



Workflow Solutions



Contents

Chapter 1: Overview	1
Overview of the Workflow Solutions	2
Chapter 2: Equipment Health Workflow	3
About Equipment Workflow	4
Chapter 3: Production Tracking Workflow	8
About Production Tracking Workflow	9
Security Groups and Roles	9
Catalog	9
Chapter 4: Asset Health and Maintenance Assessment	10
About Asset Health & Maintenance Assessment Workflow	11
Access AHMA Overview Dashboard	11
AHMA Configuration	12
Access AHI Overview Dashboard	12
Access AHI Details View Dashboard	12
Access Test Data Management	12
Access Data Deletion Management	13
Chapter 5: Reference	14
General Reference	15

Copyright Digital, part of GE Vernova

© 2024 GE Vernova and/or its affiliates. All rights reserved.

GE, the GE Monogram, and Predix are trademarks of General Electric Company used under trademark license.

This document may contain Confidential/Proprietary information of GE Vernova and/or its affiliates. Distribution or reproduction is prohibited without permission.

THIS DOCUMENT AND ITS CONTENTS ARE PROVIDED "AS IS," WITH NO REPRESENTATION OR WARRANTIES OF ANY KIND, WHETHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTIES OF DESIGN, MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE. ALL OTHER LIABILITY ARISING FROM RELIANCE UPON ANY INFORMATION CONTAINED HEREIN IS EXPRESSLY DISCLAIMED.

Access to and use of the software described in this document is conditioned on acceptance of the End User License Agreement and compliance with its terms.

Chapter 1

Overview

Topics:

- [Overview of the Workflow Solutions](#)

Overview of the Workflow Solutions

Workflow Solutions Content enables GE Vernova Services to deliver tailored configurations of APM that are aligned to a customer's work processes. New families, fields, family policies, system tables and codes, permissions, security groups and roles, policies, and catalog content that enable tailored configurations to accelerate adoption of APM have been added.

Workflow Solutions Content is designed to be used only after configuration by GE Vernova Services. Therefore, this documentation provides only high-level information to allow you to identify the Content. If you engage GE Vernova Services to configure the Content, documentation of the fully configured solution will be provided as a deliverable of the service engagement.

For more information on Workflow Solutions, contact your GE Vernova account manager.

Important: Workflow Solutions Content is designed to be used only after configuration by GE Vernova. If you attempt to use or modify the Content without assistance from GE Vernova, this may adversely affect other APM features and functions, and is not supported.

Chapter 2

Equipment Health Workflow

Topics:

- [About Equipment Workflow](#)

About Equipment Workflow

The Equipment Health Workflow Content includes families, fields, family policies, system tables and codes, permissions, security groups and roles, policies, and catalog content that supplements the Asset Health Management and Rounds features of APM.

Table 1: Steps in Equipment Workflow

S.No	Step Name
1	Access EHW Equipment Health Configuration Workflow Dashboard on page 4
2	Step 1: Identify Equipment to Monitor
3	Step 2.1 Rounds Configuration
4	Step 2.2 Tag Configuration
5	Step 2.3 Predictive Diagnostic Configuration
6	Step 3: Consolidate Data with Policy
7	Access Equipment Health Tracking Workflow
8	Step 4: Execute Health Algorithm
9	Step 5: Evaluate Health vs. Criteria

Access EHW Equipment Health Configuration Workflow Dashboard

Procedure

1. In the **Applications** menu, navigate to the **TOOLS** section.
2. Select **Catalog**.
The **Catalog** page appears.
3. Select **Home** → **Public** → **Workflows** → **Equipment Health Tracking Workflow** → **Dashboards** folder.
The corresponding Catalog items appear in the grid within the workspace for the selected folder.
4. Select **EHW Equipment Health Configuration Workflow** catalog item.
The Dashboard is displayed with the following widgets:
 - **Asset Health Index:** Displays the Index number for all assets in the plant.
 - **Workflow Steps:** Displays the list of steps to be performed in sequence.
 - **Asset Health Overview:** Displays various parameters around the health of all the assets.

Step 1: Identify Equipment to Monitor

Procedure

1. Access EHW Equipment Health Configuration Workflow Dashboard.
2. In the **WORKFLOW STEPS** section, select **Step 1: Identify Equipment to Monitor**.
A new tab opens, displaying the **Assets with no Health Status**.
3. In the **ACTION** Column, select the **Update Health WF Status**.
Record Manager of the asset opens.
4. In the **Health WF Status** drop-down list, select **To Be Monitored**.

5. Select  and then select .
6. Select the tab displaying the **Assets with no Health Status**, and then select .
The Asset selected to be monitored is not shown on the list.

Next Steps

[Rounds Configuration](#)

Step 2.1: Rounds Configuration

Procedure

1. Access EHW Equipment Health Configuration Workflow Dashboard.
2. In the **WORKFLOW STEPS** section, select **Step 2.1: Rounds Configuration**.
A new tab opens, displaying the **Assets to be Monitored**.
3. Search for the Asset selected to be monitored in **Step 1: Identify Equipment to Monitor**.
4. In the **ACTION 1** Column, select the **Review Existing MLs**.
5. Review the existing MLs then select  and then select .
6. In the **ACTION 2** Column, select the **Create New MLs**.
7. Enter the details as needed select  and then select .

Step 2.2: Tags Configuration

Procedure

1. Access EHW Equipment Health Configuration Workflow Dashboard.
2. In the **WORKFLOW STEPS** section, select **Step 2.2: Tags Configuration**.
A new tab opens, displaying the **Assets to be Monitored**.
3. Search for the Asset selected to be monitored in **Step 1: Identify Equipment to Monitor**.
4. In the **ACTION 1** Column, select the **Review Existing Tags**.
5. Review the existing Tags then select  and then select .
6. In the **ACTION 2** Column, select the **Create New Tags**.
7. Enter the details as needed select  and then select .

Step 2.3: Predictive Diagnostic Configuration

Procedure

1. Access EHW Equipment Health Configuration Workflow Dashboard.
2. In the **WORKFLOW STEPS** section, select **Step 2.3: Predictive Diagnostic Configuration**.
A new tab opens, displaying the **Assets to be Monitored**.
3. Search for the Asset selected to be monitored in **Step 1: Identify Equipment to Monitor**.
4. In the **ACTION 1** Column, select the **Link SmartSignal Asset**.
5. Enter the details as needed select  and then select .
6. In the **ACTION 2** Column, select the **Update Health WF Status**.
7. Select under **ACTION 2** Column for the asset.
8. In **Health WF Status** drop-down list box, select **Ready for Monitoring**.

9. Select  and then select .
10. Select the tab displaying the **Assets to be Monitored**, select .
The Asset that is marked as ready for monitoring is not shown on the list.

Step 3: Consolidate Data with Policy

Procedure

1. Access EHW Equipment Health Configuration Workflow Dashboard.
2. In the **WORKFLOW STEPS** section, select **Step 3: Consolidate Data with Policy**.
A new tab opens, displaying the **Assets Ready for Monitoring**.
3. Search for the Asset selected to be monitored in **Step 1: Identify Equipment to Monitor**.
4. In the **ACTION 1** Column, select the **Execute Tag Reading Policy**.
The **Queued Successfully** window appears.
5. Select **OK** and then close all the policy tabs.
6. In the **ACTION 2** Column, select the **Execute Main Health Policy**.
The **Queued Successfully** window appears.
7. Select **OK** and then close all the policy tabs.
8. In the **ACTION 3** Column, select the **Update Health WF Status**.
9. In **Health WF Status** drop-down list box, select **Being Monitored**.
10. Select  and select .

Equipment Health Tracking Workflow

Procedure

1. Access EHW Equipment Health Configuration Workflow Dashboard.
2. In the **WORKFLOW STEPS** section, select **Equipment Health Tracking Workflow**.
A new tab opens, displaying the following widgets:
 - **Asset Health Index:** Displays the Index number for all assets in the plant.
 - **Workflow Steps:** Displays the list of steps EHW to be performed in sequence.
 - **Asset Health Overview:** Displays various parameters around the health of all the assets.

Next Steps

[Execute Health Algorithm](#)

Step 4: Execute Health Algorithm

Procedure

1. [Access Equipment Health Tracking Workflow](#).
2. In the **WORKFLOW STEPS** section, select **Step 4: Execute Health Algorithm**.
A new tab opens, displaying the following widgets:
 - Individual Tag Value Reading
 - Individual Asset Health Index Calculation
3. In the **ACTION** Column of **Individual Tag Value Reading**, select the **Read this Tag**.
The **Queued Successfully** window appears.
4. Select **OK** and then close all the policy tabs.

5. In the **ACTION** Column of **Individual Asset Health Index Calculation**, select the **Calculate Asset Health Index**.
The **Queued Successfully** window appears
6. Select **OK** and then close all the policy tabs.

Step 5: Evaluate Health vs. Criteria

Procedure

1. [Access Equipment Health Tracking Workflow](#).
2. In the **WORKFLOW STEPS** section, select **Step 5: Evaluate Health vs. Criteria**.
A new tab opens, displaying the following widgets:
 - Asset Health Index-AHI
 - Health Index Breakdown
 - Assets Being Monitored
3. In **Assets Being Monitored**, under **ACTION 1** Column, select the **Read this Tag**.
4. Enter the details as needed select  and then select .
5. In the **ACTION 2** Column, select the **Update Health WF Status**.
6. In **Health WF Status** drop-down list box, select **Being Monitored**.
7. Select  and select .
8. Select the tab displaying the **Assets to be Monitored**, select .
The Asset that is marked as ready for monitoring is not shown on the list.

Chapter 3

Production Tracking Workflow

Topics:

- [About Production Tracking Workflow](#)
- [Security Groups and Roles](#)
- [Catalog](#)

About Production Tracking Workflow

The Production Tracking Workflow Content includes permissions, security groups and roles, and catalog content that supplements the Production Loss Analysis features of APM.

Security Groups and Roles

The following table details the Security Groups, and Roles in the Production Tracking Workflow:

Groups	PTW Editor	PTW User	PTW Viewer
Security Groups	Yes	Yes	Yes
Roles	Yes	Yes	Yes

Catalog

All catalog items from the following folders and subfolders are included in the Production Tracking Workflow content.

- Baseline\Workflows\Production Tracking Workflow
- Public\Workflows\Production Tracking Workflow

Chapter 4

Asset Health and Maintenance Assessment

Topics:

- [About Asset Health & Maintenance Assessment Workflow](#)
- [Access AHMA Overview Dashboard](#)
- [AHMA Configuration](#)
- [Access AHI Overview Dashboard](#)
- [Access AHI Details View Dashboard](#)
- [Access Test Data Management](#)
- [Access Data Deletion Management](#)

About Asset Health & Maintenance Assessment Workflow

Asset Health & Maintenance Assessment (AHMA) uses cutting-edge technology to continuously monitor your equipment and facilities. By analyzing real-time data, we can spot potential issues before they become problems, allowing you to take action quickly and efficiently.

Key benefits:

- Proactive maintenance planning
- Reduced unexpected breakdowns
- Improved asset reliability and availability
- Intelligent health assessments
- Easy-to-understand performance indicators

With AHMA, you'll have the insights you need to make informed decisions about your assets' care and maintenance. Let us help you optimize your operations and protect your investments.

AHMA relies on Health Indicators to classify an asset's status into three categories: normal, warning, or alert, based on its health assessment. APM Policies are provided to calculate health indicators for assets by processing both raw and processed information.

AHMA Policy is structured to accommodate multiple input sources:

- Field Data
- Rounds
- Time Series

Access AHMA Overview Dashboard

Before You Begin

- APM version must be 5.1.1 or above.
- Asset Hierarchy should be implemented.

Procedure

1. In the **Applications** menu, navigate to the **TOOLS** section.
2. Select **Catalog**.
The **Catalog** page appears.
3. Select **Home** → **Public** → **Accelerators** → **Health** → **Dashboards** folder.
The corresponding Catalog items appear in the grid within the workspace for the selected folder.
4. Select **ACC_Lets Start** catalog item.
The Dashboard is displayed with the following widgets:
 - **Task-1 Configuration and Implementation:** Displays the list of actions to be performed in sequence.
 - **Task-2 Test Data Management:** Displays the action to be performed.
 - **Task-3 Data Deletion Management:** Displays the action to be performed.

AHMA Configuration

Procedure

1. [Access AHMA Overview Dashboard](#) on page 11.
2. In **Task-1 Configuration and Implementation**, select **T-1.1 One Time Configuration**. For next steps, refer to AHMA Deployment Guide.
3. In **Task-1 Configuration and Implementation**, select **T-1.2 Upload Master Template**. For next steps, refer to AHMA Deployment Guide.
4. In **Task-1 Configuration and Implementation**, select **T-1.3 Template Application**. For next steps, refer to AHMA Deployment Guide.
AHMA workflow is now configured.

Access AHI Overview Dashboard

Procedure

1. [Access AHMA Overview Dashboard](#) on page 11.
2. Select **T-1.4 Overview Dashboard** from **Task-1 Configuration and Implementation**.
The AHI Overview Dashboard is displayed. For more information on the widgets of the dashboard, refer to [AHI Overview Dashboard](#) on page 18.

Access AHI Details View Dashboard

AHI Details View dashboard displays details of the asset that is being investigated on AHMA Overview Dashboard.

Procedure

1. [Access AHI Overview Dashboard](#) on page 12
2. In **Health Indicator Overview**, select the AHI number for the asset.
AHI Details View dashboard is displayed. For more information on the widgets of the dashboard, refer to [AHI Details View Dashboard](#) on page 18.

Access Test Data Management

Procedure

1. [Access AHMA Overview Dashboard](#) on page 11.
2. Select **T-2.1 Test data Management** from **Task-2 Test Data Management**.
The Test data Creation Dashboard is displayed with the following widgets:
 - **T-2.1.1 Create test case reading and Validation**: Displays the list of Assets, Asset details, Entity Status and Actions to be performed.
 - **T-2.1.2 Test case Implementation Status and Test Data deletion**:
3. In **T-2.1.1 Create test case reading and Validation**:

- a) Select **Create Test Case data** under the **ACTION** column against the Asset you want to perform actions.
Template Test Case datasheet opens in Record Manager.
 - b) Enter **Test Data Date**, and Select **Save**.
 - c) Select **Test Data Creation** tab.
 - d) Select **Validation** under the **ACTION 1** column against the Asset you selected in step 3.
Validation Testing dashboard appears.
 - e) Verify if the reading are upto date.
4. In **T-2.1.2 Test case Implementation Status and Test Data deletion**:
- a) Verify that **Status** column is marked as **Reading Created**.
 - b) Verify that **Deleted** column is marked as **No**.
 - c) Verify that latest reading is updated by selecting **View Data** under **Remark 1** column.
 - d) Select **Execute Instance** under the **ACTION** column.
The policy is queued for execution.

Access Data Deletion Management

Procedure

1. [Access AHMA Overview Dashboard](#) on page 11.
2. Select **T-3.1 Delete Template and Family Data** from **Task-3 Data Deletion Management**.
The Delete Template and Family Data Dashboard is displayed with the following widgets:
 - **T-3.1.2 Delete User template Data**: Displays the list of templates, that can be deleted.
 - **T-3.1.1 Delete Master Template Data**: Displays the list of master templates, that can be deleted.
 - **T-3.1.3 Delete Family data**: Displays the list of Asset Templates, that can be deleted.
3. In **T-3.1.2 Delete User template Data**:
 - a) Select **Delete** under the **ACTION** column.
Delete Template datasheet opens in Record Manager.
 - b) Select .
The **Delete** field is updated as Yes in the widget.
4. In **T-3.1.1 Delete Master Template Data**:
 - a) Select **Delete Master template** under the **ACTION** column.
Delete Template datasheet opens in Record Manager.
 - b) Select .
The **Delete** field is updated as Yes in the widget.
5. In **T-3.1.3 Delete Family data**:
 - a) Select **Delete** under the **ACTION** column.
Delete Data datasheet opens in Record Manager.
 - b) Select .
The **Delete** field is updated as Yes in the widget.

Chapter 5

Reference

Topics:

- [General Reference](#)

General Reference

Data Configuration

The following sub-sections are included in the **Data Configuration** section:

- Entity Families
- Relationship Families
- Relationship Definitions
- Fields
- Datasheets
- Family Policies
- System Codes and Tables

These sub-sections enable you to tailor the APM configuration to align with your work processes.

Entity Families

Family	Family ID
Time Series Tag	MI_TSTAG
Time Series Tag Values	MI_TSTAGVAL
Workflow Configuration	MI_WRKFLW_CONFIG
Asset Criticality Mapping	MI_ASSE_CRIT_MAPP
P to M Asset Mapping	MI_PTOMAMAP

Relationship Families

Family	Family ID
Has Time Series Tag	MI_HAS_TS_TAG
Has Time Series Value	MI_HAS_TS_VALUES
Has Workflow Config Details	MIR_HS_WRKFLW_CONFIG_DTLS

Relationship Definitions

Relationship ID	Predecessor Family	Successor Family	Cardinality
MI_HAS_TS_TAG	Equipment	Time Series Tag	Many to Many
MI_HAS_TS_TAG	Functional Location	Time Series Tag	Many to Many
MI_HAS_TS_VALUES	Time Series Tag	Time Series Tag Values	One to Many
MIR_HS_WRKFLW_CONFIG_DTLS	Workflow Configuration	Workflow Configuration Details	One to Many

Fields

Family	Family ID	Additional Field	Additional Field ID
Functional Location	MI_FNCLOC00	EHW Status	MI_FNCLOC00_EHW_STATUS_C
Equipment	MI_EQUIP000	EHW Status	MI_EQUIP000_EHW_STATUS_C
Measurement Location	MI_MEAS_LOC	EHW Weight	MI_MEAS_LOC_EHW_WGHT_N
Health Indicator	MI_HLTH_IND	EHW Weight	MI_HLTH_IND_TYPE_C
Health Indicator	MI_HLTH_IND	Type	MI_HLTH_IND_EHW_WGHT_N

Datasheets

Family	Datasheet Name	Datasheet Caption	Datasheet ID
Equipment	Health Workflow Status (Equipment)	EHW Status	EHW_STATUS
Functional Location	Health Workflow Status (Functional Location)	EHW Status	EHW_STATUS
Measurement Location	Update ML Weight	EHW ML Weight	EHW_WEIGHT
P to M Asset Mapping	P to M Asset Mapping	EHW P to M Asset Mapping	EHW_P_M_MAPPING
Time Series Tag	Time Series Tag	EHW TimeSeries Tag	EHW_TS_TAG
Workflow Configuration	Workflow Module Config	EHW Workflow Configuration	EHW_CONFIG
Asset Criticality Mapping	Asset Criticality Mapping	EHW Asset Criticality Mapping	EHW_ASSET_CRIT_MAPP
Measurement Step	EHW Measurement Step	EHW Measurement Step	EHW_MEAS_STP
EHW Workflow Module Config	EHW Workflow Module Config	EHW Workflow Module Config	EHW_CONFIG

System Codes and Tables

System Table Description	System Table ID
Health Workflow Status	MI_EHW_STATUS
Time Series Tag Type	MI_TSTAG_TYPE
Time Series Tag Operation	MI_TSTAG_OPERATION
Health Indicator Type	MI_HEALTH_IND_TYPE
Tag Source	MI_EHW_TAG_SOURCE

Security Groups and Roles

The following table details the Security Groups, and Roles in the Equipment Health Workflow:

Groups	EHW Editor	EHW User	EHW Viewer
Security Groups	Yes	Yes	Yes
Roles	Yes	Yes	Yes

Module Workflow Policies

The following are the workflow policies available for the Equipment Health Workflow:

- EHW Calculate Asset AHI (Main) - Segment 001
- EHW Calculate Asset AHI (Main) - Segment 002
- EHW Calculate Asset AHI (Main) - Segment 003
- EHW Calculate Asset AHI (Main) - Segment 004
- EHW Calculate Asset AHI (Main) - Segment 005
- EHW Calculate Asset AHI (Main) - Segment 006
- EHW Calculate Asset AHI (Main) - Segment 007
- EHW Calculate Asset AHI (Main) - Segment 008
- EHW Calculate Asset AHI (Main) - Segment 009
- EHW Calculate Asset AHI (Main) - Segment 010
- EHW Create-Update
- EHW Alert Level for HI
- EHW Read Tag list - PTS
- EHW FLOC After Update Sub Policy
- EHW Equipment After Update Sub Policy
- EHW Create-Delete Asset and Tag Policy Instances - OTC
- EHW Read Tag list - OTC
- EHW Calculate Rounds CP1 and CP2
- EHW Calculate TS CP1 and CP2
- EHW Calculate PM CP1 and CP2
- EHW Calculate CM CP1 and CP2
- EHW Calculate REC CP1 and CP2
- EHW Calculate PD CP1 and CP2
- EHW Create Time Series Value
- EHW TimeSeries After Insert Sub Policy
- EHW Calculate CP1 Score Impact
- EHW Create-Delete Asset and Tag Policy Instances
- EHW Read Time Series Values (Main) - Segment 1
- EHW Read Time Series Values (Main) - Segment 2
- EHW Read Time Series Values (Main) - Segment 3
- EHW Read Time Series Values (Main) - Segment 4
- EHW Read Time Series Values (Main) - Segment 5
- EHW Read Time Series Values (Main) - Segment 6
- EHW Read Time Series Values (Main) - Segment 7
- EHW Read Time Series Values (Main) - Segment 8
- EHW Read Time Series Values (Main) - Segment 9
- EHW Read Time Series Values (Main) - Segment 10
- EHW Calculate Rounds Pro CP1 and CP2
- EHW CP2 Description by CP1 Category Description
- EHW Read Time Series Values (Main) OTC - Segment 1

- EHW Read Time Series Values (Main) OTC - Segment 2
- EHW Read Time Series Values (Main) OTC - Segment 3
- EHW Read Time Series Values (Main) OTC - Segment 4
- EHW Read Time Series Values (Main) OTC - Segment 5
- EHW Read Time Series Values (Main) OTC - Segment 6
- EHW Read Time Series Values (Main) OTC - Segment 7
- EHW Read Time Series Values (Main) OTC - Segment 8
- EHW Read Time Series Values (Main) OTC - Segment 9
- EHW Read Time Series Values (Main) OTC - Segment 10
- EHW Process Workflow Configuration
- EHW Process Workflow Configuration for RoundsPro

Catalog

All catalog items from the following folders and subfolders are included in the Equipment Health Workflow content.

- Baseline\Workflows\Equipment Health Tracking Workflow
- Public\Workflows\Equipment Health Tracking Workflow

Asset Health and Maintenance Assessment Workflow Dashboards

AHI Overview Dashboard

AHI Overview dashboard displays the following widgets:

- **Asset Count:** Displays a trend, **Asset Count-AHI Vs Alerts** and is color coded based on the severity of the alerts. You can click on the Asset Count-AHI numbers to view more details.
- **Asset Health Overview (Top 30 Bad Actors):** Displays the summary of asset health. You can click on the number to view AHI Details View dashboard.
- **Asset Risk Index VS Asset Criticality Index:** Displays a trend, Asset Risk Index (ARI) Vs Asset Criticality Index (ACI) for the assets.
- **Asset Health Index VS Asset Criticality Index:** Displays a trend, Asset Health Index (AHI) Vs Asset Criticality Index (ACI) for the assets.
- **Asset Health Index VS Estimate Remaining Life:** Displays a trend, Asset Health Index (AHI) Vs Estimate Remaining Life (ERL) for the assets.
- **Health Indicator Overview:** Displays the list of recommendations generated and their status. You can click on the AHI number to view AHI Details View dashboard.

AHI Details View Dashboard

AHI Details View dashboard displays the following widgets:

- **Health Indicator KPIs:** Displays the summary of asset health of the asset along with a trend. You can click on the Asset ID to view **Config** dashboard and you can click on trend icon to view the **ACC_Heath_GR_HI_Trending**.
- **Health Tree Diagram:** Displays the AHI score and AHI CI level wise. You can click on AHI score or the AHI CI to view the respective trends.
- **Anomaly Management:** Displays assets with score less than 100.
- **Data Management:** Displays the list of assets highlighting its score, input type and details on recommendation.
- **AMI Recommendations:** Displays all open recommendation, both created manually and via the policy execution under the **Anomaly Management**.

- **AMI Recommendation Counts:** Displays a trend, No. of Recommendations Vs the Criticality of the Recommendation.