
IPPD Proof of Concept Requirements

Overview

This document is provided to explain typical Proof of Concept (POC) requirements requested by customers who wish to test the feasibility of AspenTech's software product known as Aspen Basic Engineering (ABE). It is assumed that the installed software will be ABE v7.3 as minimum.

Proof of Concept requirements is a list of tasks that are required as a minimum to be configured in ABE to test the feasibility of the software according to the customer needs. These tasks vary from customer to customer dependant on the nature of the customer's business. For most customers the use of their own deliverables (PFD Legend, Datasheets, Customer / Client Logos, Calculation sheets etc) within ABE is expected as a minimum. These deliverables can be configured into an ABE library for use on projects.

ABE Workflow

ABE is an engineering database that supports the production of standard and consistent deliverables (diagrams, equipment lists and specification sheets, etc) for the generation of client documentation.

These deliverables can be populated from various sources (i.e. basis of design, simulations, thermal design packages, calculation programs, engineers etc), and there is a suggested workflow that can be followed to populate deliverables when using the out of the box libraries.

The ABE workflow is flexible and can populate the engineering database in a number of ways. It is not necessary to always follow the suggested workflow (as presented via an ABE training course) and customers can implement their own work processes and practices (where feasible) through the concept of knowledge bases or rules.

Regardless of which workflow is implemented, ABE's vehicle of moving data from one source to another ensures consistency and integrity of data and alleviates transcription errors. In addition, data consistency is maintained across all deliverables allowing more time to focus on the critical engineering designs.

During a proof of concept workshop, generally, there is not enough customer information or documentation to provide an alternate workflow to the one suggested out of the box. At this phase the focus is to ensure that a small design can be reproduced in ABE.

Typical Requirements during a Proof of Concept Project

Generally in a POC workshop the customer will request a test case to be simulated in the ABE environment. This test case is typically a subset of a front end engineering design (FEED) package that has already been completed. The test case may comprise of one or all of the following...

- Transfer basis of design data to equipment datasheets
- Import of A+ simulation data
- Reproduce 2 PFD's and Heat Material Balance
- Populate PFD major equipment with simulation data
- Display simulation data on out of the box datasheets
- Configure 2 customer datasheets and/or equipment lists
- Import / Export equipment data from calculation program for one equipment
- Testing customer data with data in ABE

It is the customer's expectations that the chosen design can be assimilated in ABE. A number of factors will determine the success criteria; this varies for each customer, and will include some of the following tasks below....

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KEY FEATURES

Basic Engineering Design Data Management (BEDD)

ABE provides a basic 'Master BEDD' datasheet that allows the basis of design data to be entered and used within the project. The out of the box functionality assumes that this datasheet is complete before any specification datasheets are opened. However, it is highly likely that this BEDD data is subject to change during the course of the project and this aspect of the configuration provides the following functionality....

- Ensure any BEDD compliant attributes are synchronized on datasheets when the BEDD changes
- Ensure any BEDD initialized attributes are initialized on datasheets (once the equipment attributes are initialized they will vary from the BEDD)
- Include one or two customer specific BEDD tables for inclusion on the BEDD datasheet

The customer will normally specify (i.e. highlighting the cells in Excel) which attributes are BEDD compliant or BEDD initialized and provide any additional tables to include on the 'Master BEDD'.

The customer will provide this information in Excel format.

Simulation to PFD Transfer

Simulation to PFD transfer is the mechanism of importing raw simulation data from AspenPlus, Provision or Hysys, and transferring that raw data to the equipment objects shown on the PFD and specification datasheets. The amount of data transferred for each equipment varies, and additional configuration is required to further enrich some of the equipment with the simulation data.

In this task the customer will highlight the cells on an equipment datasheet that should be derived directly from the simulation data.

The customer will provide this information in Excel format.

Simulation data appearing on Datasheets

The function of this task is primarily captured in the above task. However, in some cases it is not always obvious which simulation data should be displayed on the datasheet. For example if we consider a Vessel with multiple outlets, which outlet stream data is to be shown on the datasheet? This mechanism to populate the data on the datasheet will be automatic but it will be the end user that selects the outlet stream to be shown.

This functionality is provided through rules and any equipment where user input is required, this mechanism of user selection will be used.

The rules will be provided in .NET (Visual Studio 2008 or above) that functions with ABE v7.3 as minimum

Customer PFD's

The ability to capture customer documentation within ABE is a minimum requirement. ABE provides the tools to draft intelligent customer PFD's using the out of the box symbols or customer specific symbols and/or labels.

During the POC workshop 1-2 PFD's will be reproduced in ABE and any symbols/labels not available out of the box will be additionally configured to ensure a high quality deliverable is recreated in ABE.

The customer will typically provide this information in an AutoCAD or Microstation format. Any additional PFD legend that can be provided will also help during this task.

Customer Datasheets

Customer datasheets can be configured such that they can be utilized within ABE. Specifically during the POC workshop one or two process datasheets and/or equipment lists are included in this phase to test the look and feel of the datasheet within the ABE environment.

During the POC workshop these datasheet will be reproduced in ABE. The customer will typically provide this information in an Excel format.

PFD Legend Unit Changes

For some customers the PFD Legend displaying the units, request the ability to change these displayed units thus updating the values on the streams and equipment on the PFD. For example the Legend may display Temperature in Celsius, but changing this value to Kelvin will update all Temperature values on the PFD. This is an example of rules firing automatically when the Legend unit is changed.

This type of functionality is typically required to ensure that the displayed unit and values remain consistent across the PFD and avoid un-necessary transcription errors when a client makes these types of changes. This same functionality can be extended for the Heat Material Balance (HMB) allowing physical properties to be shown in the desired unit.

The customer will typically provide the HMB, border and/or legend label that is to be configured

Calculation sheets

For some customers further testing during the proof of concept phase of importing / exporting to excel calculation sheets is necessary to see the capabilities of the ABE environment. Typically one piece of equipment will be selected for testing. For example, a pump could be selected and the calculated data is expected to appear on the datasheet and any associated equipment list.

This task will be completed using the Bridge application and the customer is required to highlight the exported / imported values on the datasheet and/or equipment list

In this task the customer will highlight the cells on a datasheet and / or equipment list that should be exported / imported from the calculation sheet. The calculation sheet should also be provided and highlighted to indicate the import/ export values

The customer will provide this information in Excel format.

The above is an overview of a typical proof of concept requirements workshop. During the POC phase it provides the customer with ability to assess the ABE environment using their data and to further understand the capabilities of ABE. In the next section, specifics of POC workshops are highlighted.