

HighWire Implementation Phases

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Phases

The implementation of HighWire generally consists of phases that include Discovery, Data Validation, Quality Validation, Asset / Route Design, Material Balance Review, User Acceptance Testing, Production Deployment and then Usage Expansion. AMP will supply this document as well as an Implementation plan, which is a more task-oriented view to these phases.

Discovery Phase

Summary

In this phase we ask our customers for a dump of all available data that will help us configure their assets.

Details

AMP will take this data and draft out the initial implementation artifacts. The data requested will include:

- Asset Diagrams
- Measurement Files
- Internal (CSV file from Scada, Omni Reports, Pi Downloads, etc.)
- External (Third Party Statements)
- Meter Proves
- Meter Configuration Files Downloaded from the flow computer
- Tank Strapping Documents

From these documents, we create a draft implementation that we try to share with the customer. We currently use Google Docs. However, we have implemented local Excel loading and are exploring shared Excel loading for customers that use Microsoft products, who we will deploy internally. (We are exploring Microsoft Graph.)

Data Validation

Summary

In this phase we are trying to verify the coverage of measurement data. In other words, do all the assets loaded have data and is that data loading?

Details

AMP will ask for a few months of sample data including all:

- Batch Measurements
- Daily Measurements
- Interval Measurements
- Tank Gauge Measurements
- Tank Ticket Measurements
- Grind Out
- Meter Proves
- Gas Hourly
- Gas Daily
- Gas Event
- Gas Alarm
- Gas Configuration
- Lab Data

AMP will load all the data possible and validate that each of the configured meters and tanks have data. We then iterate with the customer resolving configuration and other issues that cause the data not to load or to not load reliably. Some examples of reviews conducted are:

- Liquids
 - Do all dailies load and create expected meter tickets?
 - Do all batches load and associate correctly to daily tickets?
 - Does the grind out apply correctly against the Meter Tickets?
- Gas
 - Do all gas meters have an associated sample point?
 - Do all sample points have labs loading?
 - Do the labs apply correctly to the Hourly and Daily gas measurements?

Quality Validation

Summary

In this phase AMP will review the quality of the data loaded. We will review the configuration against the detail data. Then we will perform a mass validation against the raw measurements loaded.

Details

AMP performs the following data validation and calculation reviews:

- Do the record counts from raw data match the record counts in HighWire?
- Did all raw measurement totals for key fields like net volume match the totals of the raw data loaded?
- Review, in detail, tickets by unique configuration.
 - **Do they calculate properly?**
 - Do they contain all data fields required / configured?
 - Do the data fields match the raw record imported?

Balance Design

Summary

In this phase AMP works closely with the customer to understand how the customer wants to segment and rollup balances. This is an iterative process and AMP has built a suite of environment deployment tools to accomplish this effort quickly.

Details

AMP usually starts by:

- Identifying the low-level meter routes. (What asset does the meter take from and what asset does it give to?)
- Exploring with the customer how they want to roll up, and in the other direction, drill into material imbalances.
- Reviewing inventory setup to make sure the inventory rolls up to the proper level as well.
- Generating an additional design of custody balances vs. forensic balances.
- Previewing balance configuration with customers and iterates until a setup can be agreed upon.

Material Balance Review

Summary

Once all data is loading correctly and the balance design is agreed upon, AMP will then assist the customer in reviewing the balance generated against their current internal balance or by other means...

Details

Balance review consists of AMP performing the following steps:

- Review the receipts and deliveries against loaded ticket totals at the lowest levels.
- Review inventory against loaded inventory at the lowest levels.
- Review the summary levels against detail levels.
- Verify that the detail inventory rolls-up to the summary level.
- Review all third party / LACT receipts / deliveries against the summary balance.

AMP then reviews its findings with the customer and this usually consists of:

- Matching balances to existing systems or spreadsheets.
- Iterating until all balance differences are fixed or explained. The iterations steps are:
 - Review
 - Find issues and fix configuration
 - Tearing down old environment
 - Build environment
 - Repeat until stratified

User Acceptance Testing

Summary

Once balancing is correct and other important customer requirements are met, AMP will deploy to an environment for User Acceptance Testing (UAT).

Details

The customers sometimes have their own “test plans” for this phase; however, for those that do not it usually consists of:

- Parallel testing against existing automation
- Checking calculations against existing tickets
- Testing ticket / volume editing
- Verifying balance on an ongoing basis

AMP can assist with some automation testing developed over time with our customers.

Production Deployment

Summary

AMP will deploy only configurations and software versions that have been signed off by customers in UAT. This deployment is mostly automated. This automation is tested in UAT as well so that production moves are smooth and only deliver what has been reviewed.

Detail

The usual deployment consists of:

- A SQL script that consists of DDL and Static Data that will install or upgrade the existing HighWire database.
- Installation of the release code or application of patch code to the HighWire deployed software (XCopy files).
- Population asset data from the HighWire asset Google Doc or an “Excel” configuration source.

Usage Expansion

Summary

AMP's job is not done when HighWire is in production. Usually, customers start off using the base functionality of HighWire. IT folks call it Minimum Viable Product (MVP). HighWire is in no way an MVP; however, the initial configuration customers want satisfies the MVP paradigm.

Details

AMP will then assist the customer to configure and utilize additional features. Some examples from previous customers would be:

- Measurement Validation (Expansion from base configuration)
- Notification Configuration
- Meter Prove Import
- More in-depth training
- 24/7 Support