

Digitalizing Asset Health Maintenance Process to Improve Overall Plant Performance

Maintaining process plant assets (mechanical equipment or field devices) is critical but cumbersome. Most plant engineers elect calendared maintenance, but even it has blind spots. Assets do not fail per a plan — even with watchful eyes, plant assets can fail unexpectedly causing severe damage to plant processes, other machines, equipment, and asset operators.

Two major challenges that prevent plant operators from maintaining assets digitally are — *lack of normalized field diagnostic data and the absence of an IAMS application to predict asset failure.*

The heterogeneous make-up of process plant assets restricts the plant engineers from analyzing the assets' health due to inconsistent device data patterns. On top of this, the lack of an asset management platform makes it difficult to have a comprehensive view of all the assets' health.

Challenges

Due to the lack of normalized device diagnostic data at a central point of access, plant operators and asset maintenance engineers face some critical challenges like the following:

- Difficulties in identifying outlier failures
- Unplanned shutdowns causing loss of production
- Troubleshooting and repairing failed/damaged assets take more man-hours causing rising asset idle time
- Manual maintenance unable to account for constant abrasions of plant assets
- Depleting device performances go unnoticed often
- Complex to manage huge asset fleet manually

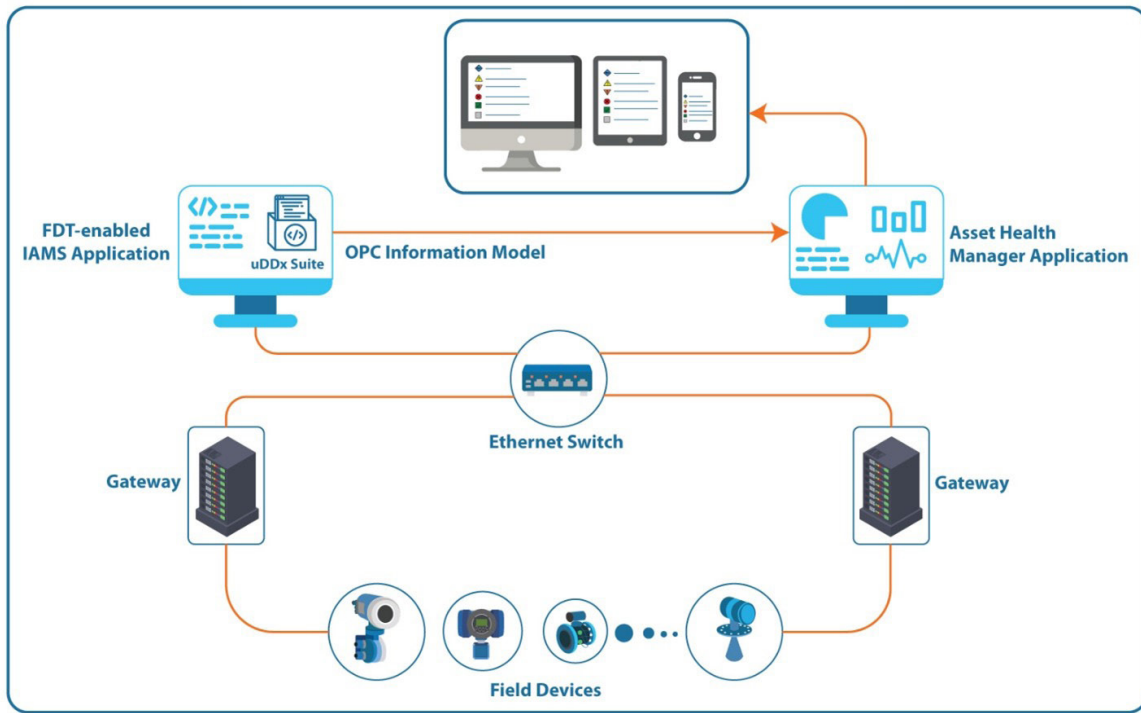
Solution

To solve these challenges, Utthunga recommends using the uDDx Suite to normalize device diagnostic data and an asset health manager application to help maintenance engineers analyze data to predict asset failure.

These challenges can be resolved in 3 steps:

Step 1: Use existing FDT-enabled IAMS systems and the physical communication network that includes gateways, devices, multiplexers, I/Os, etc.

Step 2: Install Utthunga's uDDx Suite as part of the FDT-enabled IAMS application. uDDx suite will use the IAMS communication channel to retrieve device diagnostics and status-related information in a normalized fashion. This enables IT applications access to the data.



uDDx Suite will poll the critical asset diagnostic data such as device identification, device diagnostics, process values, device core parameters, etc., using its DTM component. Later uDDx Suite's OPC UA component will use this data to construct the OPC UA information model according to PA-DIM.

Step3: Install Utthunga's asset health manager application and configure it to communicate with the uDDx Suite. The asset health manager application will retrieve the asset health data from the uDDx Suite and publish it on the comprehensive dashboard. It will allow users a snapshot view of various device health stats categorized based on NAMUR NE 107 with alert details. It allows maintenance engineers the ability to prioritize troubleshooting/maintenance actions accordingly.

Benefits

By deploying the above solutions, plant operators and maintenance engineers will achieve the following benefits:

- 10% reduction in unplanned shutdowns
- 75% cut in troubleshooting time as maintenance activities can be planned before the assets stop working
- 1500 man-hours reduced due to the ability to configure and calibrate assets remotely using the IAMS application
- One access point to view all the alerts based on the device health status



Know more about Utthunga's Device Integration Services



Know more about Utthunga's Device Integration Solutions