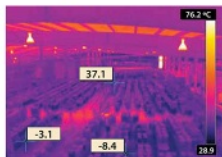
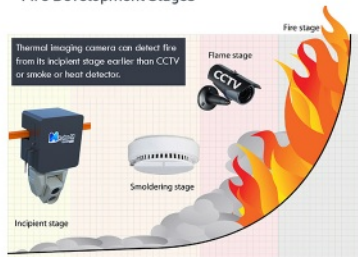
Monitoring fires in restricted areas

A warehouse, no matter where it is located, is usually filled with expensive commodities. Most of warehouse operators actively participate in anti-theft efforts, but more general risks all businesses should be aware of is fire because fire can destroy all in a very short period of time. Traditional fire detection methods, which require the fire signatures such as smoke or fire to travel to the device, may not be able to provide adequate protection in restricted but vast-open areas (such as warehouses). Actually, such spot-type smoke and heat detectors severely diminish the effectiveness of their applications as proven by incessant fire accidents entailing great losses in properties. Video smoke detection such as thermographic (infrared imaging) camera excels in such environments without any compromise, accordingly attracting more users.

Real-time



Fire Development Stages



Frequency of warehouse fires occurred during the latest 6 years



Source: NEMA

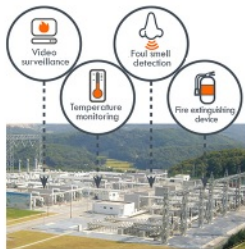
Fire occurrence	Casualty & loss	Name of accident	Cause of fire	Warehoused goods
2008.01.07. 10:38	40 died, 10 injured, ₩ 7.9 bil	Icheon Gold Storage, Gyeonggi	Not known	
2008.12.05. 12:09	7 died, 6 injured, ₩ 2.1 bil	Icheon Distribution Center, Gyeonggi	Welding	
2012.08.05. 07:58	2 died, 1 injured, ₩ 3.85 ~17.7 bil	"S" Distribution Center, Gyeongseo-dong, Incheon	Chemical cause (self-ignition)	6-ton sodium persulfate, etc.
2012.09.27. 23:34	1 died (firefighter), ₩ 3.33 bil	"H" Distribution Center, Nanyangju city, Gyeonggi	Electrical short circuit (not verified)	Frozen/cold storage goods
2013.05.03. 01:10	₩138.1 bil	"K" Cold Storage, Anseong city, Gyeonggi	Not known	10,000-ton frozen pork, etc.
2013.07.03. 11:54	₩4.8 bil	"J" Distribution Center, Gyeonggi	Not known	Electric automobile parts
2013.11.27. 11:00	1 injured, ₩170 mil	"S" Cooperative Distribution Center, Jole city	Electrical cause (short circuit due to insulation aging)	Goods for supermarket

Application Example 3

Monitoring fires at unmanned substations

Not long ago there was a fire at a substation located in Seoul, which triggered a power outage affecting nearby customers.

Preventing fires in specialized facilities such as unmanned substations entails inconvenience of having to perform frequent human inspections though, the reliance on naked eyes makes it almost impossible to investigate a lot of cables and subsystems for signs of any faults, whereby facility operators generally employ fire alarming systems that use smoke or heat detection mechanism designed to quickly issue alarms in the event of fire. These systems usually adopt technology allowable for remotely monitored automatic safety inspection and fire prevention.



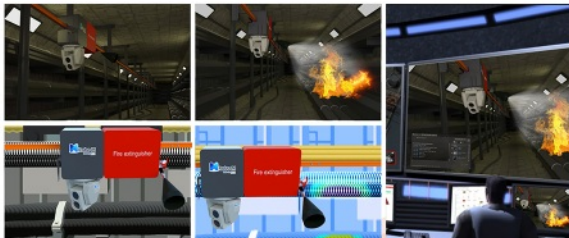
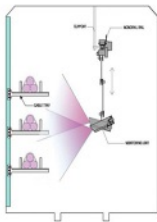
Application Example 4

Remotely monitoring underground utility-pipe conduits

Preventing fires in confined areas or specialized facilities such as underground utility & pipe conduits or unmanned substations entails inconvenience of having to perform frequent human inspections; though, the reliance on naked eyes makes it almost impossible to investigate a lot of cables and subsystems for signs of any faults, whereby facility operators generally employ fire alarming systems that use smoke or heat detection mechanism designed to quickly issue alarms in the event of fire.

However, ISON system outperforms conventional technology in a sense that the state-of-the-art system incorporates into its housing all such features as an infrared camera that measures temperatures of objects under surveillance [e.g. underground utility-pipe conduits, substations, etc.], a HD vision camera that captures high-definition video images and the sensor that detects foul smell (e.g. volatile organic compounds (VOCs)). Furthermore, the all-in-one system capable of patrolling a perimeter along the monorail track monitors temperatures, video images and foul smell under the coverage, and transmits data to the central control room server in real time whilst sending alerts if triggered to a manager or on-duty workers via smartphone.

Moreover, in case of fire the system can be manipulated to move around the fire zone enabling a control room to put out the fire from its onset by remotely activating fire extinguishing devices using e.g. solid aerosols.



Thermal imaging camera / HD vision camera / VOC sensor / position sensor / wireless data transmission device / fire extinguishing device...

Monitoring fires at industrial infrastructure

In-advance facilitation prevents costly incidents, some leading to disasters.

All-in-one surveillance features with thermal imaging camera, vision camera and sensors detecting gas, smell and abnormal sound



Fires involving industrial infrastructure such as substations and furnaces or underground culverts in which utility cables are embedded directly relate to the national economy and people lives.

Not long ago there occurred a fire at an underground culvert that destroyed communication cables therein causing loss of communications as well as shutdown of nearby factories. In addition, there was a fire at a substation located in Seoul, which triggered a power outage affecting nearby customers.

Preventing fires in specialized facilities such as underground utility facility and unmanned substation entails inconvenience of having to perform frequent human inspections; though, the reliance on naked eyes makes it almost impossible to investigate a lot of cables and subsystems for signs of any faults, whereby facility operators generally employ fire alarming systems that use smoke or heat detection mechanism designed to quickly issue alarms in the event of fire.

Amidst this trend, thermal imaging solutions ensuring monitoring over facilities under surveillance and prevention of fires are recently unveiled by a SME in Korea.

This state-of-the-art system incorporates into its housing all such features as an infrared camera that measures temperatures of objects under surveillance (e.g. underground utility-pipe conduits, substations, etc.), a HD vision camera that captures high-definition video images and the sensor that detects foul smell (e.g. volatile organic compounds (VOCs)). Furthermore, the all-in-one system capable of patrolling a perimeter along the monorail track monitors temperatures, video images and foul smell under the coverage, and transmits data to the central control room server in real time whilst sending alerts if triggered to a manager or on-duty workers via smartphone.

A fire extinguishing or suppressing device can adjunctively be attached to the system to quickly respond to a fire from its incipient stage.

The system surely serves to prevent a minor event such as failure or fire from cascading into a major one by allowing the user to proactively detect potential hazards and, if occurred, take immediate actions.

The developers of the system and unmanned fire detection solutions, ISON and AUTO DATA INTERNATIONAL, are endeavoring, based on their experiences that have successfully constructed the incident prevention system for furnaces of POSCO, to expand their applications to infrastructure facilities such as underground utility culverts, substations and road tunnels as well as private warehouse facilities.



1. Fire at a substation
2. Fire at an underground utility structure
3. Fire inside a tunnel
4. Fire at a warehouse

Monitoring fires at industrial infrastructure



Leading company in safety monitoring for coastal and border surveillance!

We provide our clients with safer and more convenient products developed based on creativity and innovative thinking. Our Company established in 2003 holding over ten years of experience working with major companies in the industry and producing a wide range of CCTV related products and supply suitable products for the public sector utilizing the rich experience. We have the world's first technical skills "Robo-M; All-in-One Roving Surveillance System" and "Artpole; lowering type pole system". Our goal is being a leading company in remote monitoring system which will come into unmanned guard post of R.O.K army in borderline.



ISO 9001:2008

Cert No: GK-0390-QC



1. Fire at Doejeon Distribution Center
2. Fire at Icheon Distribution Center
3. Fire at Gimpo Distribution Center
4. Fire at a fire factory



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