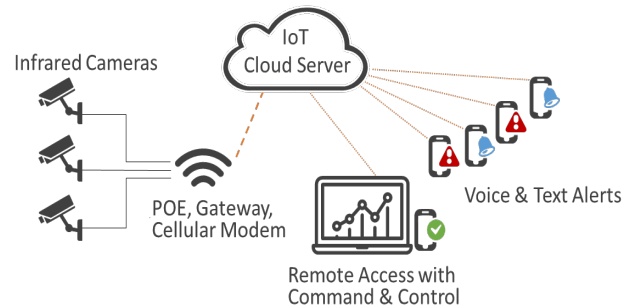# moviTHERM
advanced thermography solutions

iEFD

Early Fire Detection for Battery Charging and Storage

Lithium-ion batteries are commonly used in various portable electronic devices and electric vehicles due to their high energy density and long life span. However, lithium-ion battery charging and storage present a significant fire risk. Overcharging, overheating, and physical damage can cause the battery to fail, leading to thermal runaway and potentially resulting in a fire or explosion. MoviTHERM *iEFD* uses smart thermal imaging technology to detect potential thermal anomalies in batteries, which can signal early signs of overheating or a fire. The system can then alert operators, allowing them to take immediate action to prevent a fire. The *iEFD* system provides an added layer of safety for lithium-ion battery charging and storage, reducing the risk of catastrophic incidents.

Example MoviTHERM iEFD configuration for Battery Monitoring

EARLIEST STAGE FIRE DETECTION
Thermal Imaging cameras "see" hot spots before smoke and fire form.

- Thousands of measurement spots with accurate, repeatable results.
- 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" and informed at the first signs of danger.

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

**Secure cloud-based application for Early Fire Detection**

iEFD Cloud is an IoT application subscription for managing MoviTHERM's *iEFD* early fire detection solution for Battery Charging and Storage. As the application resides in the cloud, it simplifies installation, reduces maintenance costs, provides easy access anywhere in the world, improves situational awareness, and ultimately keeps people and assets safe from fire.

A customizable comprehensive dashboard display highlights sensor measurements, camera imagery, sensor health, and alarm status.
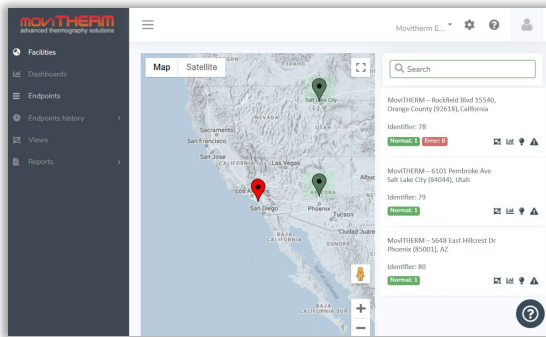
Multiple sites can be monitored from a single dashboard with the ability to "drill down" for a more detailed look.
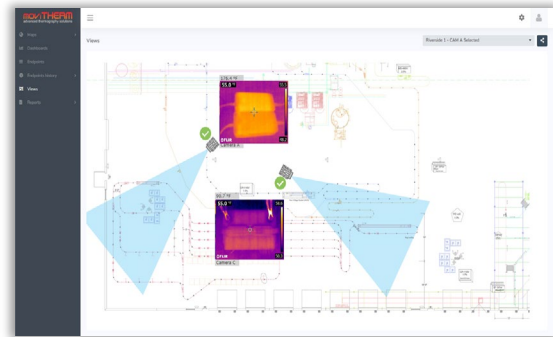
A map display provides an overhead view showing sensor locations, sensor coverage, camera images, and alarm status, allowing for an informative situation assessment before entering the scene.

Specifications

Infrared Camera	
Available Resolutions	60 x 80, 160 x 120, 464 x 348, or 640 x 480
Detector	Uncooled LWIR
Camera Power	Power over Ethernet Switch

Sensors Others	
Smoke Detectors	Ionization and Photo-Electric Types, LoRaWAN
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 are subject to change without notice. 1/2023
*Exact system components and IR camera model are site dependent.

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