



AIMS

CORROSION UNDER INSULATION MANAGEMENT SOLUTIONS (CUIMS)

CAPABILITY STATEMENT



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CUI Management Solutions (CUIMS)

IEV's CUIMS is an integrated and intelligent solution for managing Corrosion Under Insulation (CUI).

We combine cutting-edge technologies such as embedded sensors, wireless data transmission, intelligent software platforms, predictive analytics, robotics, smart CP-based protection systems.



MONITOR

CorrosionRADAR

Remote Monitoring System for CUI

CorrosionRADAR is a state-of-the-art remote CUI monitoring system that employs proprietary Electromagnetic Guided Radar (EMGR) sensors to detect and precisely locate moisture and corrosion beneath insulation. CorrosionRADAR streams continuous data to a central dashboard for true 24/7 visibility, eliminating routine site access and enabling faster, targeted intervention.

- Pipelines - Vessels - Columns -
- Heat Exchangers - Storage Tanks -

Key Benefits

- **Early Warning System:** Detects CUI long before visible damage occurs.
- **Predictive Analytics:** Enables shift from reactive to predictive integrity management.
- **Reduced Costs:** Minimises unnecessary insulation removal and NDT surveys.
- **Improved Safety:** "Always-ON" wireless monitoring provides remote visibility and reduces personnel exposure to hazardous areas.
- **Digital Integration:** Compatible with RBI and asset integrity platforms.



INSPECT

Guided Ultrasonic (GUL) Long-Range UT Screening

GUL rapidly screens long lengths of insulated piping to flag corrosion-under-insulation (CUI) risks with minimal access, so maintenance teams focus only where it matters.

Key Benefits

- **Long-range reach:** ~30 m each way per ring
- **360° coverage:** Full cross-section; detects hidden CUI at supports, saddles and penetrations.
- **Minimal access:** Only a narrow insulation strip thus no major cladding removal or heavy scaffolding.
- **In-service & safe:** Test live lines. Non-intrusive, no radiation, no confined-space entry.

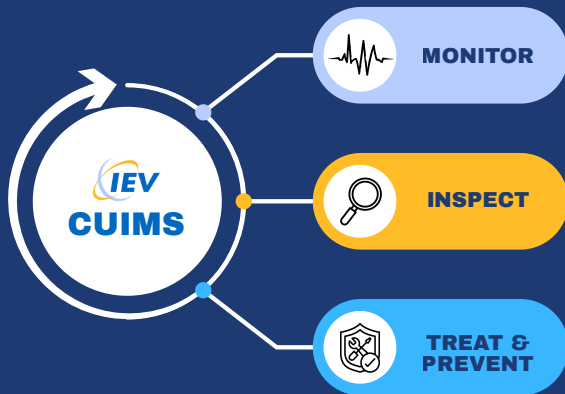


Automated Digital Radiography (ART) Long-section CUI Inspection

ART robot crawls along insulated pipe and captures live, high-resolution digital X-rays to reveal wall loss, moisture, and insulation defects right through the cladding.

Key Benefits

- **Pin Location:** Confirms suspected CUI and pinpoint locations.
- **Mapping:** Generate corrosion maps for targeted NDT / repairs.
- **Target Areas:** Avoid blanket strip-outs thus saving up to 75% by focusing only on confirmed areas.
- **Complex Zones:** Examine hard spots like supports, saddles, and concealed zones.



Real-time sensors to flag CUI risk early

Rapidly screen to localise hotspots, then apply focused inspection to confirm and quantify indications

Repair, Seal and Shield

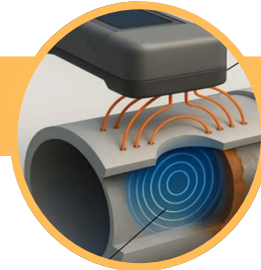
INSPECT

Pulsed Eddy Current (PEC/PECA) Targeted Wall Thickness Measurement

Pulsed Eddy Current (PEC) PEC Arrays (PECA) and is a non-destructive electromagnetic technique used to measure wall thickness through insulation, coatings, or cladding—without removing insulation or requiring bare metal contact. It is ideal for quantifying corrosion under insulation (CUI) after an area of concern has been flagged by broader screening tools.

Key Benefits

- **No Insulation Removal Needed:** Works through insulation, paint, and weather jackets even on hot or asbestos-insulated pipes.
- **In-Service Friendly:** Operates on live systems without shutdown.
- **Fast, Non-Contact Scanning:** Scan several meters per minute, suitable for large surfaces or complex geometries.
- **Insensitive to Surface Condition:** Not affected by coating, rust, or dirt.
- **Safe and Radiation-Free:** Unlike radiography, PEC poses no safety hazards or area restrictions.



TREAT & PREVENT

TRIZASHIELD CUI Prevention

TRIZASHIELD is a three-layer, non-bonding CUI repair and prevention system that combines cathodic and barrier protection. Surface-tolerant and built for cyclic temperature service, it delivers durable, fail-safe protection over long lifecycles.

Key Benefits

- **Wide operating window:** -60 to 260 °C and withstands cyclic temperatures.
- **Long design life:** Engineered for up to 50 years of protection.
- **High reliability:** Dual protection (cathodic + barrier) with a three-layer, fail-safe architecture.
- **Surface tolerant:** Non-bonding system reduces dependence on base-metal condition.



TRENTON Microcrystalline Wax-Tape Water-Ingress prevention

Trenton Microcrystalline Wax-Tape is a cold-applied, non-hardening wrap that displaces moisture and seals out water at flanges, supports, and insulation terminations stopping ingress that leads to CUI.

Key Benefits

- **Water-tight barrier:** Non-curing, hydrophobic wax matrix blocks water and oxygen, and maintains a continuous seal and overlaps when pressed into place.
- **Surface-tolerant & conformable:** Bonds to minimally prepared or damp steel; wraps around irregular shapes, threads, and clamps.
- **Cold-applied & safe:** No blasting, heat, or curing; no VOCs, fast installation with immediate return to service.
- **Durable:** Stays pliable under thermal movement; easy to re-apply for inspection or maintenance.



ABOUT US

IEV is a Malaysia-based engineering company established in 1987, specializing in asset integrity, inspection, repair, and decommissioning for energy and industrial facilities across Asia-Pacific. We combine proven engineering with advanced technologies to extend asset life, reduce risk, and optimise total cost of operations. Our multidisciplinary teams deliver end-to-end solutions, from diagnostics and life-extension programs to safe, compliant decommissioning underpinned by rigorous HSE standards and data-driven decision making.

Within Corrosion Under Insulation Management (CUIMS), we integrate monitoring, overall and targeted screening, and durable remediation systems to prevent recurrence and minimise downtime. Trusted by operators for complex offshore and onshore projects, IEV brings decades of experience, reliable execution, and measurable results to every engagement.

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