HI Electronic Data Exchange

Compliance Self-Testing Procedure

Introduction

To ensure your software systems are compliant with the HI EDE transaction set, the Hydraulic Institute has created an online compliance tool that can read and produce XML documents conforming to the HI Electronic Data Exchange standard (HI 50.7). The procedures below outline how to use this tool to test your software's compliance in both producing and reading XML documents.

Accessing the compliance tool

The compliance tool can be accessed through the HI website at http://www.Pumps.org/EDE. Log in using your HI credentials to reveal the "HI-EDE Subscriber Resource Center" link on the left side of this page.

On the Subscriber Resource Center home page, you will find a link to the "Conformity Assessment Tool". This will open a new window containing the compliance tool interface.

Testing Exported XML Documents

Uploading your data

Your software system produces an XML document conforming to the HI EDE Standard, and thus the cfiXML (Capital Facilities Industries XML) schema. This document can be opened by the HI-EDE Conformity Assessment Tool for testing (Figure 1). Just click the "Import" button to trigger the upload dialog. After importing, choose HI-EDE from the Datasheet dropdown to view the listings.
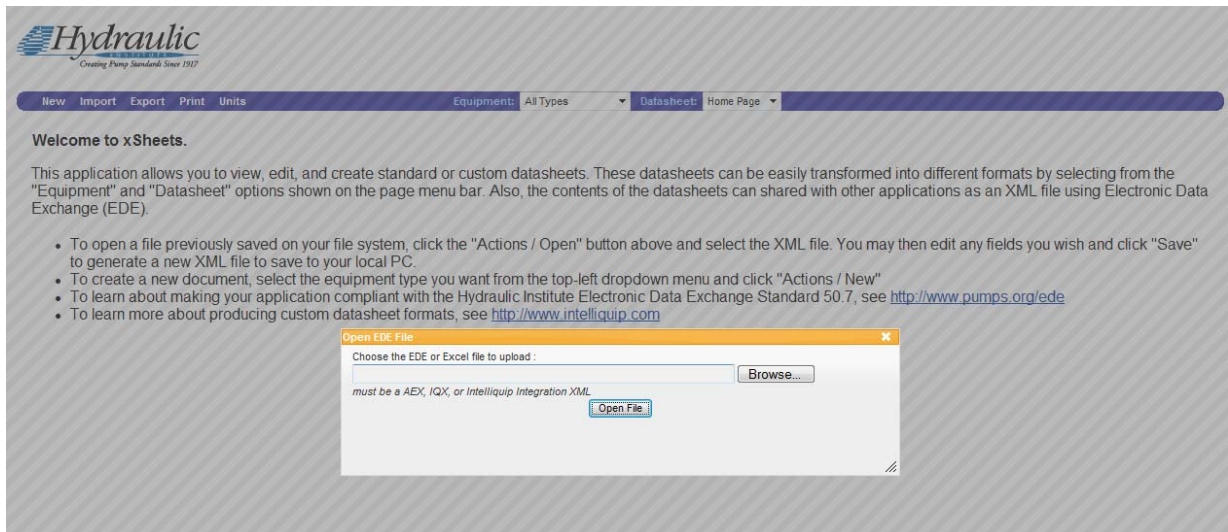

Figure 1: Access the upload dialog by selecting "Import" from the menu.

Ensuring accurate export of fields

For each HI data element the tested software generates, you can ensure through visual inspection that the compliance tool has read and displayed the element. If the compliance tool does not display the data, one of several possibilities exists:

(1) The tested software omitted the information when generating the XML document.

(2) The tested software wrote the data to the XML in a non-compliant format (e.g. invalid picklist choices, non-numeric values where numeric values are required).

(3) The tested software placed the data at an incorrect Xpath, which can be verified using the HI EDE data dictionary's published Xpath set.

Ensuring compliance to RDS levels

In addition to specifying how data is stored (by specifying Xpaths in a cfiXML document), the HI EDE Standard also defines which data elements must be transacted under several usage contexts. The fields are categorized by "Required", "Desired", "Supplementary", and "API". The compliance tool allows the user to manually specify the usage context and the desired RDS level, which automatically filters the visibility of data elements (Figure 2). Through visual inspection, you can verify that the tested software included all fields required to meet the specified usage context / compliance level.

Figure 2: Select usage context and RDS levels

Testing Imported XML Documents

Software systems must be capable of reading XML documents conforming to the HI EDE and cfiXML schema. To ensure your system does this, you can create an XML document by populating the fields you want to test and saving an XML document to your local disk (Figure 3). You can then import this document into your software and perform a visual or automated inspection to ensure that all fields have been accurately read from the XML document.
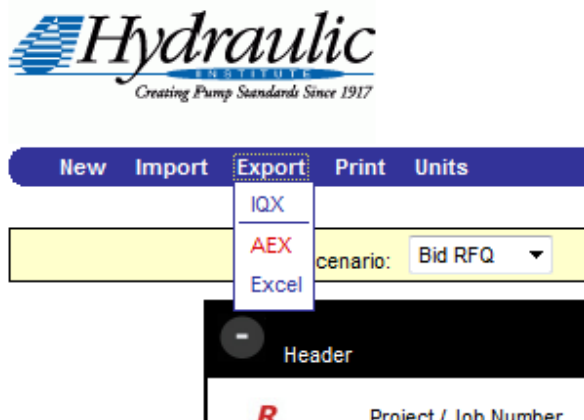

Figure 3: Select AEX to save an HI EDE Compliant XML Document

Automated Testing

While a visual inspection is practical for one-time testing, it is advisable that automated test cases be created for your software system which can test import/export of XML documents without manual intervention.

A typical testing plan may follow the general strategy outlined below:

1) Create a sample XML document with representative data using the HI Compliance Tool. Save the sample document in an accessible place – perhaps naming it hi_sample_input.xml
2) Create a script which instructs your software system to import (consume) the sample document and then immediately export as a second xml document – perhaps named hi_sample_output.xml.
3) Create a script to verify that both the input and output files are identical with respect to their *content*.

Depending on the functionality of the tested software system, the precise procedures for following this strategy could vary significantly.

Achieving Conformity Assessment: Regardless of using a visual or automated compliance testing process, it is your responsibility to self-certify conformity of your software product with the latest version of the HI 50.7 standard.

Branding your Software Product as HI-EDE Compliant: Upon successful completion of a visual or automated compliance testing process, complete the Memorandum of Understanding (MOU) and License Agreement between your company and the Hydraulic Institute. Specify your level of compliance (RSDA), the pump technology and the version of the standard to which you are certifying compliance. Submit the agreement, with appropriate fees, to the Hydraulic Institute. Copies of the MOU and License Agreement are available at the HI-EDE Subscriber Resource Center or when you pay your license fee online at the HI eStore. Once you have completed these steps, your company will be listed on the HI website with all HI-EDE Compliant software products.

HI-EDE Compliant Logo: After successfully completing the HI-EDE conformity assessment process and returning a signed MOU and License Agreement along with appropriate fees, your company is authorized to use the HI-EDE Compliant Logo on your website, in your software product, on company-specific data sheets, or in your product literature for the term of your license agreement.