Trusted partner for your digital journey

**Trusted Experts**
Global expertise supplements the customer’s knowledge

**Journey Partner**
Continuous initiative inspires the customer’s transformation

**Technology Adoption**
Dedicated personnel advance the customer’s unique solution
Contents
About GE Digital Industrial Managed Services ................................................................. 4
  What are Industrial Managed Services? ........................................................................... 4
  Why choose GE Digital Industrial Managed Services? .................................................... 4
Overview of On-Line Subscription Service Levels ................................................................ 5
Annual Onsite Workshop ..................................................................................................... 6
Annual Goals and Value Report .......................................................................................... 7
Aggregated Content Access ............................................................................................... 8
Quarterly Program Update ................................................................................................. 9
Data Connectivity Support ............................................................................................... 10
Monthly Activity Review ................................................................................................... 11
Named Industry Expert ..................................................................................................... 12
High Priority Response .................................................................................................... 13
Configuration Optimization .............................................................................................. 14
Transition Coaching (if desired) ........................................................................................ 15
Weekly Detailed Operations Review .................................................................................. 16
Proactive Results Assessments ........................................................................................ 17
Off-Line Starter Kit Services ............................................................................................ 18
  Health Management Starter Kit ..................................................................................... 19
  Predictive Reliability Starter Kit ..................................................................................... 20
  Reliability Analytics Starter Kit ...................................................................................... 21
  Diagnostic Blueprint Starter Kit ..................................................................................... Error! Bookmark not defined.
Strategy Management Starter Kit ..................................................................................... 22
Mechanical Integrity Starter Kit ....................................................................................... 25
Safety Instrumentation Starter Kit ................................................................................... 26
Workshop Services ........................................................................................................... 27
  T&M Facilitation ............................................................................................................. 27
  Digital Transformation Workshop .................................................................................. 28
Pre-Sales Services .............................................................................................................. 29
  Exploration Visits ........................................................................................................... 29
  Value Discussions .......................................................................................................... 29
About GE Digital Industrial Managed Services

GE Digital Industrial Managed Services (IMS) is a global team of industry experts dedicated to providing value through a holistic APM platform and work processes, enabling condition monitoring with advanced analytics and partnering with asset intensive industry customers to make the industrial world safer, more efficient, and more effective.

What are Industrial Managed Services?

Industrial Managed Services are expertise based, ongoing consulting services provided in a service subscription format to ensure customers get their expected return on investment. Industrial Managed Services engage after connection or project deployment and:

- Uses the product on behalf of the customer
- Uses the product with the customer
- Provides periodic guidance and content to the customer
- Helps transition the customer to full self-sufficiency if desired

Industrial Managed Services ensures customers develop the people and processes necessary to take full value of GE Digital solutions.

Why choose GE Digital Industrial Managed Services?

GE Digital IMS has been in operation for over 10 years working in industries ranging from power generation and oil and gas to manufacturing and aviation. There are over 130 reliability engineers with 1,100+ combined years of experience ready to serve. IMS has experience managing GE, non-GE, rotating, reciprocating, stationary and mobile equipment. With experience in over 250 equipment types, GE Digital Industrial Managed Services provides a single source for your equipment needs.

The IMS team is focused on being your journey partner as you transform your organization. GE Digital Industrial Managed Services delivers support with annual service subscriptions. We provide dedicated teams to create a deep partnership with your personnel and build momentum in your digital transformation.
Overview of On-Line Subscription Service Levels

GE Digital Industrial Managed Services provides several options for service levels to meet your unique solution requirements. IMS provide services for the period specified in the proposal. We deliver continuous updates, changes or improvements during the period specified during the proposal. The services provided will always comply with the Tiers and deliverables documented in the most recently published Industrial Managed Services Guide. GE Digital Industrial Managed Services provides flexible levels of service to ensure we are meeting the Customer’s Path, Customer’s Pace, and Customer’s Choice of service needs.

<table>
<thead>
<tr>
<th>Key Activities</th>
<th>Tier 1: Results</th>
<th>Tier 2: Enablement</th>
<th>Tier 3: Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Kickoff Workshop</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Goals and Value Report</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Aggregated Content Access</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Quarterly Program Update</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Data Connectivity Support</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Monthly Activity Review</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Named Industry Expert</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Priority Response</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Configuration Optimization</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transition Coaching (if desired)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Detailed Operations Review</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proactive Assessment &amp; Adaptation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Results Service (Tier 1)**

GE Digital Industrial Managed Services offers to deliver the full value of GE Digital solutions by using the solution on behalf of the customer. By providing this service, IMS will be able to help the customer focus on the incorporation of GE Digital solutions into their core business processes and to maximize the customer’s value.

**Enablement Service (Tier 2)**

GE Digital Industrial Managed Services offers to support in the usage of GE Digital solutions. This focused service level is for customers who have adequate internal staffing and expertise and who want their staff focused on operational issues.

**Guidance Service (Tier 3)**

GE Digital Industrial Managed Services offers to help the customer transform the way they use their domain knowledge. This targeted service level is for customers who have both adequate staffing and expertise with GE Digital solutions and want to be more autonomous.

*Starter Kits, Facilitation, and Pre-Sales Services are described after subscription elements.*
Annual Onsite Workshop

_Tiers 1, 2 & 3_

**Goals**
Customers will get an annual, onsite workshop, with assigned industry subject matter experts to review and benchmark their configuration and usage of the solution. The GE Digital Industrial Managed Services staff will make recommendations and engage in collaborative planning to maximize the customer’s value in the upcoming year.

**Requirements**
An ongoing subscription of any Tier for one full year. Appropriate system access and permissions. Access to and meeting attendance by key personnel. Up to date software and service agreements.

**Deliverables**
- Discussion Agenda: Strategic review and documentation of APM program goals
- Workshop Materials: Detailed analysis, discussion and specific recommendations for improving system use and value will be based on usage during prior year. Documentation to be used for review is detailed in the Goals and Value Report section
- Resource and Budget Planning: Agreed staffing, implementation steps, milestones, support services and value tracking for enhanced APM program will be jointly created

**Consultation**
Advanced delivery of Goals and Value Report to prepare for the workshop. Length and format of consultation depends on the scale of the APM program. This workshop is generally a one to three day visit onsite, with sessions including key reliability personnel, plant managers and a vice president of operations. Starter scopes may be reviewed with a half-day remote session.

**Follow-Up**
Written report detailing meeting discussions and agreed plan, containing both GE and customer actions. If needed, proposed contract modifications.
Annual Goals and Value Report
Tiers 1, 2 & 3

Goals
GE Industrial Managed Services assigned SME and staff will compile an annual report that highlights the value and effectiveness delivered by the customer’s APM program.

Requirements
An ongoing subscription of any Tier for one full year. Appropriate system access and permissions. Up to date software and service agreements.

Deliverables
The Yearly Goal and Value Report will include:
- Executive summary
- APM program goals
- Coverage scope
- Actionable recommendations summary
- Value summary
- Key examples
- Case listing
- Value methodology

Consultation
The report will be reviewed and discussed during the Annual Onsite Workshop. If an annual workshop is declined, IMS personnel will be available for a leadership call after report delivery.

Follow-Up
Answer questions and provide detail as requested.
Aggregated Content Access
*Tiers 1, 2 & 3*

**Goals**
Provide access to and use of best-in-class, industry validated knowledge templates for updating and/or application within the customer’s APM program. This provides customers the ability to benefit from continually refreshed, aggregated expertise across a wide industrial use base.

**Requirements**
An ongoing subscription of any Tier. Appropriate system access and permissions. Use of GE recommended taxonomy within customer’s APM solution. Up to date software and service agreements.

**Deliverables**
Varying according to selected module and asset coverage, and may include:

- Dashboards
- Rounds Templates
- Calibration Templates
- Example Policies
- Trending Analytics
- Predictive Blueprints
- Root Cause Templates
- Strategy Templates
- Inspection Methods
- Risk Analyses

**Consultation**
If Tier 2 is selected, named subject matter expert available for template Q&A. If Tier 1 is selected, GE will apply selected templates within the customer’s APM solution. Support is intended for hands-on APM users.

**Follow-Up**
If Tier 1 is selected, GE will tune and optimize the selected templates overtime.
Quarterly Program Update
Tiers 1, 2 & 3

**Goals**
GE Industrial Managed Services will deliver a standardized APM program update aligned to customer desired outcomes and progress towards achieving performance targets. GE staff will make recommendations for optimal program management.

**Requirements**
An ongoing subscription of any Tier for one full year. Appropriate system access and permissions. Availability of key personnel. Up to date software and service agreements.

**Deliverables**
- Review of APM program goals
- Detailed usage and value metrics with discussion
- Specific recommendations for improving system use and value
- Resource plan, implementation milestones and value tracking

**Consultation**
Advanced delivery of quarterly report to prepare for the conference call. GE analysts will lead the call with expert attendance as needed to the support customer in managing their APM program.

**Follow-Up**
Written report detailing meeting discussions and agreed plan, containing both GE and customer actions. If needed, proposed contract modifications.
Data Connectivity Support

*Tiers 1, 2 & 3*

**Goals**
GE Digital Managed Services will monitor data connectivity, data quality and for GE APM applications. Reliable connectivity increases confidence in key performance indicators and analytics output accuracy and validity.

**Requirements**
- Subscription including use of IMS hosted APM tenant or Tier 1 services
- Supported Connectivity Methods
  - GE Historian and associated collectors
  - OSI Pi
  - OPC UA
  - OPC DA
  - Predix Edge 2.0 (Containers that are part of standard GE library or have L1, L2, Product Support from partners for duration of IMS Contract)
  - APM Connect
- Remote access to infrastructure running collector for troubleshooting and configuration
- Up to date software and service agreements

**Deliverables**
Regular Monitoring and Review of Data Connectivity including:
- Monitoring of data flowing into GE Digital APM applications
- Exception reporting on data connectivity issues
- Identification and Level 0 troubleshooting of breaks in connectivity stream
  - System resource availability
  - Services/Dameon Operation
  - Inbound/Outbound connectivity
  - Documentation of steps taken to try to resolve issue for L1 support teams
- Engagement of appropriate GE or Customer IT teams to resolve issues above Level 0
- Regular Report of Data Quality and Health
- Regular Predictive Analytic Sensor Health Reporting
  - Missing values based on specified poll rate
  - Flatlined data
  - Out of Range Value

**Consultation**
As needed communication to customer IT/OT resources. Regular reporting delivered through operations review calls and/or high priority communications.

**Follow-Up**
Technical support and issue resolution as needed.
Monthly Activity Review

**Tiers 1 & 2**

**Goals**
The GE Digital Industrial Managed Services team will do a leadership review including activity summaries, long term issues, configurations in progress and opportunities to better serve the customer.

**Requirements**
An ongoing subscription of Tier 1 or Tier 2 for a selected scope. Appropriate system access and permissions. Attendance by customer functional leaders. Up to date software and service agreements.

**Deliverables**
Management review of:
- APM solution activity
- Issues requiring leadership follow-up
- Continuous improvement efforts
- Activity value estimates

**Consultation**
Regularly scheduled monthly video conference call, discussing scope of subscription coverage. GE service managers will lead the call with expert attendance as needed to support customer leadership in managing their APM program.

**Follow-Up**
As needed and as discussed, possibly including:
- Additional solution tracking
- Details of follow-up actions
- Additional improvement efforts
- Refinement of value estimates
Named Industry Expert

*Tiers 1 & 2*

**Goals**
Customers will get a named industry expert continually assigned to their account. They will supervise and provide guidance on the customer’s APM program, overall and for detailed issues that arise. The named resource will bring significant and applicable industry knowledge to maximize program effectiveness and related business outcomes.

**Requirements**
An ongoing subscription of Tier 1 or Tier 2. Appropriate system access and permissions. Up to date software and service agreements.

**Deliverables**
An on call, remote subject matter expert available for issue review and consultation as needed to support APM activity.

**Consultation**
Attendance at monthly and quarterly calls and leads the annual workshop. Attendance at operations call when indicated by a complex issue.

**Follow-Up**
Answer questions and provide detail as requested:
- Additional diagnostic review
- Modification of knowledge templates
- Refinement of APM policies
- Program coaching and guidance
High Priority Response
*Tiers 1 & 2*

**Goals**
GE Digital Managed Services offers a service to monitor and review all high priority alerts from the APM solution with dedicated communication and support to assure timely customer awareness of emerging critical issues.

**Requirements**
Operating conditions and failure modes for review must have been previously set up within the APM solution. Assets that can generate High Priority Alerts are only those with Predictive Analytics or specific priority Policies implemented. Customer must also set up a dedicated recipient for high priority notifications. An ongoing subscription of Tier 1 or Tier 2 is required with appropriate access and permissions to customer systems. Up to date software and service agreements.

**Deliverables**
- A reliability engineer hotline to engage IMS staff outside of communication rhythm.
- An experienced reliability engineer reviews all high priority alerts that have fired in the last 24 hours and triggers the IMS incident management workflow
- Emerging concerns are reported to customer via email as part of the incident management workflow (maximum time 36 hours)

**Consultation**
24x7 hotline
- AMERICAS: +1-630-796-7369
- EUROPE: +420-296-181-510
- APAC: +65-315-79698

**Follow-Up**
Additional diagnosis and recommendation support as needed.
Configuration Optimization

**Tiers 1 & 2**

**Goals**
Spread throughout the subscription duration, GE will provide ongoing configuration refinement within the APM solution. This service assures the customer’s APM solution achieves and stays up to date at best-in-class level.

**Requirements**
An ongoing subscription of Tier 1 or Tier 2. Customer accepts IMS best practice templates as the starting point for their installation with continuous improvement and refinement to be delivered over time. Customer will provide references as needed (FMEAs, criticality analyses, workflows, data histories, P&IDs, DCS screenshots, specification sheets, alarm setpoints, taglist, etc.) for APM solution optimization in selected modules on selected assets. Up to date software and service agreements.

**Deliverables**
- **In the case of new Tier 1 assets:** Implementation will be advanced from a basic configuration to an optimized state at the rate of 1/12th of new scope per month, so that customer’s APM program is best-in-class at the end of the first subscription year

- **In the case of running Tier 1 or Tier 2 assets:** Configuration and content will be continuously reviewed and optimized as needed to assure the customer’s APM program stays up to date with the latest industry knowledge and best practices. Solution upkeep will include items such as policy modifications, strategy refinements, rounds improvements, alerting limits, model data additions, tag management, and other APM maintenance using a continuous improvement model. Customization beyond best practice will be charged as a separate project

**Consultation**
GE staff will include configuration topics in weekly or monthly calls as appropriate and request customer technical staff to attend as needed.

**Follow-Up**
The need for further optimization will be guided by APM solution results and the availability of new knowledge templates.
Transition Coaching (if desired)

**Tier 1**

**Goals**
As an option, IMS offers to help the customer transition to self-sufficiency while still getting full value from the selected APM solution and services. This Transition Service addition to Tier 1 takes the customer through each service activity in detail as Managed Services trains and assists in their adoption of GE Digital solutions.

**Requirements**
An ongoing subscription at Tier 1 for a selected scope. Appropriate system access and permissions. Attendance by customer technicians and engineers. Transition timeline will start after customer personnel training and on each required activity and after six months of successfully applying Tier 1 Results into their business. Up to date software and service agreements.

**Deliverables**
- Transition activities will be added to Operations Review calls per mutual availability
- This on-the-job coaching will deliver job guides and additional materials for assigned personnel to prepare for successful turnover by the end of the service period

**Consultation**
GE staff will include transition topics in weekly or monthly calls as appropriate and request customer technical staff to transition tasks in between calls.

**Follow-Up**
The need for additional training will be guided by APM transition progress according to agreed timelines.
Weekly Detailed Operations Review

Tier 1

**Goals**
The GE Digital Industrial Managed Services team will provide Customer personnel with a review of current results provided by the APM solution. The team will also review outstanding asset issues, any configurations in progress and related plans.

**Requirements**
An ongoing subscription at Tier 1 for a selected scope. Appropriate system access and permissions. Attendance by customer technicians and engineers. Up to date software and service agreements.

**Deliverables**
A regularly scheduled collaborative will drive customer outcomes and respond to needs for re-configuration or updates to the existing templates. The call will include technical review of:
- New issues since last call
- Follow-up on short-term issues
- Review of priorities and recommendations

**Consultation**
Regularly scheduled Weekly or Bi-monthly video conference calls, depending on scope of subscription coverage. GE analysts will lead the call with expert attendance as needed to support customer technical and operations staff.

**Follow-Up**
As needed and as discussed, possibly including:
- Additional diagnostic information
- Setting of modified limits for monitoring
- Modification of APM policies
- Kick-off of analyses
Proactive Results Assessments

**Tier 1**

**Goals**
GED Industrial Managed Services team will do a proactive review APM alerts, health indicators, policy outputs, work status, reliability trigger and other notifications. Review frequencies are driven by system determined priority and will be daily if indicated. This activity assures timely awareness and action of system visible conditions.

**Requirements**
An ongoing subscription of Tier 1. Operating conditions and failure modes for review must have been previously set up within the APM solution. Up to date software and service agreements.

**Deliverables**
- Team will review and disposition APM alerts
- Create cases for action including technical description and initial diagnosis
- Associated work recommendation and implementation notes

**Consultation**
Cases and alerts will be compiled into a weekly report for use during operations review calls. High priority cases will be immediately referred to the appropriate team for action.

**Follow-Up**
Support operations review and priority team as needed.
Off-Line Starter Kit Services

The Industrial Managed Services starter kits are designed for a new APM customer venturing into APM methodology for the first time. Industrial Managed Services experts will deliver an initial consultation workshop and develop a time boxed program plan for remote execution. By leveraging your own data, the Industrial Managed Services experts will concretely demonstrate the value of APM. At the end of the engagement, Industrial Managed Services experts deliver additional recommendations for the customer to continue their APM journey.

Identifying, mapping data sources and commissioning an APM instance can take time and effort, which prolongs the time to value. The Industrial Managed Services experts will help prioritize specific assets¹ and/or systems² and leverage data loaders to ingest your data, showing value before having all the data sources actively mapped to APM. The Starter Kits are performed in the GE Digital Industrial Managed Services APM environment if a customer system is not available. By leveraging data loaders and/or existing environments, Industrial Managed Services reduces the time to value.

¹ Asset: specific equipment within an equipment class as defined by its boundary (e.g. compressors). For references see document ISO 14224:2016.
² Main section/system of the plant. Example: Compression, Transportation, etc. For references see document ISO 14224:2016.
Health Management Starter Kit

Goals
The Industrial Managed Services experts will effectively demonstrate over a 3-month period how to enable APM Health with in-depth analysis to understand an asset’s operating and maintenance history and correctly interpret asset health trends. The Health Manager capability puts asset performance in context, monitoring known asset failure modes, alerting users, checking maintenance strategy effectiveness, and business metrics.

Requirements
Appropriate system access and permissions. Attendance by customer technicians and engineers. It may be necessary to purchase additional starter kits depending on the specific performance metrics desired.

Deliverables
- Reports: Initial evaluation that will address current customer data quality, Summary report to consolidate KPIs
- Health KPIs: Health Indicator Status by Asset, Recommendations Status, Alert Acknowledgment
- APM KPIs: Top 10 Bad Actors by Total Cost - Last 2 Years (Chart), Top 10 Bad Actors by Failure Count - Last 2 Years (Chart)

Consultation
Three-day onsite workshop includes:
- Data source identification
- Identification of 5 assets and their work process priorities
- Identify selected asset’s health data and other relevant asset health information
- Workshop and goal review, next steps and timeline of events

Regularly scheduled Bi-monthly video conference calls includes:
- Asset data collecting from operational technology (OT) and information technology (IT), systems, alarms, and events to give a contextualized view of asset performance
- Analysis of 5 assets with specific condition data (up to 3-6 months of historians and up to 2 years of works history)
- Define, develop, and execute Rounds
- Automatic policy to monitor conditions and initiate follow-up actions

Follow-Up
At the end of the engagement, Industrial Managed Services experts deliver additional APM visualization and recommendations for the customer to continue the APM Journey. Think of it as an introduction to APM Health that enables visualization of asset performance and KPI’s.
- Tour of GE Digital Industrial Managed Services center
- Proposal development according to customer wishes
Predictive Reliability Starter Kit

**Goals**
Industrial Managed Services experts will effectively showcase the value of condition-based maintenance via predictive monitoring. The Reliability Starter Kit executes an historical early warning case study on one asset or train executed over 30 days after data is delivered in the requested format.

**Requirements**
Data to be provided via discrete ASCII files via Email/FTP only. Access to and meeting attendance by customer technicians and engineers. Only available for assets systems with established template. New template development available in a separate starter kit.

**Deliverables**
Several technical calls will assure appropriate application of existing asset system templates. Presentation of completed early warning case study will include:
- Explanation of technology applied
- Simulated weekly reports
- Historical progression of failure
- Possible benefits of condition-based maintenance

**Consultation**
- Kick off call to establish Starter Kit goals and next steps
- Deep dive on technology and inputs for historical failure analysis
- Presentation of historical analysis and value of advance notice
- Management wrap up with results and engagement summary, Q&A, next steps

**Follow-Up**
At the end of the engagement, Industrial Managed Services experts deliver additional recommendations for the customer to continue the APM Journey. Think of it as an introduction to APM Predictive Analytics that enables the introduction of condition-based maintenance into the customer’s work processes.
- Tour of GE Digital Industrial Managed Services center
- Proposal development according to customer wishes
Reliability Analytics Starter Kit

Goals
Industrial Managed Services experts will effectively showcase the value of key reliability metrics on one asset system type with 25-50 individual examples, for both short-term tactical and long-term strategic activities over a 3-month period.

Requirements
Data to be provided via discrete ASCII files via Email/FTP only. Access to and meeting attendance by customer technicians and engineers. Only available for assets systems with established template. New template development available in a separate starter kit.

Deliverables
- Reports: Initial data quality evaluation that will address current customer data quality, Summary report to consolidate KPI and recommendations delivered by SME, Reliability Growth Analysis, Preliminary Root Cause Analysis
- KPIs: Track Results by recommendation for implementation year, MTBF Bad Actors, Recommendation Summary, Apparent Cause Summary

Consultation
Three-day onsite workshop includes:
- Standard Practice Workflow for Component Reliability
- Reliability concepts
- Workshop and goal review, next steps and timeline of events

Regularly scheduled Bi-monthly video conference calls includes:
- Collecting asset data to establish historical trends (up to 2 years of historical data) for the top asset (Limited to one (1) Asset system type)
- Identifying opportunities from bad actor analysis
- Define, develop and execute Analysis
  - Perform an overview of fleet deployment methodology
  - Perform a Preliminary Root Cause Analysis on one (1) critical asset for root causes of failures and develop meaningful recommendations to eliminate or reduce risk and impact.
  - Perform statistical analysis on methods to quantify changes in performance
- Review the GE APM Industry Expert recommendations and gauge performance insights gained during the 3-month period

Follow-Up
At the end of the engagement, Industrial Managed Services experts deliver additional recommendations for the customer to continue their APM Journey. Think of it as an introduction to APM Reliability Analytics which focuses upon adding reliability tracking into customer’s work processes.
- Tour of GE Digital Industrial Managed Services center
- Proposal development according to customer wishes
Asset Vigilance Starter Kit (also known as Asset Protection Starter Kit)

Goals
Industrial Managed Services analysts and experts will effectively showcase the value of condition-based maintenance via predictive monitoring. This Starter Kit creates a 90 day experience on one driver + driven machine train for immediate benefit from asset oversight using the APM processes, personnel and technology including Predictive Analytic modeling.

Requirements
Data to be provided via discrete ASCII files via Email/FTP only. Access to and meeting attendance by customer technicians and engineers. Only available for assets systems with an established template. New template development available in a separate starter kit.

Deliverables
Technical calls will assure appropriate application of existing asset system templates. The client will then benefit both from asset monitoring and learning about related processes.
- Automated data connection to GE hosted solution with view access logins
- Asset setup for limit monitoring and transition to predictive models as data builds
- Weekly Predictive Reports and Calls, High Priority Service as needed, Monthly Reviews
- Access to and recommendations from Industry Domain Experts

Consultation
- Kick off call to establish Starter Kit goals and next steps
- Historian script collaboration to assure regular and reliable data feed
- Analysis of P&IDs, Tag List, Alarm Limits, DCS Screenshots, & Datasheets
- Review of system setup parameters & launch of regular communication rhythms

Follow-Up
At the end of the engagement, Industrial Managed Services experts deliver additional recommendations for the customer to continue the APM Journey. Think of it as an introduction to APM Predictive Analytics that enables the introduction of condition-based maintenance into the customer’s work processes.
- Tour of GE Digital Industrial Managed Services center
- Proposal development according to customer wishes
Predictive Study Starter Kit (also known as Early Warning Case Study)

**Goals**
Industrial Managed Services experts will effectively showcase the value of condition-based maintenance via predictive monitoring. The Predictive Study Starter Kit executes an historical early warning case study on one asset or train executed over 30 to 90 days after data is delivered in the requested format.

**Requirements**
Data to be provided via discrete ASCII files via Email/FTP only. Access to and meeting attendance by customer technicians and engineers. Only available for assets systems with established template. New template development available in a separate starter kit.

**Deliverables**
Several technical calls will assure appropriate application of existing asset system templates. Presentation of completed early warning case study will include:
- Explanation of technology applied
- Simulated weekly reports
- Historical progression of failure
- Possible benefits of condition-based maintenance

**Consultation**
- Kick off call to establish Starter Kit goals and next steps
- Deep dive call on technology and inputs for historical failure analysis
- Presentation call for historical analysis output and value of advance notice
- Management wrap up call with results and engagement summary, Q&A, next steps

**Follow-Up**
At the end of the engagement, Industrial Managed Services experts deliver additional recommendations for the customer to continue the APM Journey. Think of it as an introduction to APM Predictive Analytics that enables the introduction of condition-based maintenance into the customer’s work processes.
- Tour of GE Digital Industrial Managed Services center
- Proposal development according to customer wishes
Strategy Management Starter Kit

**Goals**
Industrial Managed Services experts will effectively demonstrate how to manage asset strategies by using a risk-based approach over a 3-month period. By balancing risk, production goals, and resource investment, APM strategy allows asset-intensive organizations to focus costs, increasing availability and reliability, and moving away from reactive maintenance practices to a proactive approach.

**Requirements**
Appropriate system access and permissions. Attendance by customer technicians and engineers.

**Deliverables**
- Reports: Initial data quality evaluation, potential data sources and Summary Report
- KPIs: Asset Strategies by State, Active Actions by Source, by type and by implementation, Risk Profile, Cost Projection (up to 5 years), Cost Avoidance and projected value of strategy recommendations, APM Usage

**Consultation**
Three-day onsite workshop includes:
- Understand/identify workshop goals
- Data source identification
- Prioritize 5 assets in scope of one asset type
- Revise the Maintenance Plan Program and identify strategy data
- Goal review, next steps, and timeline of events

Regularly scheduled Bi-monthly video conference calls includes:
- Evaluate Asset Performance and Risk
- Review and Update Strategies
- Manage Action Items
- Review recommendations and gauge performance insights gained during the period

**Follow-Up**
At the end of the engagement, Industrial Managed Services experts deliver additional APM strategic and performance recommendations to address current asset condition needs and continue their APM journey. Think of it as an introduction to APM Strategy that will kickstart your APM program.
- Tour of GE Digital Industrial Managed Services center
- Proposal development according to customer wishes
Mechanical Integrity Starter Kit

Goals
Industrial Managed Services experts will effectively demonstrate a closed loop mechanical integrity program across your enterprise over a 3-month period. This shows how to reduce risk, lower inspections costs, and manage regulatory compliance.

Requirements
Data to be provided via formats compatible with current data loader tools. Access to and meeting attendance by customer technicians and engineers.

Deliverables
- Reports: Data quality evaluation, Asset Integrity Summary Report, RBI 580 Report
- RBI KPIs by Asset: Current Risks, Past Risks, RBI Risk Matrix by RBI Component
- IM KPIs: Task Types pending for the year, inspections pending approval by Reviewer, Open Inspection Rec’s by Asset, Current Risk by Asset
- TM KPIs by Asset and by Reviewer: Corrosion Rate Risk, Remaining Life Tasks by RBI Component, TM Tasks and Inspections pending, TM vs CCR Open Inspection Rec’s, Task Types due, Corrosions Rate Distribution, Remaining Life and Open Inspection Rec’s, TM Tasks and Corrosion Rate Distribution, TM vs CCR Remaining Life
- Perform Risk Analyses: assess the likelihood and consequences of failure and results in a prioritized list of RBI Components/Assets

Consultation
Three-day onsite workshop includes:
- Data source identification
- Prioritize 10 assets in scope in 1 group or class
- Identify mechanical integrity data (RBI, IM, TM)
- Workshop and goal review, next steps and timeline of events

Regularly scheduled bi-monthly video conference calls include:
- Collect or Update Asset Data: from operational technology (OT) and information technology (IT) systems, alarms, events and asset context; condition data (months of historian data and years of works history. e.g. events, work request, PM/PDM, etc.)
- Identify Potential Degradation Mechanisms: understand process conditions, material specifications and operational boundaries to identify degradation
- Strategy evaluation, implementation, and communication of results

Follow-Up
At the end of the engagement, Industrial Managed Services experts deliver additional APM Integrity and performance recommendations for you to continue the APM Journey. Think of it as an introduction to APM Integrity that will kickstart your Mechanical Integrity APM journey.
- Tour of GE Digital Industrial Managed Services center
- Proposal development according to customer wishes
Safety Instrumentation Starter Kit

Goals
Industrial Managed Services experts will deliver an initial onsite consultation workshop and provide the best fitting APM Integrity program plan over a 3-month period.

Requirements
Appropriate system access and permissions. Attendance by customer technicians and engineers.

Deliverables
- Reports: APM usage statistics summary, Initial data quality evaluation brief with current data quality, SIL Assessment, Verification and validation for the Selected SIFs with the SIS, Final recommendations and possible next steps Review both data source quality and completeness for ability perform the analyses
- Identify specific Hazards within the PHA that aligns with the selected SIFs to analyze
- Perform LOPA to assess the safety SIL requirements for the selected SIFs
- Configure the SIS, perform SIFs modeling and develop strategies with parametric architectural modification or relevant specific Proof Tests

Consultation
Three-day onsite workshop includes:
- Understand/identify workshop goals and prioritize 25 SIFs in scope
- Review of data requirements and data source identification
- Identify Asset Safety data (for HA, LOPA, SIS Management)
- Review and initial validation of Asset Safety data
- APM asset safety work processes to enable defining action Items
- Goal review, next steps, and timeline of events

Regularly scheduled Bi-monthly video conference calls includes:
- Collect or update Asset Safety related data
- Strategy evaluation, implementation, and communication of results

Follow-Up
At the end of the engagement, Industrial Managed Services experts deliver additional APM Integrity and performance recommendations for you to continue the APM Journey. Think of it as an introduction to APM Integrity that will kickstart your Asset Safety APM journey.
- Tour of GE Digital Industrial Managed Services center
- Proposal development according to customer wishes
Workshop Services

The Industrial Managed Services team offers focused services to provide a short-term boost of guidance and support to customers who are investing in their digital transformation.

T&M Facilitation

Goals
These engagements combine on-site and remote support with subject matter experts (SMEs) who can help customers drive their APM initiatives.

Requirements
Post-implementation service. Relevant modules should be installed, and customer personnel should have taken initial training. Services may be purchased in blocks of three weeks of expert time to be scheduled by mutual agreement within a six-month window. Blocks of less than three weeks are not offered.

Deliverables
Maximize value and optimize work practices for the APM solution including On-the-Job Training to customer resources. Our SMEs/consultants provide asset performance approaches and strategies for effective reliability improvements in areas such as:

- Business/APM Work Processes
- Asset Criticality Analysis
- Asset Strategy
- Reliability Centered Maintenance
- Reliability Analysis
- Risk Based Inspection
- Mechanical Integrity
- Root Cause Analysis
- APM Health and Policy Designer
- Metrics/Scorecards
- HAZOP / LOPA / SIL Assessment

Consultation
Workshop preparation and follow-up to be remote along with selected topics. On site delivery during one or two visits to be scheduled by mutual agreement based on need and availability over the six months following order issuance. Travel expenses to be billed in addition to labor time. Travel time counted towards total expert hours. Remote meetings also to be scheduled by mutual agreement.

Follow-Up
Subject matter support on issues identified during onsite visits.
Digital Transformation Workshop

**Goals**
GE’s Digital Transformation Advisory (DTA) Services engages senior business leaders in the changing world of industrial technology to define and accelerate their digital agenda. As a trusted client advisor, GE has engaged many companies and brings that breadth to a focused set of advisory and transformation services. This provides the Customer a Guided Transformation Roadmap tied to business objectives, Decreased Project Execution Risk, and Improved ROI through clear value modeling and tracking.

**Requirements**
Provide adequate access to leadership, staff time & reference information.

**Deliverables**

Visioning
- Digital Vision Graphic
- Outcome Map

Road mapping
- Use Case Generation and Value Modeling
- Digital Maturity Assessment
- Industrial Transformation Readiness (ITR)
- Digital Solution Alignment
- Digital Roadmap
- Outcome Realization & Risk Plan

Organizational Transformation Services
- Communication Planning
- Change Management
- Operational Model Design

**Consultation**
Description

**Follow-Up**
At the end of the engagement, Industrial Managed Services experts deliver additional APM Integrity and performance recommendations for you to continue the APM Journey. Think of it as an introduction to APM Integrity that will kickstart your Asset Safety APM journey.
- Tour of GE Digital Industrial Managed Services center
- Proposal development according to customer wishes
Pre-Sales Services

GE Digital Industrial Managed Services has offerings to help you understand how GE Digital solutions can drive your digital transformation.

Exploration Visits

To understand how GE is leveraging applications to transform industries, we invite you to visit one of our global centers. GE Digital Industrial Managed Services team is strategically located all around the globe with centers in:

- Chicago
- São Paulo
- Paris
- Dubai
- Johannesburg
- Shanghai

During your time at our center, you will:

- Learn about the APM platform and how it enables digital transformations
- Learn about GE Digital applications and how they provide value to your business
- Learn about education services, professional services, and adoption services that enable your adoption of GE Digital solutions
- Learn about GE Digital Industrial Managed Services and how it can drive additional value into your business processes
- Experience and see real reliability engineers and experts using GE Digital solutions
- See concrete examples of customer value generated with GE Digital solutions

Value Discussions

To better understand how digital outcomes can transform your business, you can engage one of our subject matter experts in a remote meeting to walk through a previous customer value case and understand how customers derive value from GE Digital Industrial Managed Services. GE Digital Industrial Managed Services team has more than 1100+ years of Asset Performance Management expertise across many industries and located in centers around the globe.
About GE

GE (NYSE: GE) is the world’s Digital Industrial Company, transforming industry with software-defined machines and solutions that are connected, responsive and predictive. GE is organized around a global exchange of knowledge, the “GE Store,” through which each business shares and accesses the same technology, markets, structure and intellect. Each invention further fuels innovation and application across our industrial sectors. With people, services, technology and scale, GE delivers better outcomes for customers by speaking the language of industry.

Contact Information

Americas: 1-855-YOUR1GE (1-855-968-7143)
gedigital@ge.com
www.ge.com/digital/services/industrial-managed-services

©2019 General Electric. All rights reserved. *Trademark of General Electric. All other brands or names are property of their respective holders. Specifications are subject to change without notice.