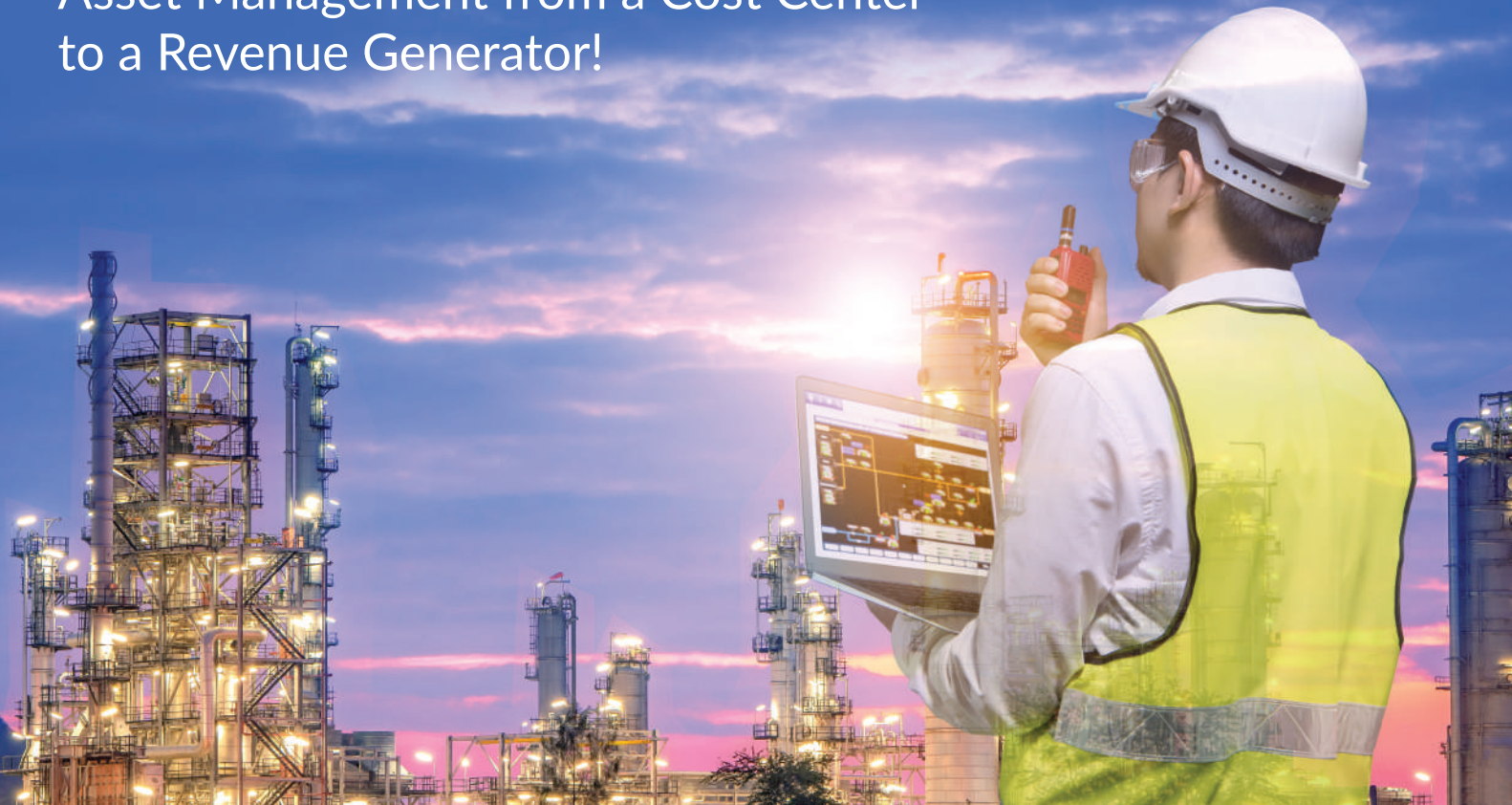


Look, Listen & Feel (LLF)

Powered by
mcube™

Transform your
Asset Management from a Cost Center
to a Revenue Generator!





Product information note

Look, Learn, and Feel is an AI-driven, real-time, asset monitoring solution at the enterprise level that collects and analyzes operational data in real-time to optimize asset performance, and to detect and predict any imminent asset health issues.

It is built on the advanced analytics and AI Platform tcgmcube™, which not only ensures asset safety and reliability but by utilizing the industrial data, the LLF solution helps create opportunities, leading to enhanced performance and sustainability.

In the high-stakes world of petrochemicals and process manufacturing, asset reliability and performance are crucial. Unplanned downtime, maintenance inefficiencies, and asset failures can lead to financial losses, safety hazards, and operational disruptions. Manufacturers need a robust solution that not only monitors asset conditions but also provides actionable insights to pre-emptively address potential issues.

TCG Digital's Look, Learn, and Feel (LLF) is a solution developed for the process manufacturing sector. It offers comprehensive remote monitoring of all assets in the production plant area, ensuring optimal performance and longevity through real-time insights.

WHAT IT DOES?

'Look, Listen, and Feel' is an innovative asset monitoring solution that

- Improves efficiency, reliability, and safety with real-time insights into asset conditions, from visual inspections to data-driven analysis
- Identifies issues before they escalate
- Optimizes maintenance schedules
- Maximizes asset utilization
- Provides an understanding of the economic value of each piece of data that is currently being gathered. This enables the Field engineers to readily access data trends for any KPI while inspecting an asset in real-time, thus giving them a view of the equipment reliability on the field.

WHO IS LLF MEANT FOR?

- Manufacturers & industries who require asset inspections in their facilities to ensure maintenance reliability and safety of the assets
- Field operators, process & reliability / quality engineers, plant heads etc.

CHALLENGES ADDRESSED

Unplanned Downtime: Frequent asset failures disrupt operations and cause costly downtimes.

Maintenance Inefficiencies: Traditional schedules miss early warning signs, leading to over-maintenance or failures.

Data Silos: Scattered data hinders analysis, reducing efficiency and impacting long-term planning.

Safety Risks: Poor asset monitoring increases accidents, safety breaches, and non-compliance.

Decision-Making Delays: Lack of real-time asset visibility hampers decisions and operational efficiency.

BENEFITS

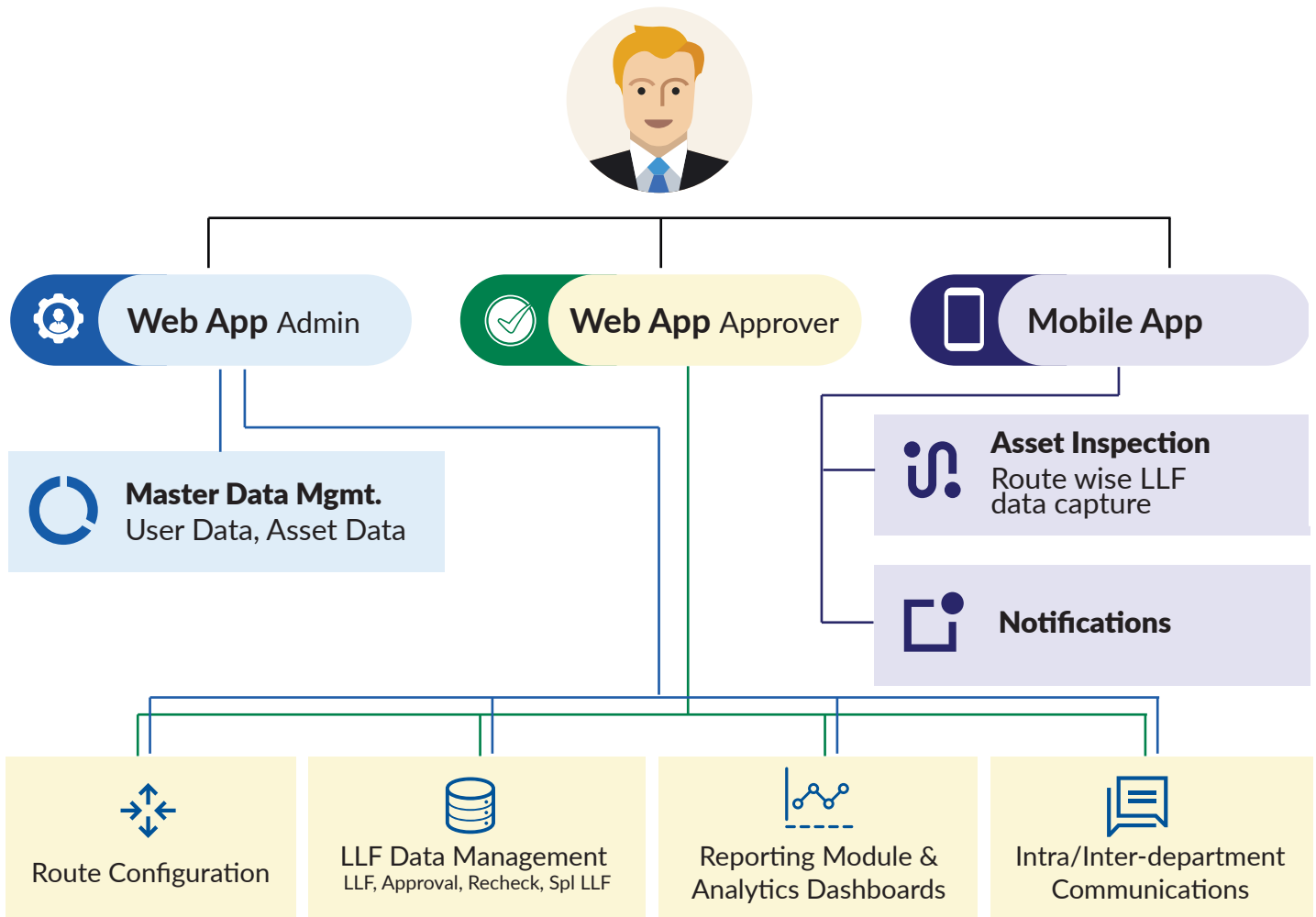
Reduced Downtime: Prevents unplanned halts and costly emergency repairs.

Maintenance Savings: Optimizes schedules and detects anomalies early, cutting unnecessary maintenance costs.

Extended Asset Lifespan: Timely maintenance maximizes asset life and Rol.

Boosted Efficiency: Paperless processes and real-time data access streamlines operations and enhances productivity.

Product information note



Product information note

- Geo-location tracking and accuracy for proper asset monitoring is enabled
- Smart document and trend reference at anytime on field
- Reduction in paper-based LLF, thereby, less chances of assets being overlooked/over maintained
- Photos/videos of abnormalities for better analysis and training of workforce/on-field observers
- Highlights tasks status and abnormalities, which will enable quick action before any emergency/breakdown situation arises
- Intra/Inter-dependent department asset information is easily achieved using the Super Admin role, which was previously a tedious manual process.

Salient Features



PROACTIVE MAINTENANCE

- **Centralized dashboard:** Proper checklist of allocated, pending and completed tasks using the dashboard. Supports long-term strategic planning with predictive insights and data-driven recommendations.
- 📄 **Paperless Operations:** Transition to automated, digital processes, eliminating paperwork and improving data accessibility. Thus, less chances of assets been overlooked/over maintained



HOLISTIC MONITORING

- 🔄 **LFF Data Management - Data Trend:** Anytime addition and modification of master STER data by super administrators
- 📄 **Smart document and trend reference anytime on field. Robust Data Integration:** Integrates data from various sources into a unified platform, ensuring consistent, high-quality data for analysis.
- 💬 **Intra and inter department communication** enables proactive action outside purview of regular LLF
- 📡 **Standardized communication scheme** with digitalized data collected from field



OPERATIONAL EFFICIENCY

- 📄 **Barcode Scan & Geo-Location Tracking:** Enhance asset tracking and monitoring accuracy with geo-location capabilities
- 📄 **Asset Flagging:** Highlight tasks status and abnormalities which will enable quick action before any emergency/breakdown situation arises
- 📷 **Anomaly Detection:** Take photo/video of abnormalities for better analysis for on-field observers
- 🔄 Ensuring altitude capture of assets via reading data from NFC Chip

CASE STUDY:

Optimizing Plant Operations with LLF Automation for a Large Petrochemical Plant

Client:

Haldia Petrochemicals, one of India's largest Petrochemical Manufacturers (700,000 TPA ethylene, 1,270,000 TPA PTA capacity)



Challenges:

Geographic Corrosive Conditions: Required frequent static and rotary equipment inspections.

Wanted to automate its Manual Processes: Need to speed up inspections and avoid delays in data entry.

Recognized the Opportunity for Operational enhancements: Wanted to increase visibility of equipment outside the DCS system

Solution:

The LLF application offers a comprehensive suite of features for optimized asset monitoring:



Web & Mobile Access: Field access with checklists, trend references, and multimedia capabilities for reporting abnormalities.



Geo-Tracking & Compliance: Accurate geolocation tracking, compliance measures, and NFC/GPS integration for seamless operations.



Automation & Analysis: Automated OEM data configurations for trend detection and deviation alerts for timely action.



Comprehensive Reporting: Real-time KPI tracking, asset health analysis, and reporting modules for management insights.

Result

The LLF Automation solution provided measurable improvements:



Optimized Maintenance: Reduction in emergency repairs, improved asset health, and reduced maintenance costs.



Enhanced Decision-Making: Real-time data visibility enabled faster, more informed decisions.



Operational Efficiency: Reduced data processing time from hours to seconds, transforming asset management from a cost center to a value generator.



Increased ROI: From reduced operational disruptions to improved technical staff training, LLF Automation has delivered substantial ROI.



How do we partner with you?

As a strategic partner, we don't just offer a product; we deliver a tailored solution that aligns with your unique operational needs and goals.

Seamless Integration: We work with your team to effortlessly integrate LLF into your system, ensuring minimal disruption.

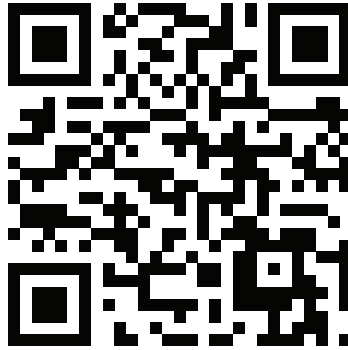
Continuous Innovation: LLF evolves with your business, offering regular updates and custom enhancements.

Training & Support: We offer comprehensive training and ongoing support to maximize LLF's potential.

Flexible Engagement: Choose between Cloud-based SaaS with subscription or On-premise deployment.



Scan to watch our LLF demo video:



Lummus Digital is at the forefront of transforming the oil and gas downstream sector by offering innovative digital solutions that tackle the complex challenges faced by refineries and petrochemical industries. As a joint venture between TCG Digital and Lummus Technology, we blend decades of process engineering expertise with advanced AI and data science to deliver tailored solutions for measurable outcome. Our AI Analytics platform mcube™ is at the heart of these transformations. We enable organizations unlock the full potential of their data, and by seamlessly integrating AI/ML capabilities into their business processes, we empower businesses to accelerate their digital transformation journey, enhancing agility and driving impactful results.

Our team, comprising over 500 process engineers and 100+ data scientists, we are committed to developing and implementing solutions that enable refineries and petrochemical units to achieve success in their AI-driven business transformation journey.

www.lummusdigital.com



mcube™ is TCG Digital's flagship Data, AI, and Analytics platform—engineered at the intersection of deep industry knowledge and digital innovation. Built on a domain-driven design, it seamlessly navigates the most complex and disparate data landscapes. With AI 2.0 at its core, mcube™ fuses advanced models with real-world context to solve high-impact business challenges. By integrating mcube.data, mcube.ai, and mcube.agents, it transforms enterprise data into intelligent ecosystems. mcube™ drives semantic discovery through ontologies, and empowers agentic applications for autonomous decision-making and continuous learning. From harmonizing data to deploying intelligent agents, mcube™ accelerates 'velocity to value'—delivering clarity, intelligence, and outcomes at scale.

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