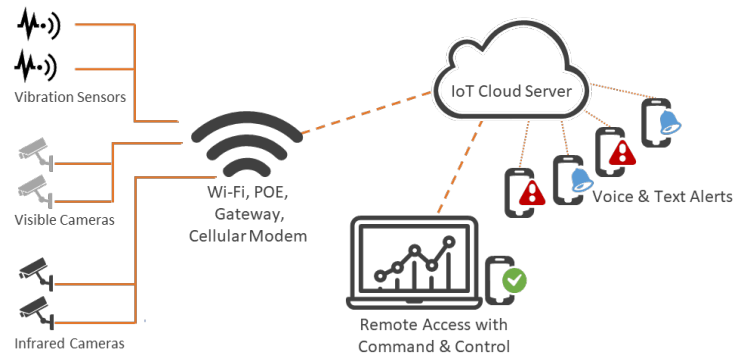# moviTHERM
advanced thermography solutions

iCM
Intelligent Condition Monitoring Solution

MIO CLOUD

MoviTHERM *iCM* is an intelligent condition-monitoring solution that uses thermal imaging and other sensing technology to provide a holistic understanding of asset health. Leveraging IoT connectivity with cloud computing, *iCM* more efficiently detects and alerts of potential equipment failure with low installation and maintenance costs. MoviTHERM *iCM* can scale to connect and monitor multiple sites from a central location anywhere in the world.

Vibration Sensors

Visible Cameras

Infrared Cameras

Wi-Fi, POE, Gateway, Cellular Modem

IoT Cloud Server

Voice & Text Alerts

Remote Access with Command & Control

Example MoviTHERM *iCM* configuration for Condition Monitoring

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PREVENTATIVE STAGE MAINTENANCE
Fixed infrared cameras "see" heat at the earliest signs of degradation.

- 24/7 non-contact monitoring of critical assets and processes.
- Monitor large areas with a single camera or zoom into critical locations.
- Ruggedized for industrial settings for long-life reliable detection.

CLOUD-BASED IoT ADVANTAGE
The cloud-based platform allows trouble-free, reliable access.

- No software to install or maintain as the application resides in the cloud.
- Monitor conditions from any device from anywhere with an internet connection.
- Reduces hardware, costs, and the maintenance burden.

COMPLETE SITUATIONAL AWARENESS
Always "in the know" with dashboards, automated reporting, and alerts.

- Voice, text, & email alerts ensure conditions get communicated.
- Multi-sensor compatibility connects the best technology for monitoring.
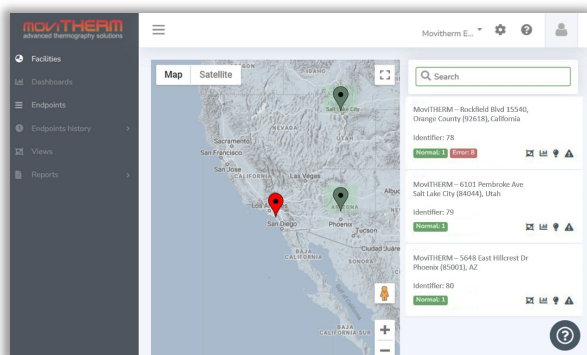- Easily scalable to monitor multiple locations in a single dashboard.

MIO CLOUD
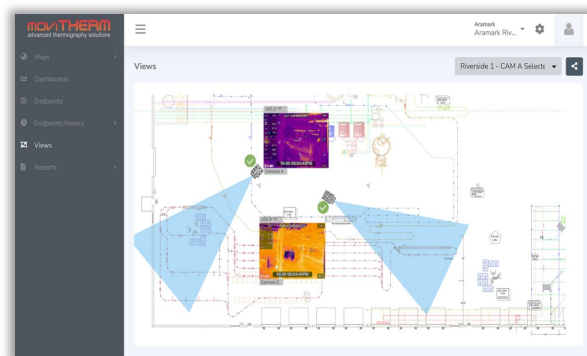## Secure cloud-based application for IoT Monitoring

Mio CLOUD is a subscription software that connects industrial sensors creating systems that monitor, collect, exchange, analyze, and deliver valuable insights that drive more intelligent, faster decision-making. This cloud-based application is the backbone of MoviTHERM's *iCM* Solution. It simplifies installation, reduces maintenance costs, provides easy access from anywhere worldwide, improves situational awareness, and ultimately keeps people safe and processes running.

A customizable, comprehensive dashboard display highlights sensor measurements, camera imagery, sensor health, and alarm status.

Multiple sites can be monitored from a single dashboard with the ability to "drill down" for a more detailed look.

A map display gives maintenance personnel a forward-looking view showing sensor locations, sensor coverage, camera images, and alarm status, allowing for an informative condition assessment before servicing.

Specifications

Infrared Camera

Available Resolutions	160 x 120, 464 x 348, or 640 x 480
Detector	Uncooled LWIR
Camera Power	Power over Ethernet Switch

Sensors

Sensor types	Vibration, Ultrasound, Tank Level, Voltage, Amperage, Humidity & Temp
Surveillance Cameras	Visible light cameras
VMS	Video Management & Recording System, upon request
Digital Inputs	Monitoring of alarm or event inputs from other devices via digital input

Alerts, Alarms, & Reports

Notifications	Alerts & Alarm notification via text message, Email, and Dashboard
Auto-Dialer	Virtual Auto-Dialer, Configurable Phone Numbers and Contact Names, Message creation via Text-to-Speech interface
Reports	Dashboard Reports, Scheduled reports via email, customizable for daily, weekly, monthly
Alarm Outputs	Digital Out, Relay out, Solid State Relay out for local annunciators etc.
Alarm Response Time	Locally via Gateway immediately upon breach of alarm threshold. Gateway signals cloud server an alarm condition, independent of cloud data update rate.

Cloud & Gateway Communications

Internet Connection	Industrial Cellular Modem, 3G, 4G, 5G*, LTE or via existing customer network (*where available)
Cellular Carriers	T-Mobile and Multi-Carrier Plans available, world-wide support
SIM Card	Industrial Grade with automatic failover - requires multi-carrier plan
Cyber Security	Web Interface: 2048 bit SSL Encryption, HTTPS, Secure MQTT, Encrypted VPN
Remote Support	via Encrypted VPN, included with all subscriptions
Local Deployment	Local Deployment available with server on premises. Does not require any Cloud Server or Internet connection.
Gateways & Protocols	WiFi, ModBUS RTU/TCP, Ethernet/IP, MQTT, RestAPI, LoRaWAN, OPC UA, HTTPS, Pi Historian, 4 to 20mA, 0 to 10VDC, RS-485, RS-232. Others upon request
Gateways	Configurable, Edge AI, allow complex logic to be executed at the edge

*Specifications subject to change without notice. 2/2022
*Exact system components and IR camera model are site dependent.

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