APM Rounds Pro from GE Digital

Optimize operator rounds efficiency and impact



Rounds Pro is a next-generation solution to optimize operator rounds efficiency and impact. Featuring a flexible mobile app and rich capabilities for supervisors, engineers and O&M managers, Rounds Pro drives productivity, reliability, and operational excellence.

Adopting a digital solution for operator rounds unites your team to ensure vital equipment reliability and optimal O&M efficiency. Using dependable asset health readings and team-wide productivity, collaboration and analysis tools, organizations consistently report measurable improvements in:

- Increased asset reliability
- Reduced maintenance costs
- Improved worker efficiency

There's no more paper, manual and inflexible procedures, or siloed execution. Your entire team can work together with speed and agility to discover and resolve emerging issues, avoid downtime and optimize maintenance. And with the full power of GE Digital APM, rounds data can now be a foundation of a holistic asset performance management program.

Rounds Pro Benefits

Rounds Pro delivers core benefits in reliability, cost reduction and productivity and a host of operational and organizational advantages that drive all-round operational excellence.

Improve Reliability

Integrated analysis, analytics, and alerting drive asset uptime

Reduce O&M Costs

Predictive maintenance minimizes incidents and unplanned activities

Enhance Productivity

Intuitive design and tools drive operator and team efficiency

Capture neglected assets

Make all operations-critical assets a part of your formal reliability program

Compliance tracking and assurance

Operational adherence is clearly monitored, enforced and recorded

Real-time response and agility

Easily create/adjust routes based on changing equipment conditions



Enforce and preserve best practices

Standardized and guided procedures are always followed

Teamwork across the organization

Operators can share routes, collaborate, and drive maintenance

Knowledge transfer and training

Digital information and procedures are current and accessible

Mobile Rounds Application

Collection, evaluation and action

Route Management

Scheduling, tracking and compliance

Asset Health Management

Analysis, alerting and full APM functions









Rounds Pro provides strong benefits to operators, supervisors and reliability/O&M managers. Just as importantly, it enables the team-wide cooperation and collaboration to drive end-to-end reliability and maintenance efficiency excellence.



MOBILE OPERATORS

Enhance personal productivity and program contribution

Rounds Pro Mobile App

- Flexible route selection, sharing and ad-hoc actions
- Quick & Detailed View options for collection and guidance
- Current/historical data and trending visualization
- Operator-provided image and recommendation notices
- Functions in network connected and non-connected modes





ROUNDS SUPERVISOR

Manage an efficient, flexible and compliant program

Rounds Pro Manager

- Templated/sharable steps with conditionals and attachments
- Route management includes masters, scheduling, assignments
- Ad-hoc route creation, assignment and triggering
- Complete current and historical tracking, analysis, compliance





RELIABILITY AND O&M MANAGERS

Drive effective reliability and maintenance programs

APM Analysis & Action

- Data visualization and analysis in APM dashboards
- Policy-driven alerts and actions based on rounds data
- EAM work order creation from recommendations and results
- Strategy planning integrated with rounds management



Rounds Pro Manager

The Rounds Pro Manager provides a unified environment to design, schedule and track routes at scale. Using templated/sharable steps, flexible route definition and scheduling, and detailed tracking, a supervisor can effectively manage even the most complex and dynamic operational environments.

Step Design

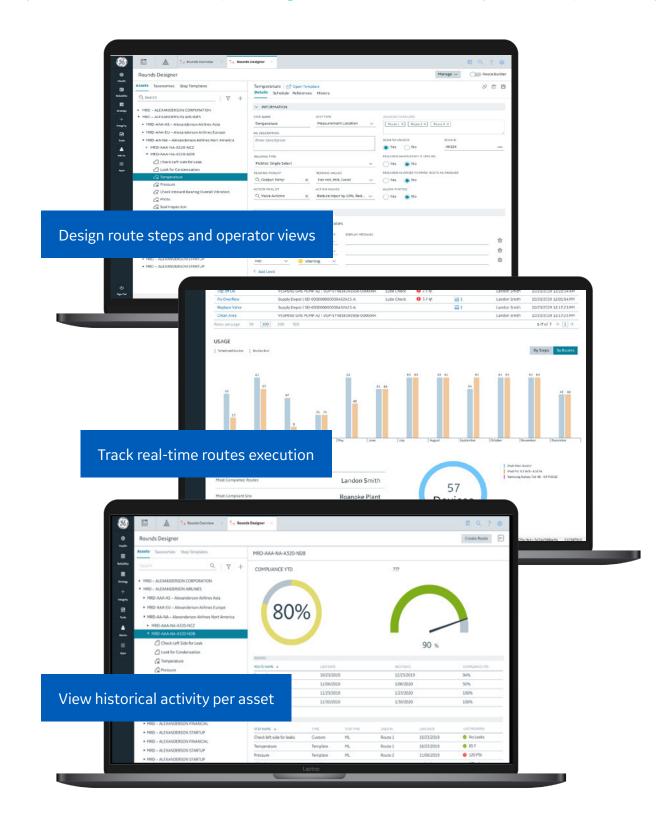
Steps per asset or measurement location can be designed rapidly, shared across routes, and saved as templates. Step definitions can contain pick list reading and actions values, visual indicators, conditional actions, instructions, and more. Auto population of collected data into APM Health dashboards is also defined.

Route Creation and Activation

Routes are assembled as a set of sequenced Steps, then scheduled and assigned to individuals or teams. The Compliance feature defines execution deadlines and tracking. Completed Route Masters can be activated as Route Instances visible on the Mobile App or downloadable as a CSV. Ad-hoc Steps or Routes can be easily created and immediately activated.

Route Tracking and Analysis

Open Route Instance tracking includes the status of all active and scheduled Route Instances, Check In/Out status, owner, completion level, and compliance status. Tracking views provide customizable graphical summary results of Routes and collected data. Visualizations and detailed analysis of data are automatically available in Rounds Pro Manager and APM Asset Health Manager dashboards.



Rounds Pro Manager Features

Step Design

- Picklist Creation
 - Measurements and actions
- Conditional assignments
- Visual display settings
- Attachments
- Health dashboard indicators
- Template library: Step sharing across routes

Route Creation and Activation

- Step selection and sequencing
- Assignment and scheduling
- Compliance parameters
- Route Master creation
- Route Instance activation
- Ad-hoc Route activation
- CSV download support

Tracking and Analysis

- Detailed route status
- Historical Analysis
 - Completed/closed instances and details
- Standard and custom-defined summary charts and metrics
- Collected data summary
- Data analysis via APM Health

Rounds Pro Mobile Application

The intuitive Mobile App drives operator efficiency and team collaboration with rich functions including route sharing, view options, conditional actions, data visualization, and operator attachments. Operators can work in network-connected and non-connected mode and use iOS, Android or Windows tablet and other mobile device types.

Route Selection and Sharing

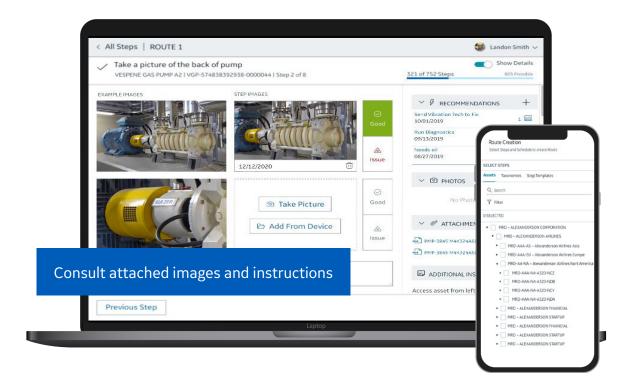
Once securely authenticated, operators can view and search all Route Masters and assigned Instances. A route can then be checked out for execution. Routes can be checked in as complete or in-progress and later be re-activated by any assigned team member.

Quick or Detailed Data Collection Views

Operators can choose and toggle between Quick and Detailed data collection views. Quick View mode offers a compact display of step actions suitable for experienced workers on standard routes. Detailed View mode displays attachments and readings trend charts as well as options for adding photos or recommendations.

Operator Analysis and Actions

Operators can view collected data status indicators as well as historical reading trends to immediately evaluate equipment status. Abnormal conditions or other observations can be noted by creating recommendations and photo images which can trigger an EAM system work request.



CALISteps | ROUTE 1 Pump Stroke Check VESPENE GAS PUMP A2 | VGP-574838392938-0000044 | Step 2 of 8 READINO READINO Solect Action... COMMENTS Enter Comments Enter Comments Enter Comments Fig. 1 PMP-3848 MAK32AASD PMP-3848 MAK3AASD PMP-38

Beyond Data Collection

The flexibility and features of the Rounds Pro Mobile App enable many uses beyond data collection, including:

- Safety checks
- Spot inspections
- Routine maintenance
- Task assignments

Mobile App Features

- Secure SSO login
- Route search and selection
- Ouick/Detailed Views
- Conditional actions
- Data views, indicators, trending
- Recommendation and image attachments
- Route sharing and collaboration
- On/off network data collection
- Supports iOS, Android, Windows devices

APM-enabled Analysis and Action

Rounds Pro is a component of GE Digital APM Health and tightly integrated with rich APM functions. From data analysis to O&M strategy and execution, Rounds Pro and APM drive complete asset health management.

Rounds Pro Data Analysis

Rounds Pro collected data is automatically integrated into APM Health dashboards for display and drill-down analysis. Visual display indicators (ranges and color codes) are defined in the Rounds Pro Manager.

Policy-Driven Alerts and Action

The APM Policy Designer can be used to define alert conditions and trigger other actions based on Rounds Pro data. This allows collected data to be an integrated foundation of condition-based or predictive maintenance strategies.

APM Strategy Functions

The APM Actions function allows for a user defining a prescribed data reading requirement to immediately create a Rounds Pro Step while within APM Strategy. This facilitates the immediate implementation of any maintenance strategy requirements.

Driving Reliability and Predictive Maintenance

GE Digital APM provides a comprehensive solution to optimize equipment reliability and O&M efficiency. Rich APM features allow Rounds Pro data to be a cornerstone of successful reliability and predictive maintenance programs.

EAM/CMMS and **Data Integration**

Rounds Pro and APM functions integrate with EAM and other systems to leverage and synchronize data using pre-built and customizable tools and data loaders.

- Rounds Pro asset hierarchy and classification are based on EAM structure
- Operator recommendations can automatically generate EAM work requests
- APM asset strategies can be immediately implemented in Rounds Pro routes
- EAM work history can be integrated into APM dashboards
- Rounds Pro data readings can be exported to other systems

GE Digital Asset Performance Management



Industrial Data Diagnostics

Pinpoint opportunities to improve data quality and asset performance

Data quality recommendations

Benchmark analytics

Failure mode analysis

PM diagnostics

Manufacturer comparisons
Improvement tracker



APM Health

Unified view of assets' current state & health
Rounds / Rounds Pro

eLogs
Health manager
Calibration management

IT/OT Connectivity &

Integration

EAM systems

HMI/SCADA, Historian, MES systems

Edge OT connectivity and analytics

GIS systems

APM Reliability Predicting

equipment issuesReliability analytics

Root cause analysis

Performance
Intelligence

Thermal Performance and Economic Advisory

SmartSignal

Predictive diagnostics

Digital twin blueprints



APM Strategy

Reduce risk & optimize life cycle cost

RCM/FMEA
Strategy management
Strategy optimization
Strategy implementation
Lifecycle cost analysis



APM Integrity

Helping to keep cost facilities contained & compliant

Compliance management
Inspection management
Thickness monitoring
Risk based inspection



APM Safety

Reduce hazards risk within industrial processes

Hazard analysis
SIS management
Management of change



APM Foundation / Essentials

Data Management & Processing

Common asset model (or) hierarchy
Analytics management and execution*
Infrastructure Data Fabric*
Policy designer
End-to-end security

Monitoring, Analysis & Event Management

Advanced Visualization*

Dashboards, interactive data analysis

Criticality, alerts, cases, recommendations

HMI visualizations and alarms*

Operator Rounds – Before and After

Mobile Operators

Enhance personal productivity and program contribution

Q

How can I be more productive and contribute more to our operations?

BEFORE



Paper/manual tools hurt productivity and accuracy. It's difficult to evaluate readings data and initiate actions.

AFTER



A flexible mobile app enables operators to share routes, collect data, evaluate status and make recommendations.

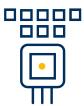
Rounds Supervisor

Design and manage an efficient, flexible and compliant program

Q

How can I easily create and assign efficient routes and schedules?

BEFORE



Route definition and scheduling activities are rigid, complex and difficult to scale.

AFTER



Templates and productivity functions make route management simple and scalable.

Q

How can I track and ensure a compliant and effective program?

BEFORE



Tracking, validation and compliance are manual. Running an effective program is a challenge.

AFTER



Tracking and compliance views and tools enable end-to-end program management at scale.

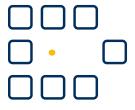
Reliability and O&M Managers

Drive effective reliability and maintenance programs

Q

How can I use rounds data to drive reliability and maintenance programs?

BEFORE



Data is often lost, inconsistent and siloed. Data analysis and predictive maintenance are problematic.

AFTER



Data integration and rich APM functions enable complete reliability and predictive maintenance programs.

Calculating the Payoff for a Single Asset Class

\$2,250
AVERAGE PUMP REPAIR COST

2,000

NUMBER OF PUMPS IN SERVICE

1.3 YEARS

3.92 YEARS

\$2.4M ANNUAL SAVINGS

Based on actual customer MTBR results paired with cost averages from the GE Digital Asset Answers benchmarking database

*Mean Time Between Repair

Rounds Pro- Feature Summary



Mobile Data Collection

- Route search and selection
- Quick/Detailed Views
- Data views, indicators, trending
- Recommendation and image attachments
- Partial completion and sharing
- On/off network data collection



Step Design

- Pick list Creation
 - Measurements and Actions
- Conditional assignments
- Visual display settings
- Attachments
- Health dashboard indicators
- Template library: Step sharing across Routes



Route Creation and **Activation**

- Step selection and sequencing
- Assignment and scheduling
- Compliance parameters
- Route Master creation
- Route Instance activation
- Ad-hoc Route activation
- CSV download support



Tracking and Analysis

- Detailed route status
- Historical Analysis
 - Completed/closed instances and details
 - Standard and custom-defined summary charts and metrics
 - Collected data summary
- Data analysis via APM Health



APM-Enabled Analysis and Action

- Collected data is automatically displayed in APM Health dashboards for analysis
- Alert conditions and action triggers can be defined on Rounds Pro data readings

- Maintenance strategy updates can be immediately implemented in Rounds Pro
- EAM/CMMS automatic updates for work order requests and maintenance plans

The Rounds Pro Advantage

GE Digital has been providing operator rounds solutions to industrial leaders for over 10 years. Rounds Pro is our next-generation offering that incorporates our vast customer experience and the latest technology and user experience innovations to deliver even more value.

GE Digital brings you the full power of a modern rounds application seamlessly integrated within an overall APM solution. From data analysis and analytics to O&M strategy and execution, your operator rounds program will drive team-wide reliability and operational excellence.



GE Digital APM

Health

Reliability

Strategy

Integrity

Safety

Requirements:

Requires APM Software version 4.6 or later (on-premises or cloud)

Mobile App:

Supports iOS, Android, and Windows



GE Digital brings you the full power of a modern rounds application seamlessly integrated within an overall APM solution.

BOOK A CALL