- 1 -

IPPD
Proof of Concept
Requirements

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 v10.x or above 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 2010 or above) that functions with ABE v10.x 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 poof 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.

IPPD Proof Of Concept (POC) recommendations

Proof of Concept Scope
Typically we would request for 15-18 days (includes onsite visit) scope for the following…

- 1-2 PFDs (electronic format of dwgs and symbols, in AutoCAD or Microstation)
- 2-3 Equipment datasheets, i.e. pump, vessel, S&T exchanger
- 2 Simulations each representing a different process case for the diagram above (AspenPlus, Aspen Hysys, ProII)
- 1 calculation sheet, maybe Pump or Vessel
- Sample Equipment naming - optional
- Sample equipment breakdown (Plant Breakdown Structure) - optional

As a minimum IPPD will analyse the documents above to formulate an ABE workflow resulting in the following…

- All deliverables in ABE format
- Supporting KBs (no source is delivered as part of the POC)
- Simulation data into the PFD environment, HMB, Stream Temps & Press if shown, equipment naming conformance
- Simulation data into equipment datasheets
- Plant Breakdown of equipment
- Export/Import from Calc sheet
- Demo of POC on site

IPPD will give a more definitive effort in days once we have received all of the documentation from the customer and whether they require IPPD to be on site. Typically the customer's documentation will tell us everything we need to know during the POC, thus at this stage no further items are required but we may have further questions after POC kick off. There will normally be a POC workshop on site to install, deploy and present the POC. This effort is additional and with 2 travel days (8 hrs max each way).

All scope items will be outlined in the proposal as Scope of Work and may include all or a subset of the items above. The purpose of the POC is to prove to the customer that this system can be configured to work with their deliverables. In addition we also want to highlight the work process involved using ABE. The POC is not a production deliverable but rather a system to engage the customer with what is possible in the system and what other functionality they would want to capture during a Phase 1 implementation.

As part of the onsite workshop we work with 2-3 ABE Administrators (customers personnel) to highlight the process followed to derive the eventual solution – this is not training, but highlights of the configured system. A demonstration will also be provided to a wider audience.

Most customers choose to adopt a 12-15 day POC with additional onsite workshop, totaling 13-18 days.

Proof of Concept Options
If the customer chooses to only have 12-15 days of POC (which includes on site delivery), then we would request fewer documents, i.e. 1 PFD and maybe 2 datasheets. It really depends on what the customer expect to see in the deliverables using ABE.

From our experience the visionary and technically minded ABE champion will request 12-15 days as they understand what is being achieved, however, a process engineer ABE champion (non technical) would prefer to see more datasheets and more functionality to ensure the system can be correctly configured to align with their expectations.

Project Schedules
Project schedules will be approximately 2-4 weeks from project kick off to POC workshop delivery, but all details are set out in our proposal letter. We may interact with the customers' ABE champion to answer any questions that arise during the POC.

ABE Training
ABE training is not included as part of the POC project scope but can be provided if required at an additional cost. The training material will have to be acquired separately from Aspentech.