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Presentation on “AUTOWATCH” Video Monitoring Equipment.

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Purpose of System

- **Method to identify root cause of ongoing equipment, process or quality issues in a manufacturing environment. The system is particularly useful on intermittent issues.**

Key Benefits

- **Improve engineering/maintenance support on issues especially on evening or night shift.**
- **Better verified data on issues.**
- **Method to share information on equipment/process issues between facilities.**
- **Eliminate 'hear say' & opinion. Replace with factual record.**
- **Major tool in Root Cause Analysis of issues.**

Key Characteristics of System

- **Compact, Mobile & rugged.**
- **Self contained –when not in use all components locked away in cabinet**
- **16 mt power cord with built in spring retract reel.**
- **Quick and easy to set-up.**
- **50 and 100 frames per second options available.**
- **Standard Four cameras per system but up to Eight can be incorporated**
- **Cameras equipped with electronic zoom and auto-focus**
- **Miniscreen for Assistance with Camera setup**
- **Quick set-up and highly flexible camera mounting brackets.**
- **Wireless Camera Options**

Key Characteristics of System(continued)

- **16mt Camera cables.**
- **Manual and machine triggered alarms**
- **Simple but powerful search capabilities**
- **Variable playback speeds – can slow down a machine sequence of operation to better identify a problem's root cause.**
- **Zoom capability on playback – can zoom into area of interest for better detail**
- **Simultaneous playback of all four cameras in Quad mode**
- **Videos and still image be recorded in USB stick**
- **Still pictures can be recorded in JPG format.**
- **Capability to review video remotely on a Laptop or via Web conferencing.**

Typical Playback Screen Layout(4 Camera)



Cabinet Layout



Storage Drawer Layout



Cable Management



Trolley Layout



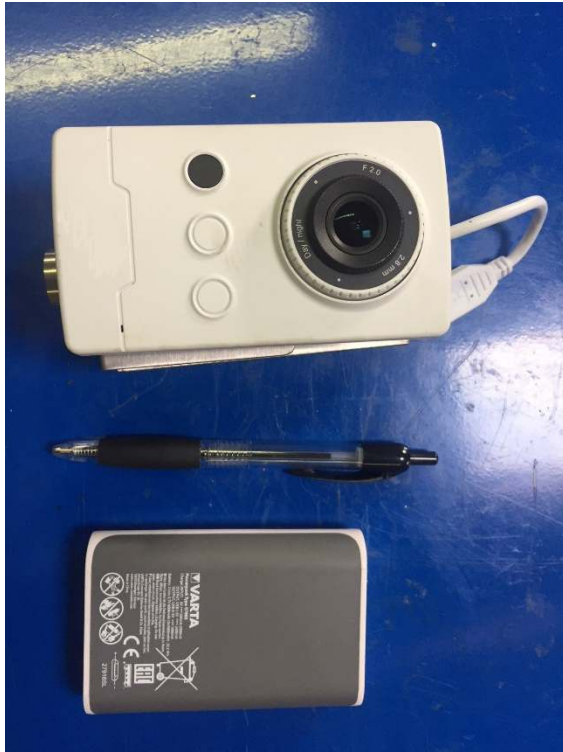
Box Zoom Camera 50fps and Mounting Clamp Assembly

Camera:

- Standard POE IP Camera with System,
- Point and press zoom in or out on camera, Camera then will Autofocus
- Option to Zoom and focus remotely from screen/mouse
- Robust & Compact
- 50fps Capability



Wireless Camera (option)



Wireless Camera:

- 6 hour Rechargeable Battery Life ,
- Quickly swappable additional Battery possible
- 25fps Capability
- Same mounting brackets/arms as wired cameras
- Range to main system 20 to 70meters



Remote Head Camera(option)



Remote Head Camera:

- Camera with separate control unit,
- Control unit plugs into Cat5 POE cables of Main System
- Camera has up to 12 Meter cable to connect back to control unit
- Compact Camera Head for space restricted applications
- Varifocal Lens



Higher Frame rate Camera (option)

Manual Lens IP Camera:

- Manual Zoom & Focus Lens
- Option of Macro lens for greater detail on smaller fields of view
- High Resolution Image
- POE – single cable for Power & Data
- 100Fps capability



Monitor Output Capture (option)

Video Encoder :

- The unit can be fitted onto any HDMI output device and encode the signal so that it can be recorded.
- Data Display Screens, Data entry systems, HMI screens, Machine vision screens, microscopes etc and record every second for days or weeks !
- The device reproduces input on a loop-through basis with no signal loss, this means the end user of the existing display monitor sees no difference when the device is in use !



Principal Potential uses of System

- Line Monitoring:** The system can be set up to monitor the operation of a production line. Whenever an intermittent problem occurs, the operator presses a labelled “pushbutton” on the side of the Monitoring System enclosure. Engineering/Maintenance can later review the recording of just before the pushbutton activation, and debug the cause/sequence of events resulting in the problem on the production line.
- Intermittent Machine issues:** The System has an alarm input for easy connection to the PLC of any production machine. The system will then flag the times of any machine faults. The video for the period just before the fault can easily be found and reviewed. To further assist debug of problems a camera can be focused on the panelview screen to review alarm messages.
- Equipment Commissioning/Validation:** New equipment can be monitored over an extended period of time to help identify bugs. The recordings of these bugs can then be reviewed with the supplier, providing very clear evidence of items that need to be rectified.
- Media Runs:** Provide a video archive of cleanrooms and equipment for Media Runs in the Pharmaceutical sector.
- Quality Issues:** In the Pharma & Medical device sectors, even extremely rare occurrences can be a critical Quality concerns. Having the capability to permanent recording timestamped video over days/weeks is a major tool in identify root causes.

Principal Advantages over Traditional High Speed Camera System

- **Simplicity of Use:** The system is simpler to use than many high speed systems and therefore will be utilised by a great number of Engineers/Technicians
- **Multiple Cameras:** Normally four but up to eight cameras can be incorporated into a system.
- **Display Screens:** Capture and record HDMI/VGA input screens directly to the system
- **Storage Times:** A traditional High Speed Camera normally stores a max of two minutes video. The Autowatch System typically stores up to two weeks or more on all Cameras.
- **Flagging Issues:** Manual flagging of critical occurrences by equipment operators or directly from the machine's .
- **Robustness:** System is robust and can be left unsupervised on the line for extended periods of time. Maintenance costs of system are very low.
- **Remote Viewing:** System can be remotely viewed and clips backed.

Clients utilising the Autowatch system include

- | | | |
|----------------------------|-----------------------------|--------------------------|
| - P&G x 6 | - Baxter Healthcare x 3 | - Integer |
| - Teva Pharmaceuticals x 2 | - Medtronic x 2 | - Kerry Foods |
| - Abbott x 8 | - Honeywell | - Flextronics(USA) |
| - GSK x 3 | - KCI/Acelity | - Takeda Pharma |
| - Transitions Optical x3 | - Merck(MSD) | - Birdseye |
| - OLM/Essilor | - Gilead Pharma x 3 | - GE Healthcare x 2 |
| - Organon | - Genzyme/Sanofi x 2 | - Irish Distillers |
| - BD Healthcare x 3 | - Boston Scientific | - Lakeland Dairies |
| - Yves Rocher | - C&D Foods | - Merit Medical |
| - Biomarin | - GreenIsle | - Alexion x 2 |
| - Henkel Loctite | - Bausch & Lomb | - Helsinn Birex |
| - Hollister | - Mylan | - Stryker Healthcare x 4 |
| - Rottapharm | - Cuisine De France(Aryzta) | - Abbvie |
| - Stiefel Laboratories | - Chanelle Pharma | - Aerogen |
| - Servier Pharma x 2 | - Molex | - Jabil |
| - Diageo(Baileys) | - Mergon | - Danone |
| - Cadburys | - Alcon | - Harmac |
| - Sanmina x2 | - Abbvie/Allergan x 4 | - Intel |
| - West Pharmax3 | - Nestle | - Horizon Pharma |
| - Leo Pharma | - Jazz Pharma | - Jazz Pharma |

Procurement of System

- **Documentation and Training on system will be provided.**
- **Additional on-site training can be provided.**
- **System typically ready to ship in four weeks from PO.**
- **Additional information and/or quotation available from Mike Slattery
+353(0)872384200 or MikeSlattery@Envisage.ie.**
- **Onsite demo of system can be provided.**
- **Rental Options available.**
- **Engineering service available utilising Autowatch to generate reports with recommendations**