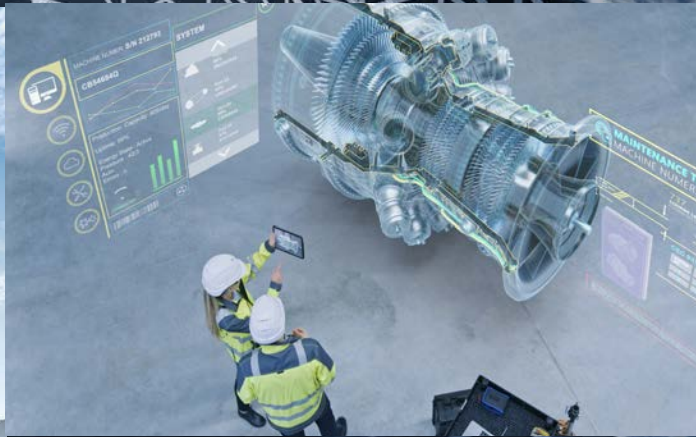




Digital transformation through data-driven decision making



Welcome

Founded in 1992, Engineering Consultants Group, Inc. has grown with our customers to make a positive impact on industrial operations. We take a partnership approach to the development of monitoring and diagnostic software for process equipment. ECG is a group of experienced engineers focused on building effective solutions that aid in operational efficiency and equipment health monitoring.

As a company focused on our customers, we have a passion for developing software solutions that best suit our customers' unique needs. We do this by harnessing years of industry knowledge, leveraging advanced statistical technologies, and preserving ongoing dialogue between ECG and software users. Our commitment to product excellence and client success makes ECG a vanguard in the equipment monitoring and diagnostic field.

Too often, software companies sell a "one solution fits all" approach, leaving customers to adapt their operational processes to a software's capabilities. At ECG, customers lead our development roadmap and collaborate on new and upcoming features. No more "inside-the-box" thinking.

Our team of talented engineers and software developers work with you to build products that solve real-world issues found in process-heavy industries. Together, products are tailored to your company's character and operational needs. Agility is our strength, giving us the ability to implement new adaptive product features quickly and reliably.

Elite, collaborative, and proven, ECG is ready to support your company's digital transformation.



Michael Santucci



James Scavuzzo



Michael Santucci
President & Founder

James Scavuzzo
Senior Vice President



Our Pledge

We will work with you
to accomplish your
company's monitoring
and diagnostic goals.

The ECG Advantage



Dedicated

Unlike our large competitors, ECG takes commitment to our customers to another level. Through accountability and project ownership, our customers are supported for long-term success.

Travel the product roadmap with us through personal interactions with our design and development teams.

We assist companies through their transition to an IIoT infrastructure and equip your operation with tools built for success.



Focused

New and targeted product features implemented quickly and accurately — keeping your company ahead of unanticipated failures.

Our products use proven technology to solve problems commonly encountered in many industries.

Focused on informational accuracy that enables data-driven decisions.

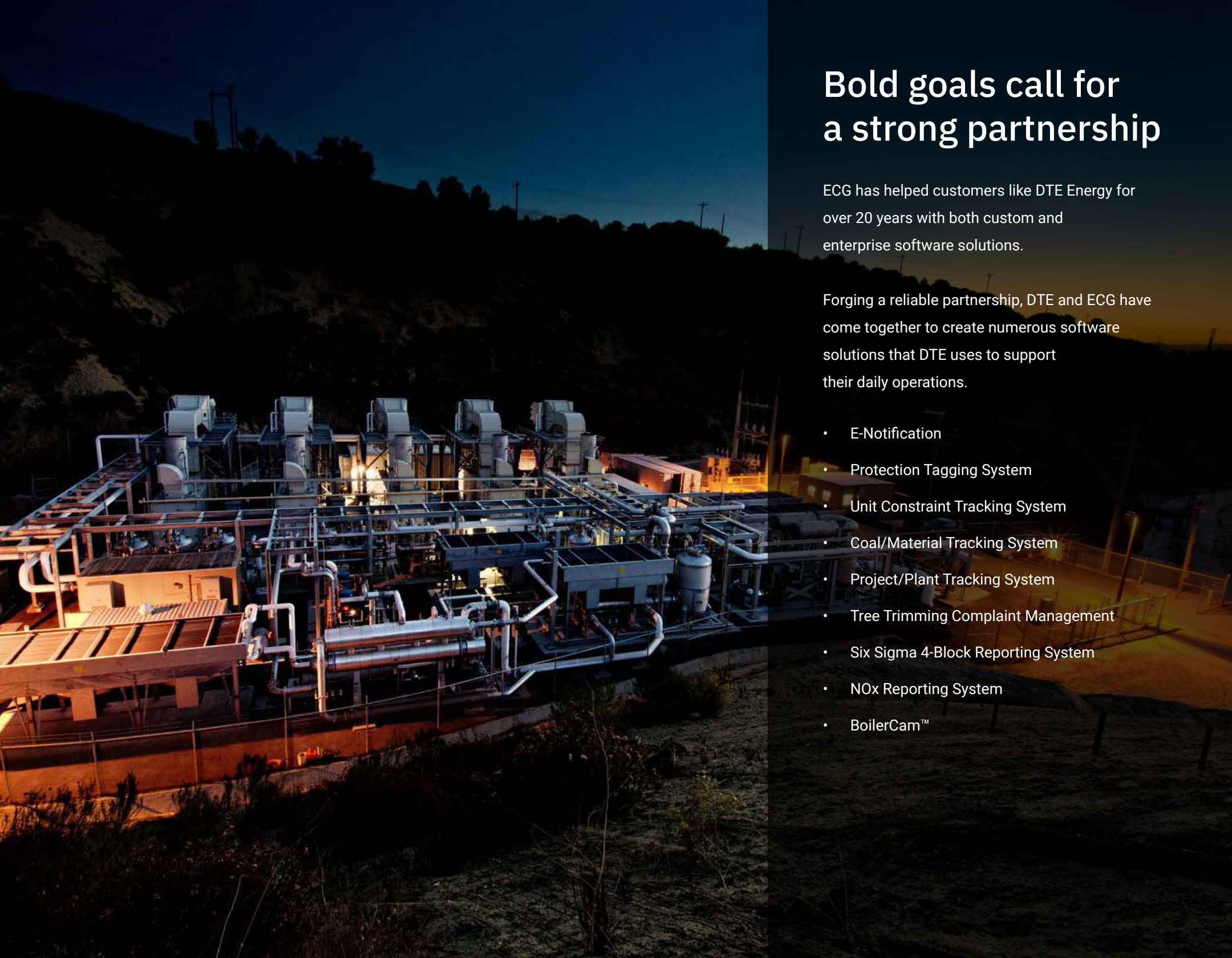


Flexible

Our software is equipment and process-agnostic and can be applied in a number of industries — from steel to mining, and power generation.

Our core products are just the beginning of our story. Team up with ECG on custom features that expand software capabilities.

ECG offers flexible licensing and subscription options suited for any sized company.



Bold goals call for a strong partnership

ECG has helped customers like DTE Energy for over 20 years with both custom and enterprise software solutions.

Forging a reliable partnership, DTE and ECG have come together to create numerous software solutions that DTE uses to support their daily operations.

- E-Notification
- Protection Tagging System
- Unit Constraint Tracking System
- Coal/Material Tracking System
- Project/Plant Tracking System
- Tree Trimming Complaint Management
- Six Sigma 4-Block Reporting System
- NOx Reporting System
- BoilerCam™

Put our solutions to work.



Predict-It™

Three powerful modules allow users to predict impending equipment failures well before they occur. Give your equipment a health check. Pinpoint the root-cause of faults using Bayesian network technology for differential diagnosis. Manage cases to streamline O&M operations, reduce costs, and drive your P&L statement success.

Vistra Energy uses over 4,000 Predict-It asset models to monitor 1,700 assets across their 72 generating units, 24/7 from their Dallas based Performance Optimization Center.



Glance™

Leverage Glance for mobile and web browser viewing of your OPC®, OSIsoft® PI System®, or InfluxDB open-source historian data in a package that won't hurt your budget. Glance can be utilized in several operations functions, from process monitoring to materials purchasing and operational efficiency checks. If you can imagine it, Glance can help you visualize it.

TH Foods operates four Food Manufacturing plants leveraging Glance to provide a cost-effective infrastructure for its OPC enabled manufacturing management system.



E-Notification™

Alert your team about equipment alarms, monitor critical data from remote locations, and create custom reports with E-Notification. Receive emails and texts about your OSIsoft PI System data based on user parameters. Configure user alerts from a web-based interface. E-Notification lets you know about process deviations whenever they happen.

Marathon Petroleum's Terminal, Transport, and Rail division leverages E-Notification to provide equipment and process alerts for the OSIsoft PI System data monitoring their critical assets.



Predict-It

Advanced Equipment Health Monitoring

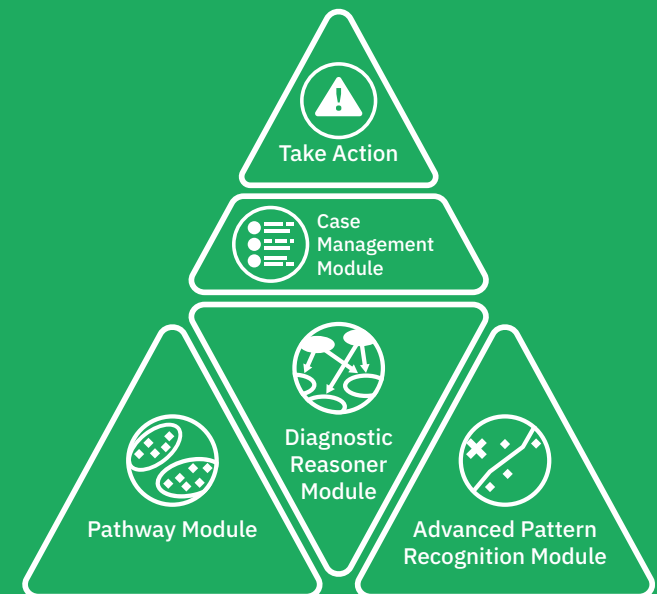
Your Trusted Partner in Real-Time Equipment Health Monitoring

Predict-It is a powerful analytic solution for the OSIsoft PI System that monitors the health of critical process equipment. Predict-It's enhanced Advanced Pattern Recognition (APR) facilitates early anomaly detection during normal operation that triggers fewer false alarms. The Pathway module enables detection of anomalies during asset start-up, shut-down, and in batch processes. Predict-It's Diagnostic Reasoner incorporates multiple tiers of data from each of the anomaly detection modules and subject matter experts that enhance the accuracy of fault analysis. Predict-It optimizes predictive maintenance efforts — saving time, money, and prolonging equipment life.

Predict-It Advantages

- Easy Deployment and Low Life Cycle Cost
- Superior Diagnostic Engine — X-Ray vision for Equipment Health
- OSIsoft Asset Framework Compatible — Leverage your Current Infrastructure
- Proven and scalable technology utilized by industry leaders across the world

Digital transformation through data-driven decision making



Predict-It In Action

Deploy, Detect, and Diagnose



Deploy

- Easy self-deployment aided by automated processes and templates, or via ECG services where computer scripts transfer information for model creation.
- Mature technology permits M&D Center engineers to apply unique Predict-It features for reduced manpower.
- OSIsoft Asset Framework-enabled model building.
- Build models and go from zero to full predictive health monitoring within weeks.



Detect

- Two detection methods for complete asset coverage in all operating states and conditions.
- Accurate anomaly detection ensures less model maintenance.
- Advanced model maintenance automation for reduced required manpower.
- Expert peer analysis provides asset condition reviews not seen in other leading software applications.
- Open and manage cases in PlantView® Predictive Maintenance for a streamlined anomaly response process.



Diagnose

- Asset make/model-specific diagnostics ensure advanced troubleshooting and determination of anomaly causes.
- Smart system captures expert intuition and enables knowledge transfers from senior staff to less-experienced personnel.
- Allows for user-specific asset diagnostics and use of community or PEER networks for an advanced digital “second opinion”.
- Identify equipment-specific details for precision diagnosis.

Predict-It Anomaly Detection

Dual detection capability for complete asset coverage

Predict-It detects equipment issues in all modes of operation, providing coverage from start-up, through normal operation, and when shutting down.

Predict-It's Advanced Pattern Recognition (APR) module uses robust algorithms that track trends in process variables on a continuous basis and compare them to historical operation. This allows for real-time monitoring that gives O&M teams a look at the operation of machines during continuous processes.

Predict-It's Pathway module introduces a new way to monitor your equipment during the most vulnerable stages of operation using multivariable analysis techniques. Start-ups and shut-downs account for much of the wear and tear that a machine will undergo in its lifecycle. Awareness of changes in key variables can make all the difference in optimizing operations and getting more productive hours out of your assets.

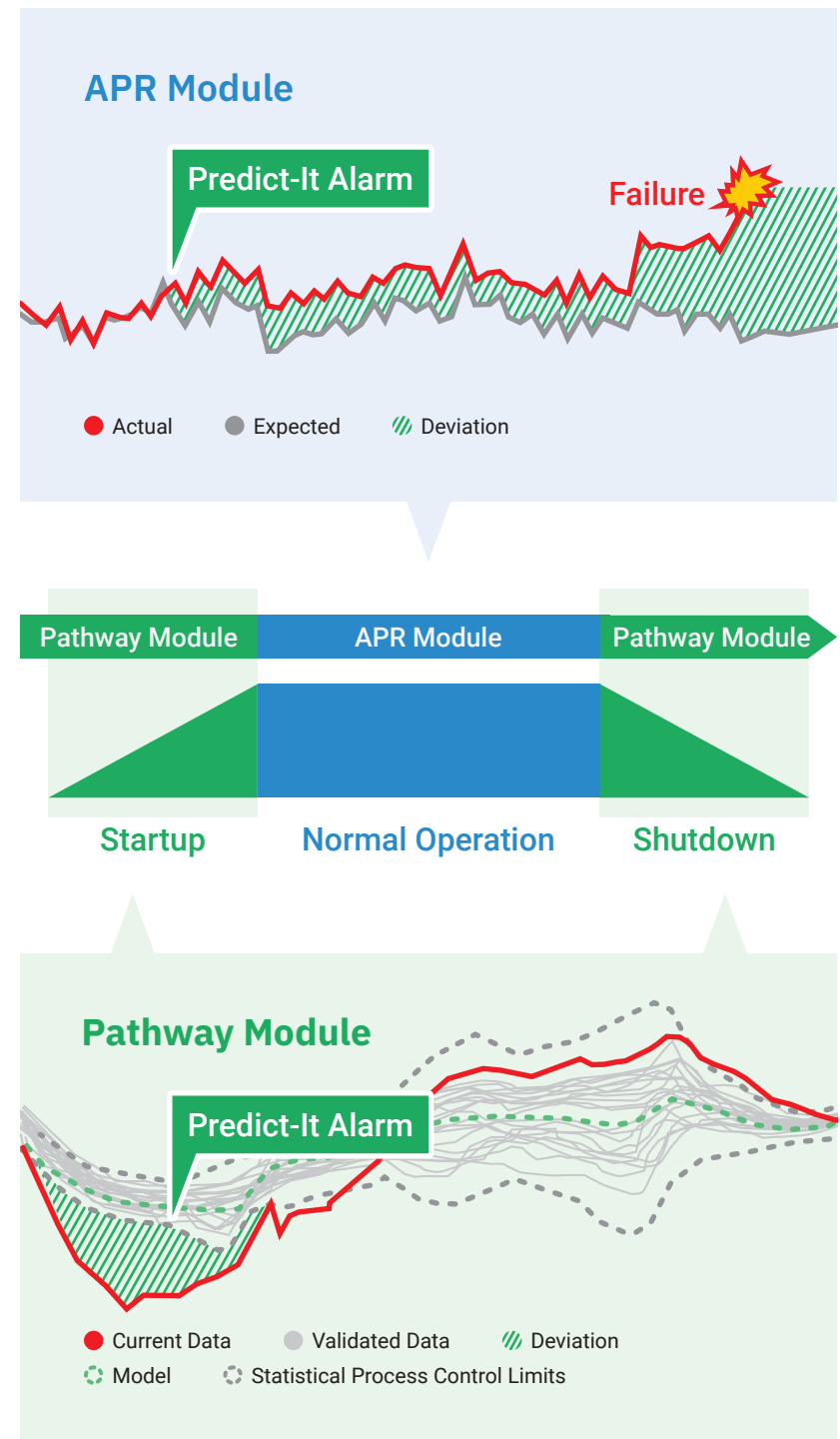
Detection of developing equipment issues are flagged weeks to months ahead of traditional monitoring techniques, providing time to plan corrective actions on your schedule.

APR Module

- Continual Operation – long runs
- Data snapshot every 5-15 min.
- Enhanced Similarity Based Modeling (SBM)
- Snapshot of expected vs. current value

Pathway Module (Batch Processes)

- Batch Processes – short runs
- Data snapshot every 1-10 sec.
- Univariate and Multivariate Models (MVDA)
- Overlay of process maturity events



Predict-It Diagnostic Reasoner

A digital doctor for your process equipment

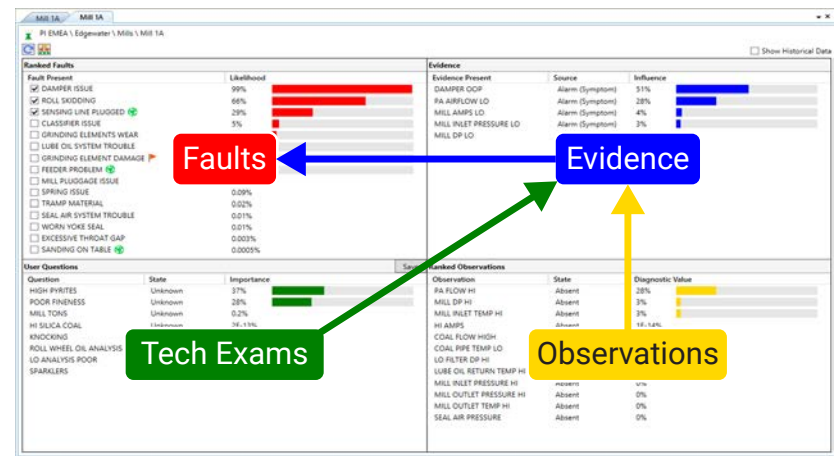
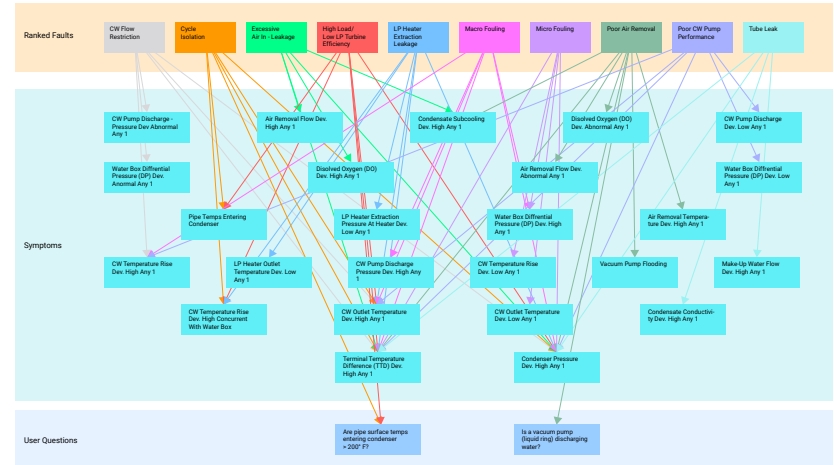
Predict-It's Diagnostic Reasoner is a dynamic diagnostic engine that capitalizes on Causal Asset Networks (CANs). These networks are designed for the specific make and model of the assets they evaluate — resulting in more precise and interactive diagnostic results. CANs' power the Diagnostic Reasoner, suggesting multiple root causes for failures and assigning exact probabilities for each outcome. Historic case data forms the basis of the Reasoner's differential diagnosis.

Anomalies from both APR and Pathway feed into the Diagnostic Reasoner to provide evidence and start the analysis process. Subject matter experts can add knowledge of typical asset behavior, which is captured by Predict-It and applied across a fleet of assets. Real-time observed symptoms from tech exam reports can be added to the diagnostic engine to facilitate a higher level of certainty. Symptoms derived from multiple sources and probabilistic calculations allow for pinpoint accuracy in Predict-It's diagnostics, taking the guesswork out of root-cause fault identification.

Over time, validated learning from confirmation of outcomes strengthens the engine's precision, making the Diagnostic Reasoner the superior diagnostic tool in equipment health monitoring.

Diagnostic Reasoner Benefits

- Tailored Asset Diagnostics
- Intuitive Fault Troubleshooting Logic
- Backed by Bayesian Open Architecture
- Out of the Box Diagnostics Available



Predict-It + Power Vision

A powerful combination to streamline case management

ECG and Power Vision partner to bring a time-tested case management module to Predict-It. Deployed by many top utility providers, PlantView is a trusted name in work-process transformation that increases process reliability, efficiency, and safety.

Predict-It now offers customers the option to deploy the PlantView Predictive Maintenance module (PlantView/PdM) for case management. Create, track, and review new, ongoing, or historical cases within Predict-It. Create dashboards, reports, and store emails within the PdM module. Record the value of saves to capture team performance and highlight maintenance efficiency gains.

Work-flow organization that will overhaul your team's day-to-day.

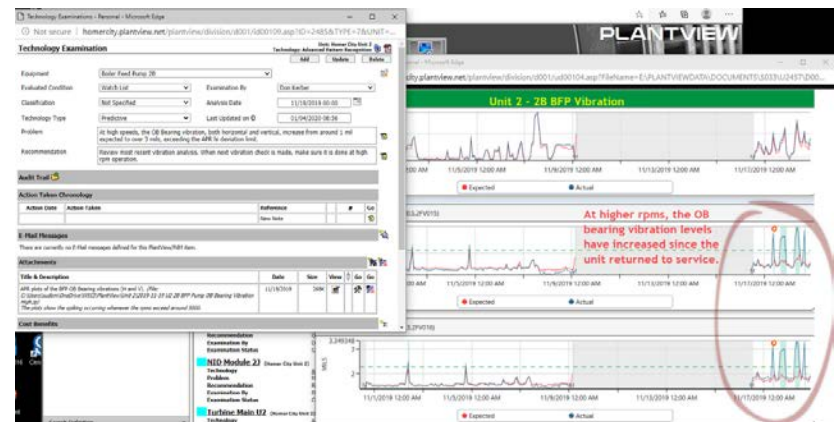


Case Management

- Manage anomaly life cycle
- Industry accepted value calculator — Value your Saves
- Reporting capabilities powered by Telerik
- Evaluate economic impact of Saves to demonstrate achievement of goals

Predict-It Case Management leveraging PlantView

- ECG has teamed up with Power Vision to offer a light version of PlantView's Predictive Maintenance module for case management
- PlantView is a mature, industry-leading Asset Management Software Solution





Remote Monitoring Service

Add our Experts to Your Team

Your Trusted Partner in Real-Time Equipment Health Monitoring

ECG now offers Remote Monitoring of critical process equipment by experts in the industry. APR gives you advanced warning – Diagnostics help you pinpoint the problem. Our experts take the guess work out of addressing equipment issues and maximizing your operational efforts. Predict-It's advanced analytics and diagnostics protect critical assets when you need it most. Our solution is a cost-effective alternative to expensive and difficult to staff O&M centers.

Remote monitoring can enable your operations to increase up-time and support condition-based maintenance strategies, which save resources and dollars. With key asset health and operational metrics, you have the information needed to transform your maintenance approach, protecting your assets and positively impacting your bottom line

Deploy, Diagnose, Report

- Alarm and Event Reports
- Machine Health Audits
- Diagnostic recommendations
- More, diverse, and comprehensive coverage than similar services
- Standard weekday coverage
- Optional 24/7 fall-of-the-sun coverage
- Ad-hoc Expert root-cause analysis
- Ad-hoc Unit Startup and shutdown report



E-Notification

Mobile Monitoring and Notification Platform for OSIsoft PI System



Your Process Data on the Go

E-Notification is a reporting and notification tool that sends text and email notifications in response to user-defined alarm parameters. E-Notification seamlessly integrates with Windows Domain Authentication or corporate LDAP authentication.

Users can easily automate individual daily reports or subscribe to other's reports with unique Microsoft Excel or PI ProcessBook® data. E-Notification gives users the freedom to configure their alert and notification settings.

E-Notification Advantages

- No PI System Experience Needed
- Prompt Notification Times
- Cost-effective Umbrella Licensing — unlimited users within a plant.
- Coordinated Response to Significant Alarm Events

Features & Benefits

- User-friendly and Flexible Interface
- Customized Alarming with email or text notifications
- Smart alerts using PI-PE syntax
- Scheduled Reporting
- Adaptable for Multiple PI System installations
- Web-based Administrative Capabilities
- Event-based Reports using Microsoft Excel and PI ProcessBook
- Additional Trending Featured within Custom Reports



Glance

Cutting-Edge Trending and Process Visualization

Your Mobile Visualization Tool for Operations

Glance is a real-time graphical visualization solution for OPC DA/HDA, the OSIsoft PI System, and InfluxDB users. With Glance, customers can access and analyze pivotal data on mobile devices using company networks. Glance runs on all modern devices that support HTML5 requiring no add-ons. This enables seamless collaboration across a fleet of industrial facilities. Follow your data wherever it takes you — from the office to the factory floor, and beyond.

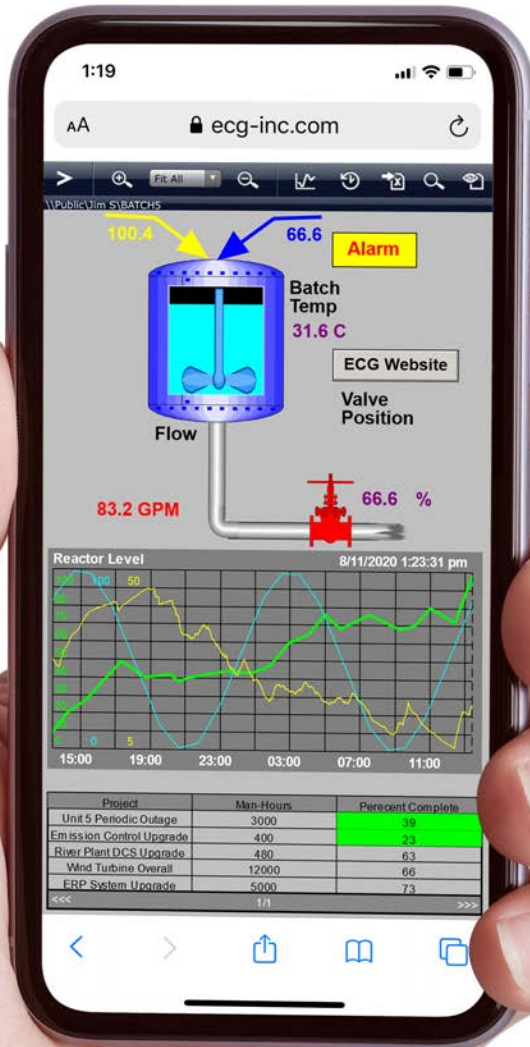
Glance Advantages

- Flexible licensing structure for large and small operations
- Easy Implementation
- Adaptable to any industry task
- Multilingual — easily configure your preferred language
- Lightning-fast display and table building
- View detailed process data on-the-go

Features & Benefits

- Mobile viewing of your process data utilizing your own custom-built displays and tables
- Easily build your displays with live data
- Intuitive drawing tools require minimal training and create an effective visual aid
- Robust interactive trending includes time period selection, multiple scales, data export, and streaming real-time data
- Advanced searching enables queries of metadata and integrated searches throughout PI Systems, InfluxDB historians, and OPC servers
- Public folders can be customized by department, facility, region, and more!

Features Built for Purpose



Data Management Friendly

View tabular data from relational databases such as SQL and OLE DB.

Employ standard OPC Data Access (OPC DA) and Historical Data Access (OPC HDA) specifications to retrieve and visualize real-time and historical data from any compliant OPC server.

A Consistent User Experience

Glance provides a responsive web interface for an optimum experience across all devices, mobile phones, tablets, and desktops. A single website interface does it all — stores, organizes, searches, views real-time information and builds dynamic process displays.

Advanced Display Builder

Software Toolbox®'s Symbol Factory gives users access to thousands of high-quality graphics when building industrial process displays. Customize displays to mimic your industry and process equipment.

OPC and InfluxDB Add-in for Microsoft® Excel®

Allows users to leverage the power of spreadsheet analysis with lightweight OPC data historians such as Kepware® KEPServerEX®. Directly integrates with OPC servers configured in Glance gives users the ability to import time series data into Microsoft Excel across a fleet-wide network. The same capabilities are now available for users of InfluxDB's open-source data historian.



Custom Software

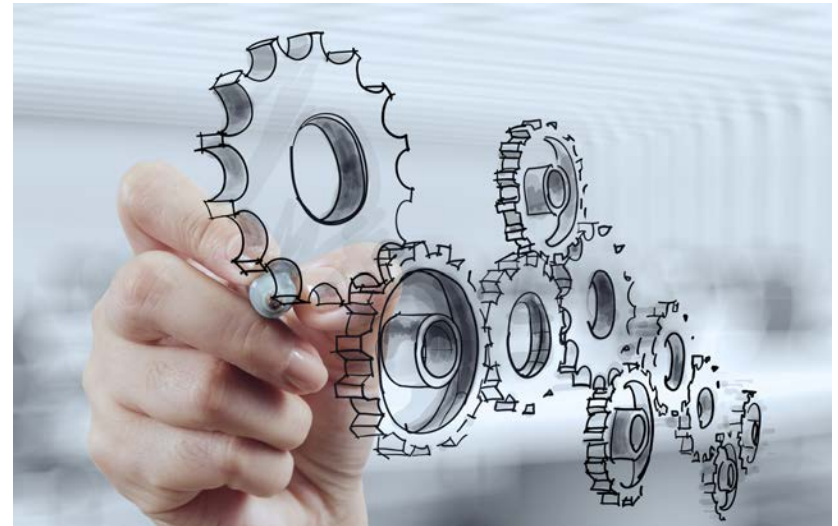
Product Roadmaps Driven by Your Company's Needs

Our Experience Fills a Niche Not Easily Filled by Consulting Services

Your operations are unique and may require a more customized approach. ECG has successfully developed custom software solutions for over 20 years. ECG offers a unique blend of power plant engineering knowledge and over 15 years of experience working with customers to develop one-of-a-kind solutions.

Have a feature in mind that we don't offer? ECG's customer advantage allows you to have a voice in product development. We want to hear your ideas and incorporate them into new releases to ensure your company's goals are met, both now and in the future. Mitsubishi Power (MHPS) has leveraged ECG's talents to customize software solutions in its Monitoring & Diagnostic Center since 2016.

As OSIsoft Partners and Microsoft Partners, our developers meet your needs with customized solutions. Whether designing new systems or interfacing with existing systems, ECG will leverage the value of your process data.

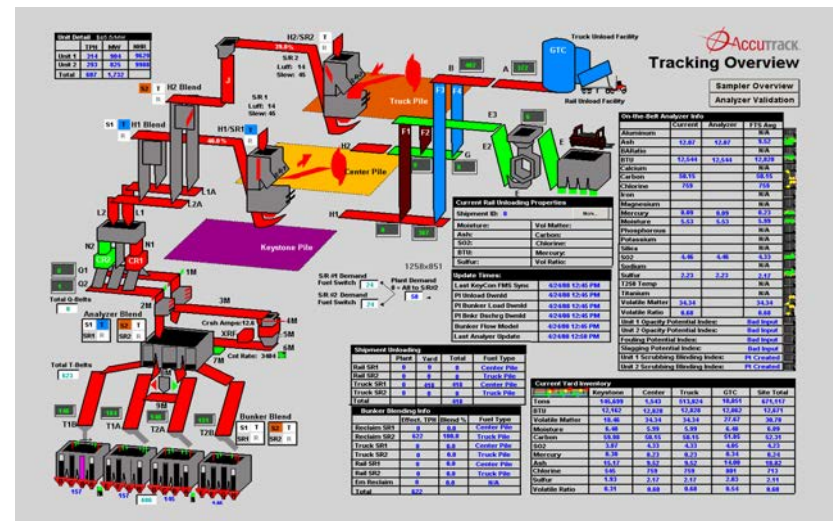




Interfacing and Integration

Interfacing with existing applications and databases provides a unified solution that extends the existing value in your current infrastructure. Systems integration is about consolidating and customizing technology solutions to support the successful delivery of your most complex business challenges. At ECG, we enhance functionality, boost performance, and increase the efficiency of your present system.

Maintenance agreements for long-term, reliable support. Our customers bank on ECG's dedication to product reliability. Current customer TSA's have been in place for over 20 years.



The background of the image shows two workers in the foreground, seen from behind. They are wearing yellow hard hats and high-visibility safety vests (one orange and green, the other green and blue). They are holding and looking at a large blue architectural blueprint. In the background, a large industrial facility, possibly a refinery or chemical plant, is visible at dusk. Several tall distillation columns with lights at their tops are silhouetted against a dark, cloudy sky. The facility's lights are on, creating a warm glow that contrasts with the cool tones of the twilight.

We take the time
to listen.

Let's talk!

ECG is here to help. Our team of talented engineers and software developers work with you to build products that solve real-world issues found in process-heavy industries. Together, we can drive an absolute difference in your operation.

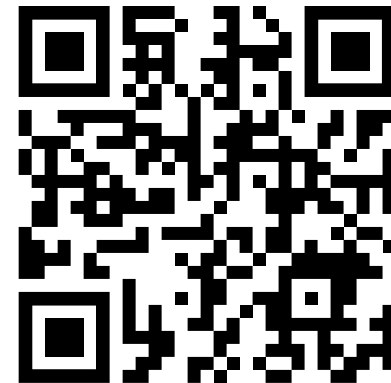
Make your data work for you, harness the power of ECG's solutions.



Take the next step.

Schedule a meeting with us today! Scan the QR code or visit ecg-inc.com/letstalk.

- **Introductory call**
Get to know us better with a 20-minute informational call.
- **Schedule a software demo**
Let us show you how our software can help your operation.
- **Consultation on a custom project**
What needs can we fulfill in your business ecosystem?
- **Integration partnership**
Tell us about your next steps in PI System integration.





Engineering Consultants Group, Inc.

3394 West Market Street, Fairlawn, OH 44333 USA

TEL +1 330.869.9949

EMAIL sales@ecg-inc.com

WEB www.ecg-inc.com