

XML DR - Pydro User's Guide

June 2011

**Office of Coast Survey
Hydrographic Surveys Division**

Table of Contents

XML DR Pydro Users Guide.....	3
1 Introduction.....	3
2 General Information.....	3
2.1 Installing Pydro	3
2.1.1 First Time Pydro Install	3
2.2 Starting the XML DR Application.....	4
2.3 Importing XML Project Instructions (PI).....	5
2.4 Blue Text.....	6
2.5 Completing a Document.....	6
2.5.1 Data Entry	6
2.5.2 Optional Elements.....	6
2.5.3 Spell Check	7
2.5.4 Default Text	7
2.5.5 Attaching Images	7
2.6 Saving an XML Document	7
2.7 Validating a File.....	9
2.8 Printing the XML Document.....	9
2.9 Signing and Validating.....	11
2.10 Archive	11
3 Project Instructions	12
4 Descriptive Report	12
4.1 Tabs	12
4.2 Importing Pydro Line Statistics	12
4.3 Comments Boxes.....	14
4.4 Approval Sheet – Signing Personnel.....	14
5 Data Acquisition and Processing Report	14
5.1 Tabs	15
5.1.1 Metadata.....	15
5.1.2 Equipment.....	15
5.1.3 Quality Control	15
5.1.4 Corrections To Echo Soundings	15
5.2 Adding Additional Discussion and Field Comments.....	16
5.3 Attached Files.....	16
6 Horizontal and Vertical Control Report.....	16
7 Providing Feedback to the XML Metadata Team.....	17
8 Frequently Asked Questions (FAQ)	17

XML DR Pydro Users Guide

1 Introduction

XML DR is a Python-based user-interface, used to generate Project Instructions (PI), Descriptive Reports (DR), Data Acquisition and Processing Reports (DAPR), and Horizontal and Vertical Control Reports (HVCR). XML DR saves these reports as an XML file, and also can output PDF and RTF documents from these files.

2 General Information

The following information applies to all documents, created with the XML DR application.

2.1 Installing Pydro

Pydro (v 11.3 or higher) is required to be installed in order to use the XML DR application. The latest version of Pydro can be found on the [HydroSoft website](#). Download and install the latest version of the Pydro Setup file. *A Pydro license is not required to run the XML DR application.* Pydro **must** be installed to the (default) C:\Program Files directory:

C:\Program Files\Pydro

2.1.1 First Time Pydro Install

If this is your first time installing Pydro on your PC, you will need to request a license. To request a license, open up the Pydro main application (Start > Programs >Pydro), and click “cancel” when you are prompted for a license. The Pydro interface will then open. To request a license, go to:

File > Email for License

This process generates a Pydro ticket, and a license will be emailed to you shortly. The Pydro license requires the computer's MAC address, which should be submitted with the Pydro ticket. Alternatively, you can email your MAC address directly to hstp.help@noaa.gov. The subject line of the email should indicate that this is a Pydro License Request, and should include the Pydro version number (e.g., v11.2).

To find the computer's MAC address, use the following workflow:

1. Open a command shell: Start > Run > cmd
2. In the command shell, enter the following: ipconfig/all
3. The computer's MAC address is indicated under “Physical Address”, e.g., 00-24-E8-3E-BF-FD.

2.2 Starting the XML DR Application

The XML DR application is started from the Pydro folder in the Windows **Start** menu. To open the XML DR, navigate to:

Start > Programs > Pydro > XMLDR

This will open a new window displaying the XML DR application.

A sub-menu for each document can be accessed through the XML DR file menu. To create a new document, choose **New** in the appropriate sub-menu (Figure 1). For example, to generate a new Descriptive Report (DR), navigate to:

File > Descriptive Report > New

This will open a blank, editable form, as seen in Figure 2. Note that there are several tabs along the top of the form, corresponding to different sections, which must be completed.

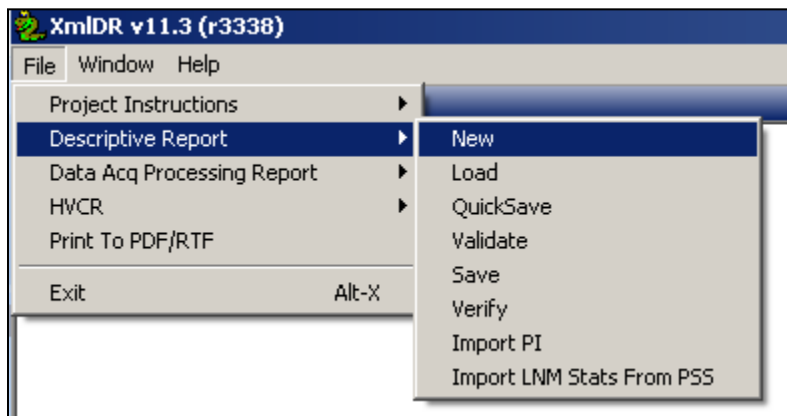


Figure 1. Descriptive Report Sub-menu.

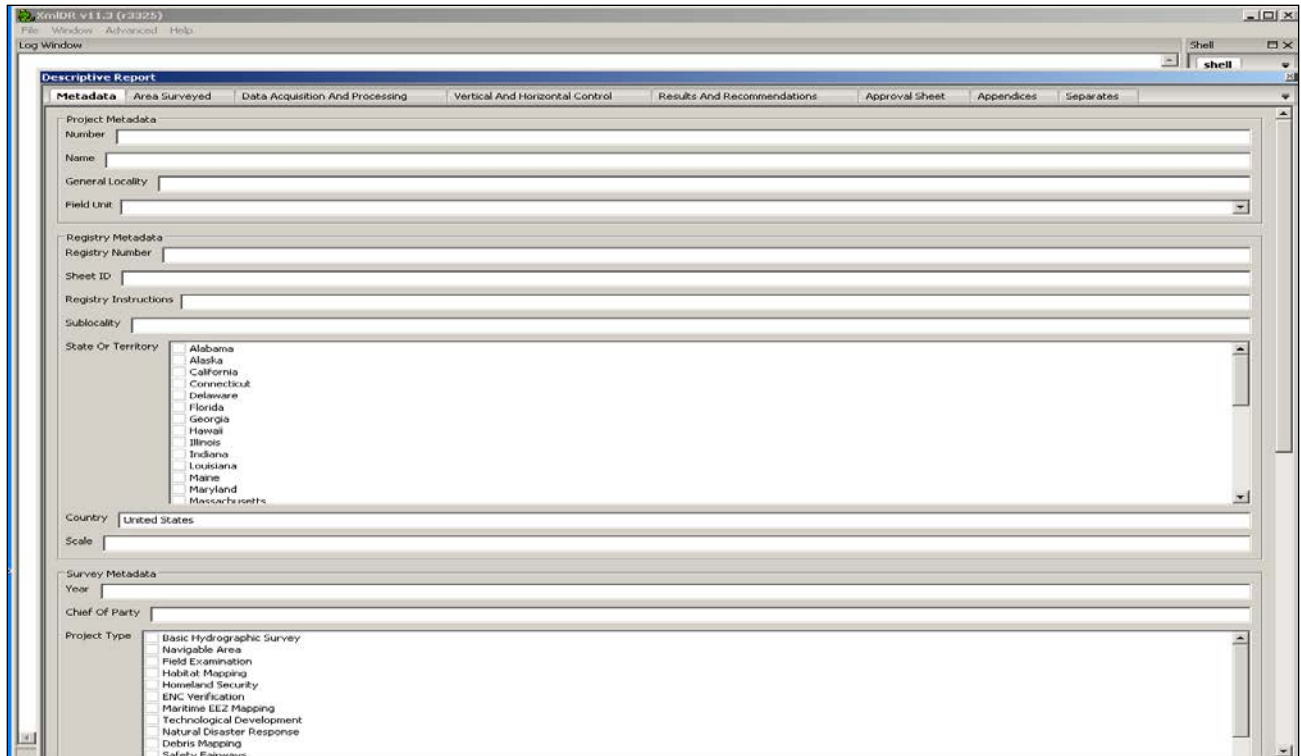


Figure 2. Opening a New Document.

2.3 Importing XML Project Instructions (PI)

The versatility of XML allows for the import of data from one document into another. Currently certain metadata from the PIs can be imported into both the DR and the HVCR.

Once a new DR or HVCR has been opened, navigate to the appropriate document and choose **Import PI**. For example, to import the PI into the DR, choose:

File > Descriptive Report > Import PI

You will be prompted to navigate to the appropriate PI file. Once you've selected the PI .xml, you must select the appropriate Sheet ID as seen in Figure 3. The sheet ID is the sheet priority number that was assigned to each sheet in the project area. Several fields in the Project Metadata and Registry Metadata sections should now be populated. You may manually edit fields as necessary. For example, sheets not originally assigned registry numbers in the PIs will be listed as HXXXXX, and should be manually updated.

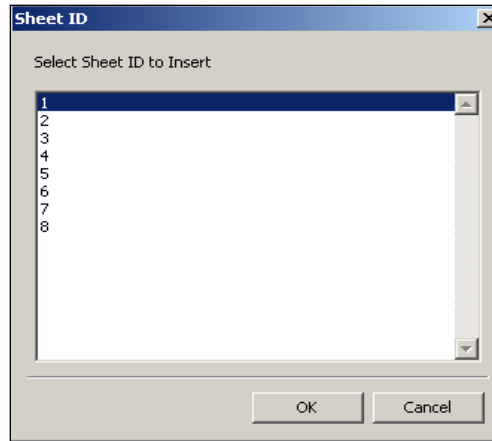


Figure 3. Importing Project Instructions into the Descriptive Report - be sure to select the appropriate field sheet to populate the DR with the correct associated metadata.

Once the .xml PIs have been loaded into the document, begin entering in the necessary information to complete the DR.

2.4 Blue Text

Blue text can be found throughout the XML DR forms. This text provides helpful advice for completing the forms and was often extracted directly from the HSSDM.

2.5 Completing a Document

2.5.1 Data Entry

There are various methods for entering data in the XML form: entry strings, free-flow text, check boxes, radio buttons, and drop down lists.

In general, all radio buttons are required to be addressed. Additional fields may also be spawned, based on which choice is selected.

Most drop-down lists are user-editable. If one of the choices is not applicable, click the field and begin typing. However, it is important for data stewardship to attempt to use the provided choices if possible. If you find that you regularly use a choice, not provided in the form, notify the XML DR team so it can be added in the next version.

Most free-flow text is nillable, meaning that it can be left blank if desired.

2.5.2 Optional Elements

Many elements, such as images, attached files, Junctions, Charts, etc., are optional. These elements can be added by clicking the Add ... (**Add Images**, **Add Charts**, **Add Junctions**, etc.) button. The **Add ...** button will append an entry to the end of the existing list. Once an element has been added, additional entries can be added to the beginning of the list, by using the **Insert** button. Individual entries can be deleted by using the **Remove** button.

2.5.3 Spell Check

The XML DR application uses the Pydro spell checker. Several commonly used terms and acronyms have been added to the spell checker's dictionary. Note that the spell checker is not employed on *string* fields. Therefore, it is still the user's responsibility to check the final document for spelling errors.

2.5.4 Default Text

Default text may be added to some fields, based on radio button selection. This text is completely user-editable. "Negative" radio button selection may also create default text to be output in the reports, which may not be visible in the form. For example, Selecting "No" to "Were any Danger to Navigation Reports Submitted?" will generate a statement in the DR that reads "No Danger to Navigation Reports were submitted for this survey."

Please contact the XML DR team with any suggestions for additions or modifications to the default text.

2.5.5 Attaching Images

To add images, simply click the **Add Images** button. In most cases, images are not required. Multiple images can be added to most sections.

All attached images must include a Figure Number (**number only** – do not include the label "Figure"), a caption, and a link to the file. Future functionality may allow for auto-generation of the Figure Number.

A thumbnail of the image will appear next to the link. See Figure 4.



Figure 4. Attaching Images.

2.6 Saving an XML Document

There are two options for saving an XML document: **Save** and **Quick Save**.

Quick Save should be used to save an unfinished document, where all of the required fields have not been entered.

Save should be used to save completed documents where all of the required fields have been entered. If you use this option on an incomplete document, you will receive a message warning that the XML cannot save to a validating file (See Figure 5). This simply means that all required fields have not been entered and the XML file cannot be validated against the schema. You will then be prompted to **Quick Save** your file instead.

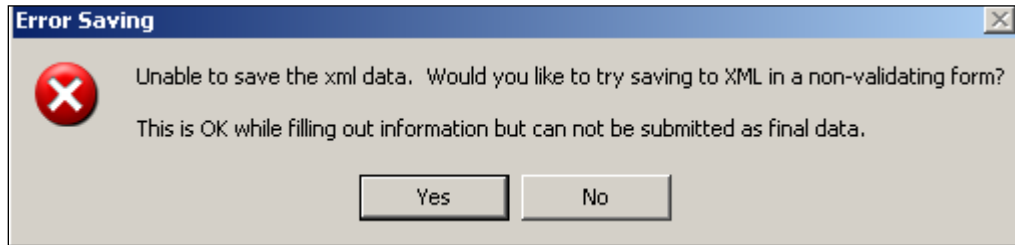


Figure 5. Error message encountered when using the Save option for a non-validating .xml file.

Save and Quick Save are both accessed through the document sub-menus (See Figure 6). Using the DR and an example, navigate to:

File > Descriptive Report > Quick Save

or

File > Descriptive Report > Save

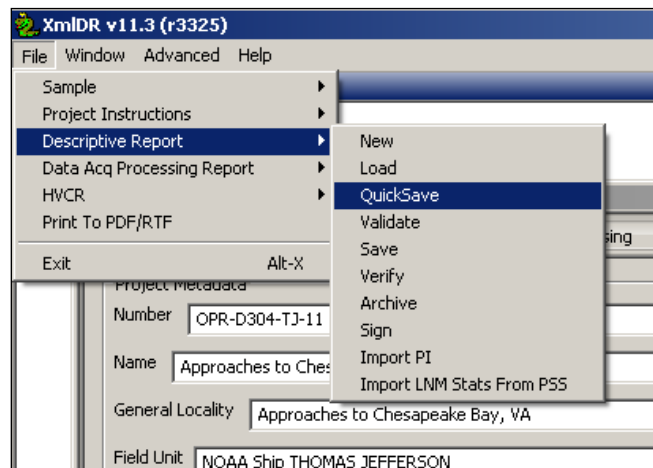
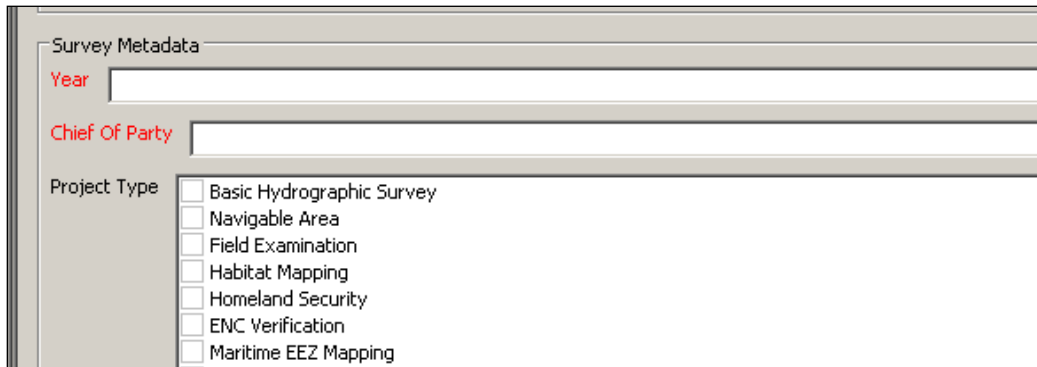


Figure 5. Quick Save option for saving a partially completed document.

2.7 Validating a File

Prior to saving your file, you may wish to check whether all of your required fields have been entered and your XML validates against the schema. To do this, choose **Validate** from the document sub-menu. As you go through your form, you may notice that some of the element fields will turn red. The red text indicates fields that are required to be filled out before the file can be validated (See Figure 7). *Please note that boolean functions do not highlight in red when not properly filled out. Therefore if you receive an error message indicating that the .xml file will not validate, please be sure to check all that all radio buttons have been addressed.*



The image shows a web form titled "Survey Metadata". It contains three main sections. The first section is "Year", with a text input field that is highlighted in red. The second section is "Chief Of Party", with a text input field that is also highlighted in red. The third section is "Project Type", which contains a list of radio button options: "Basic Hydrographic Survey", "Navigable Area", "Field Examination", "Habitat Mapping", "Homeland Security", "ENC Verification", and "Maritime EEZ Mapping".

Figure 7. Once Validate is utilized various elements will turn red in color indicating that the required field has not been filled in properly within the document. In this document the 'Year' and 'Chief of Party' are required in the document, but have not been properly addressed.

It is important to note that the .xml file can be saved anywhere in your file folder structure and can also be emailed or moved from one location to another. Because the files can be opened anywhere be mindful that there are not duplicate copies in circulation, and be sure to note which files will be utilized to produce a final deliverable to ensure file management best practices.

2.8 Printing the XML Document

Once the XML file has been validated and saved, it can be output to PDF format. To do so, open the Print DR utility (Figure 8):

File > Print To PDF/RTF

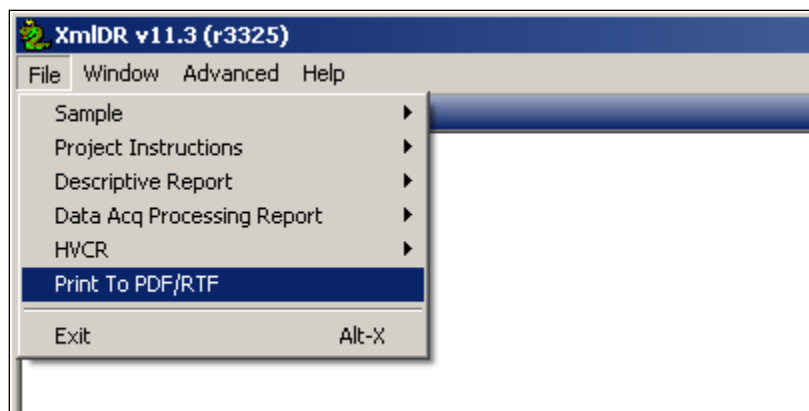


Figure 8. Selecting the Print to PDF/RTF file.

The Print DR dialog box will open, and you will be prompted to select your XML file (Figure 9). If you want to view the generated PDF file upon completion, click “View file when done”. To create a PDF, select “Create PDF”. (**Note: RTF format is no longer supported for the XML reports**). When prompted, browse to the report’s corresponding XSLT file:

C:\Program Files\Pydro\Lib\site-packages\HSTP\xmlDR\schemas\final

Note that each document has its own associated XSLT file. *Be sure to choose the corresponding XSLT file for the report you’re trying to print.* In future versions of the XML DR software, the XSLT file will be selected automatically.

Descriptive Report: DR_Stylesheet.xslt
Horizontal and Vertical Control Report: HVCR.xslt
Data Acquisition and Processing Report: DAPR.xslt

After selecting the XSLT file, the PrintDR utility will generate the PDF file, saving it to the same directory as the input XML file. The PDF generation process will take a few moments, as the PrintDR utility runs two separate applications to produce the PDF.

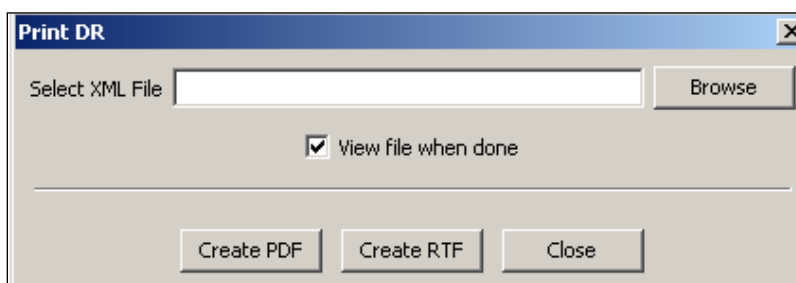


Figure 9. Print GUI prompts the user to navigate to the appropriate .xml file to print the document.

If you experience difficulties printing to PDF, please ensure that you have Java Runtime Environment (JRE) installed on your machine. JRE is required to run the Apache FOP, which the PrintDR utility requires. Instructions for verifying the presence of JRE are included in the **FAQ** at the end of this User Guide.

If JRE is installed on your machine but the XML file still won't print, make sure that you have the main Pydro folder installed to the following (correct) location:

C:\Program Files\Pydro

2.9 Signing and Validating

TBD -- Functionality Pending

Completed XML documents can be signed by the appropriate personnel (Figure 10). Signed documents can then be validated for completeness and authenticity. To sign an XML document, navigate to:

File > Descriptive Report > Sign

To verify a signed document, navigate to:

File > Descriptive Report > Verify

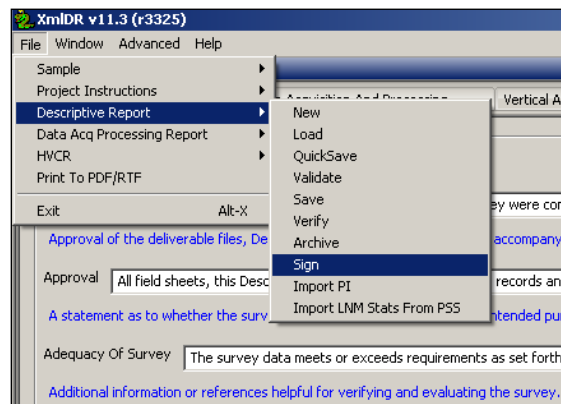


Figure 10. Signing an XML file.

2.10 Archive

TBD – Functionality Pending

The next version of the XML DR application will include functionality for archiving (packaging) the XML documents with all attached images and files. Until this functionality is available, you should keep all attached files in a subfolder of where your document is stored, to allow for easy zipping and transmittal.

3 Project Instructions

To be completed.

4 Descriptive Report

The following sections describe functions and issues that are specific to the DR.

4.1 Tabs

The first tab of the form includes Project and Survey specific metadata, as well information used to generate the Title and Cover sheet. The next five tabs correspond to Sections A-E of the DR, as specified in the HSSD: Area Surveyed, Data Acquisition and Processing, Vertical and Horizontal Control, Results and Recommendations, and Approval Sheet. The final two tabs provide a location to attach Appendices and Separates.

Currently, attached PDF files will not be output with the DR into a single PDF. You will still have to concatenate them in Adobe Acrobat. However, attaching your files here will allow for them to be included in the archive. You should avoid attaching any files that already exist in the main project data directory.

4.2 Importing Pydro Line Statistics

A Pydro license is required to run this application, as you will be importing HIPS/SIPS lines into Pydro. (See Section 8 for guidance on how to obtain a Pydro License.)

Step 1. Import processed survey lines into Pydro.

Start Pydro and navigate to:

Data > (Re)Insert > HIPS/SIPS Survey Lines (Figure 11)

Browse to and select the appropriate survey lines. (You must use the *FieldUnit_Hull#_Equipment* (ex. TJ_S222_Reson7125) directory naming conventions, as describe in section 5.1.2.2.2 of the FPM.)

Classify your lines by both mode and type. This can be modified for individual lines by navigating to:

Data > Stats > Survey Line Info

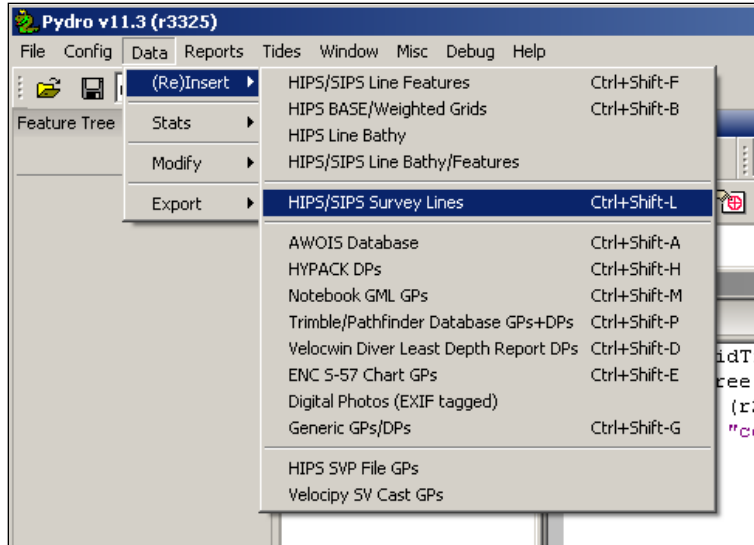


Figure 11. Importing Processed CARIS lines into Pydro.

Step 2. Step 2: Save the PSS

Step 3. Step 3: Import the PSS into the XML DR

Open the DR document in the XML DR application. Navigate to:

File > Descriptive Report > Import LNM Stats From PSS (Figure 12)

You will be prompted to browse for your PSS file.

Step 4. Step 4: Verify that the line stats have been correctly imported into the statistics section of the DR.

Values should exist for Survey Dates, LNM Statistics for each vessel, and Total Survey LNM. Currently a bug requires you to enter “0” for both **Mainscheme Lidar** and **Lidar Crosslines**. This should be addressed in the next version.

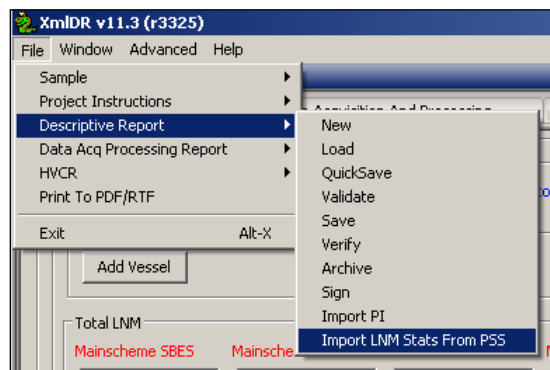


Figure 12. Importing LMN statistics into the DR GUI.

4.3 Comments Boxes

Both **Field Comments** and **Branch Comments** can be added to the XML DR (see Figure 13). Multiple comments can be added to most sections. To add a comment, click on the appropriate **Add Comment** button.

Field Comments are intended for internal use only, as discussion/review between field party members during field review. Field Comments will not be retained in the final printed RTF/PDF document and should not be retained in the archive XML file. Future functionality will allow the Field comments to be removed during the archive process. However, in the meantime, it is important to delete any field comments prior to submission to the processing branch.

Branch Comments will be retained in the .xml files as 'red notes', which will appear in the final RTF/PDF document. All Branch Comments will be retained with the archived XML file.

The screenshot shows a web interface titled 'Comments'. It is divided into two main sections: 'Field Comment' and 'Branch Comment'.
 The 'Field Comment' section includes a 'Comment' text area, an 'Initials' text area, and 'Insert' and 'Remove' buttons. Below this is an 'Add Field Comment' button.
 The 'Branch Comment' section includes a 'Concurrence' section with radio buttons for 'Concur' (selected), 'Do not concur', 'Concur with clarification', and 'Comment Only'. Below this is a 'Comment' text area, an 'Add Images' button, and 'Insert' and 'Remove' buttons. At the bottom of this section is an 'Add Branch Comment' button.

Figure 13. The comments boxes are both expanded in this image. If no comments are necessary, then click on the remove button. Please note that Field Comments will not be retained in the .xml once a validating file is signed and verified. All branch comments will be retained in the final documentation as 'red notes'.

4.4 Approval Sheet – Signing Personnel

Fields for Signing Personnel are included in the Approval Sheet Tab. The name and title of each person approving the document should be entered here. This information will be used to generate a table of signing personnel in the RTF/PDF document. Signing Personnel will then need to digitally sign the final PDF. Note that this is not the same as electronically signing the XML file, which will be included as future functionality.

5 Data Acquisition and Processing Report

The Data Acquisition and Processing Report (DAPR) is an annual report that shall be produced once per survey season, with subsequent DAPRs issued by NOAA field units upon effecting a significant change to any items in the report. Refer to HSSD 8.1.5.1 for further guidance.

The following sections describe functions and issues that are specific to the DAPR.

5.1 Tabs

The DAPR is divided into four tabs that include basic report metadata (Metadata), as well as sections A-C of the DAPR (Equipment, Quality Control, and Corrections To Echo Soundings). The content within each of these sections is described in further detail below.

5.1.1 Metadata

The Metadata tab of the DAPR form includes specific metadata related to the field unit and DAPR version. Indicate the Year, Field Unit, Chief of Party, and Publish Date. For the first DAPR produced each field season, assign a Version of 1.0. For all subsequent amended DAPRs produced during the field season, the Version number should be incremented accordingly (e.g., 1.1, 1.2, etc.). In a future version of the XML DR software, the information retained in the Metadata tab will be used to populate the DAPR Cover Sheet. For now, the user will have to generate their own Cover Sheet.

5.1.2 Equipment

The Equipment tab of the DAPR includes vessel and hydrographic systems metadata as specified in the HSSD 8.1.5.1. This tab includes discrete sections for: survey vessels, echo sounding systems, manual sounding systems, positioning and attitude systems, sound speed equipment, horizontal and vertical control equipment, computer hardware and software, and bottom sampling equipment. Where applicable, the user shall input serial numbers and equipment specifications.

Where applicable, the user shall attach the following reports. All files shall be attached in PDF format.

- Echosounder system accuracy test reports
- POS MV GAMS calibration reports
- POS MV controller configuration reports
- Sound speed sensor calibration reports

5.1.3 Quality Control

The Quality Control tab includes metadata related to data acquisition and processing; quality management; and uncertainty and error management.

5.1.4 Corrections To Echo Soundings

The Corrections To Echo Soundings tab includes metadata related to all corrections applied to echo sounding data, either in real-time or post-processing. This tab includes discrete sections for: vessel offsets and layback, static and dynamic draft correctors, system alignment (i.e., patch test) correctors, positioning and attitude correctors, tides and water level correctors, and sound speed correctors (surface sound speed and sound speed profiles).

Where applicable, the user shall attach the following reports. All files shall be attached in PDF format.

- Vessel offset and layback reports
- Dynamic draft reports
- System alignment (patch test) reports

5.2 Adding Additional Discussion and Field Comments

Each section of the DAPR includes a section where the user can input additional discussion, additional images, and/or field comments. The additional discussion and images will be retained in the final PDF deliverable, but the Field Comments will not.

The Field Comments functionality allows field users to comment back and forth to one another. These field comments are not retained in the final PDF deliverable, but for now are retained in the XML. In order to delete these field comments, the user must manually delete them from each section before finalizing the XML document to send to the Hydrographic Branch. Note: future versions of the XML DR software will include a button that automatically deletes all Field Comments before sending the XML deliverable to the Hydrographic Branch.

5.3 Attached Files

Currently, attached PDF files will not be output with the DR, DAPR, or HVCR into a single PDF. You will still have to concatenate them in Adobe Acrobat. However, attaching your files here will allow for them to be included in the archive package produced by the XML DR software. You should avoid attaching any files that already exist in the main project data directory.

6 Horizontal and Vertical Control Report

The following sections describe functions and issues that are specific to the HVCR. The HVCR is project specific, so all sites and techniques employed for the entire project area must be accounted for in the document. The DR will allow the user to specify which sites and techniques were utilized for a particular survey area within the project.

The first tab of the form includes Project and Survey specific metadata, as well information used to generate the Title and Cover sheet. As mentioned in [Section 2.3](#), the PIs can be loaded into the HVCR at the beginning of the data entry process for the document.

The following tab is the **Sites** tab. The purpose of this tab is to enter in all site specific information pertaining to both horizontal and vertical stations. The **Sites** tab is broken into *Non-User Installed* and *User Installed* sites. Development is currently underway to provide the

functionality to have the PIs populate the *Non- User Installed* site information; however, for now this information must be manually entered. In some cases there may not be any *User Installed* sites that pertain to the survey, if this is the case please indicate that the control was not established by indicating the appropriate radio button. Additionally, any Opus, Field Observations Logs, and Quality Control Reports are attached in the *User Installed* section.

The **Techniques** tab asks the user to provide information based on the methods utilized for the establishment of vertical and horizontal control for the survey area. At least one method must be selected for both vertical and horizontal control; although more than one method can also be selected for each type.

The final tab is for the indication of the final approval of the document. This section must be filled out before a validating .xml file can be produced.

Currently, attached PDF files will not be output with the HVCR into a single PDF. You will still have to concatenate them in Adobe Acrobat. However, attaching your files here will allow for them to be included in the archive. You should avoid attaching any files that already exist in the main project data directory.

Future functionality will allow the HVCR to be loaded into the DR and populate some of the relevant fields (e.g. Vertical and Horizontal Control section found in the DR).

7 Providing Feedback to the XML Metadata Team

You are encouraged to provide feedback as to the usability, functionality, and comprehensiveness of this product. To provide feedback please email the XML team at: xml.dr@noaa.gov. We will take all suggestions under consideration; please do not hesitate to send us your requests and feedback so that we can continue to improve this product for you and others.

8 Frequently Asked Questions (FAQ)

What does the field receive from Project Managers at HQ?

The field should receive both the XML and PDF versions of the project instructions, along with any attached images or appendices.

What is submitted to the Branch?

In addition to the Hydro Survey package traditionally delivered to the Branch, you will provide them with all finalized XML files for the DR, HVCR, and DAPR as necessary. You will also continue to provide them with signed PDF documents of those corresponding files.

What is the difference between Field Comments and Branch Comments?

- Field Comments are for internal ship use only and should not be a part of the final delivery package to the branch.
- Branch Comments are to be filled in by the appropriate branch personnel only – these comments will be retained in the archived XML file and output as ‘red notes’ in the printed RTF/PDF document.

How do I open completed documents (PI, DR, HVCR, DAPR)?

To open completed XML files in the XML DR application, navigate to Load in the document sub-menu:

File > Descriptive Report > Load

You will then be prompted to browse to your XML file.

How do I install Java Runtime Environment (JRE) on my machine, since this is required to use the PrintDR GUI?

If you have Internet access on the machine, you can click on the following link to test whether you're running JRE:

<http://java.com/en/download/help/testvm.xml>

Otherwise, if you don't have Internet, you can search for the Java directory under C:\Program Files.

If you aren't running JRE you will need to download it. You can do so via this link:

<http://java.com/java/download/index.jsp?cid=jdp121116>

What if the PrintDR GUI still won't work?

If the PrintDR GUI still won't work, open the command shell window that runs with the XML DR software. If you see an error message that indicates the .fo file cannot be found, then the PrintDR GUI is not able to find one or more required files (XML, XSLT, XSD) to run the engines that print to PDF. This often occurs when Pydro isn't installed to the default directory. In order for the PrintDR GUI to function, Pydro must be installed to the following location:

C:/Program Files/Pydro

Where can I look for upcoming functionality?

A list of XML DR issues, along with their priority and status can be found on [Port of Call](#). The list is located by navigating to:

OCS Port of Call > HSD > XML DR > XML DR Issues

You can also add issues to this list. Please be sure to add a detailed description of the functionality you would like to see in the GUI, so the XML team will be able to better understand and meet your needs. Please note that not all requests will be applied, but each request will certainly be given serious consideration.