



Substation being a part of an electrical generation, distribution and transmission requires continuous thermal monitoring which improves reliability, efficiency, reduce downtime and provide safety to power delivery systems. Thermal

imaging technology helps to assess the health of substation equipments by revealing the prolonged hot spots at joints ,which eventually leads to breakage of connections.

Electric power companies should have

a system which lowers the risk of breakdown in power and damages during power transmission ,so that the cost of unplanned maintenance and restoring of system operations will be deduced resulting in less service expenditure.

Solution

Unlike the traditional methods to monitor the substation equipments which requires handheld thermal imaging cameras, the portable systems are exemplary solution

reducing the cause of failure occurrence.

Hence AccuOpt DCTMS-640 is used for the purpose , which is a thermal + visual camera based thermal hot-spot

detection and monitoring system. It is a 24/7 surveillance capable system which can be installed in critical zones like substations, coal yards, large server facilities, militarized zones etc.

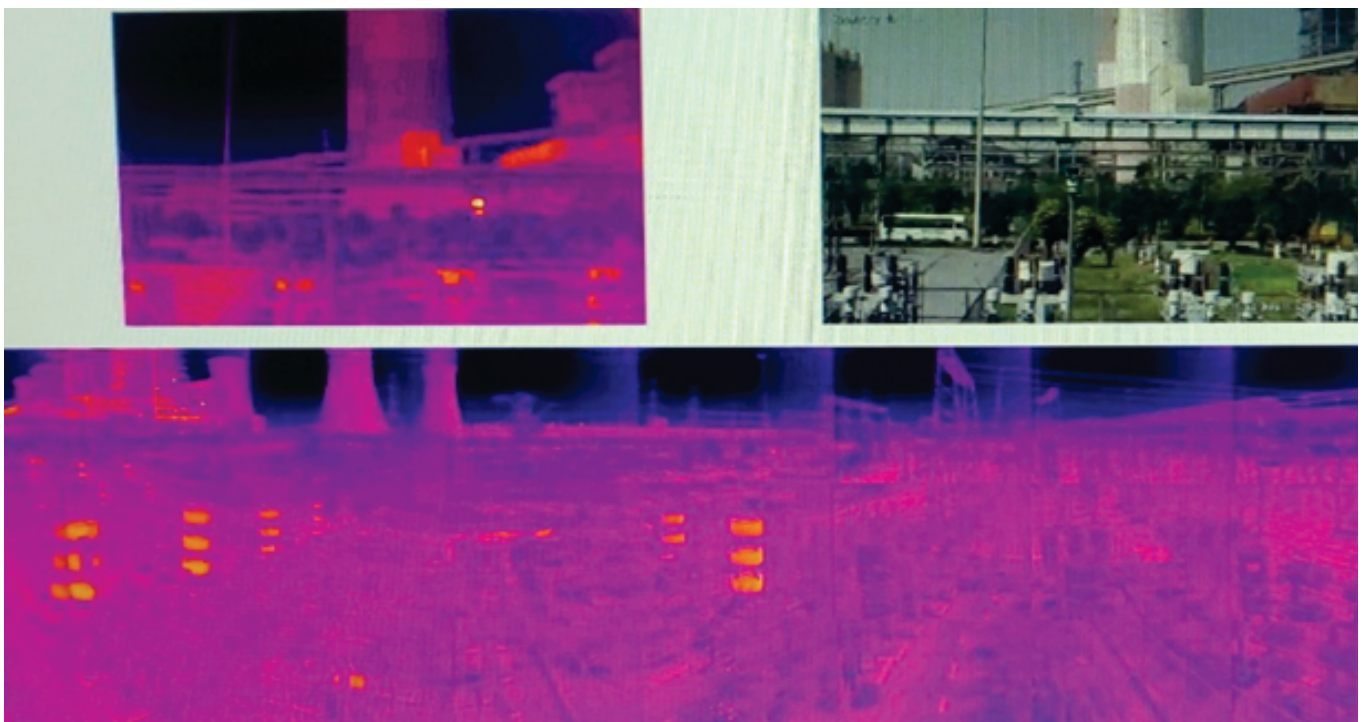
DCTMS640 –Online Thermal Monitoring System

Early fault detection in substations and industrial sites:

It is automated and remote which results in continuous thermal and visual scanning of hotspots in a substation. With an alert of mishap, the concerned official gets the image of temperature affecting the joints of equipments over SMS or E-mail. The

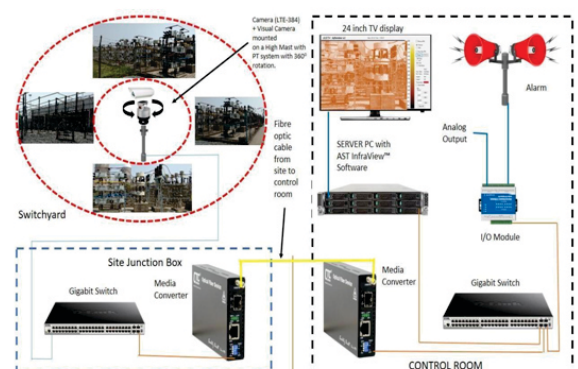
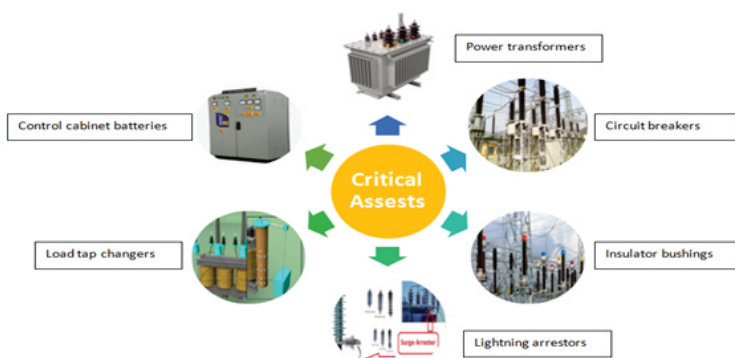
auto tracking of hot spots and displaying temperature values results in remote fault detection, alarm generation, automatic regular report generation and further the data can be stored for analysis and quality control. It also helps you detect temperature deviations from normal operation conditions to ensure safe and reliable operations. The system

consists of thermal and visible cameras mounted on a positioner with continuous 360° pan range and tilt range of $\pm 45^\circ$ - 80° . It also consists of a junction box which contains necessary hardware for power and data transfer. Fixed image cameras can also be added to the system. One unit can cover circular area up to radius of 15 meters.



Quick Deploy and Monitoring Kit:

One camera can monitor several critical assets/component in Substation



System Solution Components

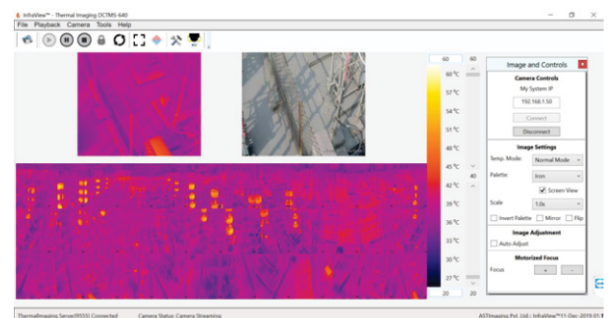
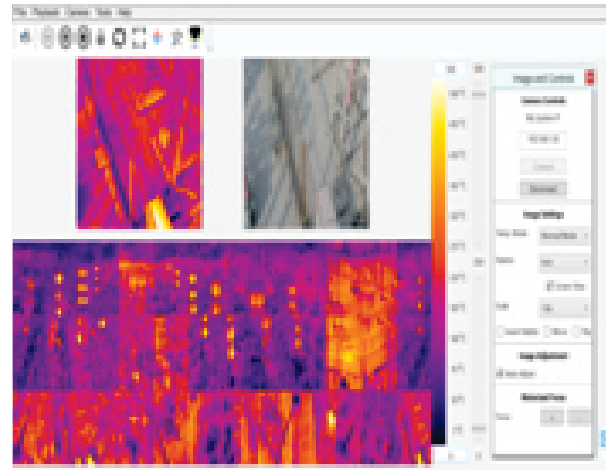
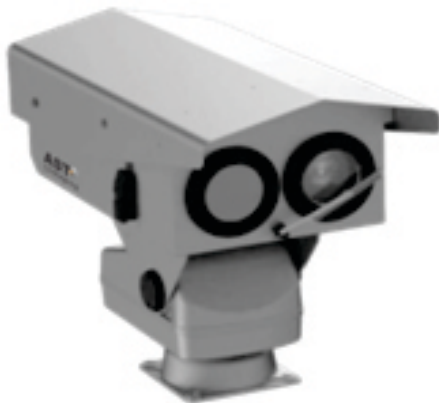
DCTMS-640 consists of PT Drive, Dual Camera (One Thermal and One Visual Camera) installed at the site:

Windows Based InfraView™ Software (Requires high end PC or server) is used at the control room to stream

thermal and visual videos live, detect hot spot, record and generate reports.

The DCTMS 640 works on a Gigabit Ethernet network, the video signal from both cameras and PTZ controls are accessed via this network. For

distances greater than 100 meters. Between camera system and Server PC, the Ethernet network is not suitable. For that purpose suitable OFC conversion is required for proper signal transmission.



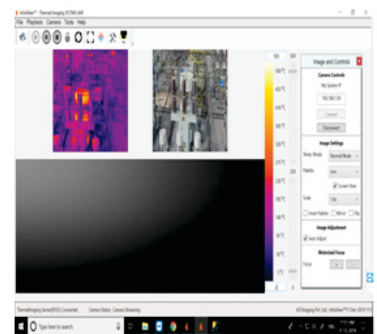
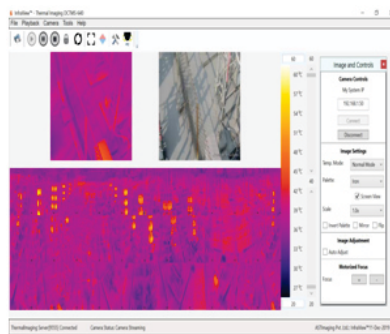
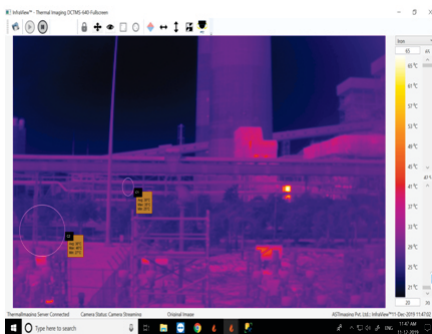
Feature of DCTMS Software :

- Displays Real-time Video (Visual + Thermal).
- Auto scanning in every 1 hour.
- Real Time hot spot detection.
- Email and Audio Alert when hot spot detected.
- Region of Interest in Full Screen Window.
- Hot Spot Trending Analysis & report generation.
- Manual Controlling of PT System in Full Screen Window



KEY BENEFITS:

- Instant notification alarm for temperature beyond preset parameters.
- Automated, continuous thermal and visual imaging of substation for better performance and safety.
- Early and remote fault detection.
- Improved reliability of electric power delivery.
- Provides quantitative temperature readout and remote thermal monitoring for plant management.
- Monitor newly installed assets or older assets after maintenance to identify risk for infant mortality or faults.
- Continuous monitoring without personnel constraints.
- Remotely monitor multiple, distant substations from a central location.
- Automated analysis with built-in industry-standard analytics.
- Reduced maintenance costs and enhanced personnel safety.
- Auto tracking of hot spots and showing the temperature values.



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