

ChartManager Update History

Version	Date	Description of Changes to the ChartManager Program
1.3.12	2-Jul-15	First complete version documented by YouTube tutorial.
1.3.13	5-Jul-15	Eliminated the use of FileSystemObject to process the catalogue files. Corrected error in getting the date time of the dowloaded chart. Used local time, now GMT.
1.3.14	26-Jul-15	Correct date/time of chart file on PC to remove UTC adjustment (times appear to be UTC). Added Zip File date/time to RNC display. The date/time on the PC files appear to be the date/time of the file in the Zip File, not. the date/time the file was unzipped and written to the chart directory. There are still anomallies in the date/time of a few downloaded files.
1.4.0	5-Nov-15	Fixed the file download cancel function and added a completion monitor (%) to the download form.
1.4.1	7-Nov-15	Fixed a problem when a file download aborted or was cancelled. If the download started and then aborted, an incomplete file is left as the destination file. This is not a problem for a chart download as temporary incomplete file. However, if the chart catalogue download was aborted or cancelled the incompletdirectory in which the zip files are downloaded is deleted without attempting to open the catalogue xml file remained on the hard drive and would cause a program exception if the program attempted to open it. The change in this version insures that the resultant file from any aborted or cancelled download is deleted.
1.4.2	5-Dec-15	The bFileDownloadStatus value was not being set to False when a chart download was cancelled. This caused a program loop through the MsgBox notification of the download cancel. This error has been fixed, but the MsgBox is still displayed twice for a single cancel. Haven't found the cause of this error, but the program no longer goes into a loop.
1.4.3	3-Jan-16	The Source Date field in the RNC Chart display form was actually the NTM Date.
1.4.4	3-Jan-16	Changed installation process to online.
1.5.0	10-Jan-16	Expanded the display of the chart data from the catalogue in the RNC Chart Catalogue form. Added filter. Activated the diplay of the Update History log file from the About menu. options for the Source Date and NTM Date. Currently the values are compared to the date of the BSB file on the computer. Eventually the values will be compared to values in the BSB file. Need to parse that text file to capture those values. Previously the date of the BSB file was compared only to the zip file date in the catalogue. The zip file date comparison will still be available until I determine the best comparison to determine if an chart update is available.
1.5.1	11-Jan-16	Modified the ENC chart data display form in a similar way to the RNC form. Still needs a lot of work.
1.5.2	11-Jan-16	There were still problems in the filters for dates in the RNC and ENC chart catalogue data forms. I think those problems are now resolved. Discovered there are still problems with the download cancel process. I'll try to fix that in the next version.
1.5.3	15-Jan-16	Modified the RNC Chart Library Form to allow the download of a single chart selected from the drop down list. Added the feature to display the chart in the default web browser using the NOAA online chart viewer. For both the RNC and ENC Chart library forms, moved the exit from the "Close" button to "Exit" menu item at the top of the form.

ChartManager Update History

Version	Date	Description of Changes to the ChartManager Program
1.5.4	16-Jan-16	Parsed the BSB file for the RNC Edition Nr, Source date, NTM nr, and NTM Date. Changed the Source and NTM edition nrs in the catalog display to the "last_correction" values in the catalog. These values appear to be the latest for which a correction to the chart was made. If the source and NTM nrs in the BSB file are equal or greater than these numbers in the catalog then the chart on the PC is up-to-date (if I'm correct). For now using the source date to establish whether or not the chart is current. Need more checking before changing the criteria. Added the single chart download and the display chart online features to the ENC library. The chart display is of the equivalent RNC chart (Source Chart on the form). Moved the buttons to display the RNC and ENC chart library forms from buttons on the main form to the "Charts" menustrip. The Exit ChartManager is now in the "Charts" menu. The menu item for "Chart Groups" has been added, disabled for future development.
1.6.0	17-Jan-16	Added formChartGroups to create and maintain subsets of the Chart libraries as Chart Groups that can be used in OpenCPN or other chart plotting software packages that can work with a chart library in multiple folders. Until this form is function the menu item that initiates the form will be visible, but disabled. The initial design approach is to maintain the overall chart library in a basic set of folders, one for each chart catalog (ENC, RNC, IENC). The Chart Groups will be maintained in separate folders and will contain copies of the charts from the master folders. The Chart Groups can contain both ENC and RNC charts and can be defined for geographical areas such as CG district, State, Region, and by latitude and longitude boundaries - a single point, a line, or a rectangle. I've also added a disabled menu item for a IENC (inland USA) chart library.
1.6.1.0	21-Jan-16	This is a preliminary release of the chart group process. The chart groups are defined by specifying a folder in which the group charts will be stored and a set of criteria that are used to select the charts for the group from the master chart library. The chart group function is working, but not fully tested and there are a few enhancements that are still needed, but it does work.
1.6.2.0	24-Jan-16	Added process to delete a group from the group list. That action will cause the group folder and its contents to be deleted as well. Changing the selection criteria will delete all the charts (subfolders) in the group folder, but the group folder will remain.
1.6.2.1	24-Jan-16	Added menu item to copy the Chart Groups xml file to a user specified directory. This is necessary because the file is created in the program directory, which is not easily accessed by the user. This allows the xml file to be inspected for debugging the program in the user environment. May change this file location in the future. Implemented the Area chart selection feature for Chart Groups. This feature checks each panel in each chart in the catalog to see if the panel and the area criteria intersect. Currently this process converts each panel area into a rectangle that includes all of the vertex points for the panel. Then program compares the rectangle vertices against those of the the area criteria. If either rectangle is north or east of the other, then the rectangles do not intersect. Otherwise there is an intersection.

ChartManager Update History

Version	Date	Description of Changes to the ChartManager Program
1.6.2.2	27-Jan-16	Added the Download Missing function to the Chart Group form. Added the filter option for RNC charts to select only those charts that are missing from the PC chart library. I am not yet using the source and the NTM dates in the *.BSB file to compare with the catalog values and determine if the chart is out of date. I'm currently comparing the source and NTM dates from the catalog with the last modified date for the *.BSB file. I need to use the values the program parses from the *.BSB file.
1.6.2.3	3-Feb-16	Modified the BSB parse routine to capture all of the significant values in the BSB file. Now the file date comparisons for RNC charts use the source and NTM dates in the BSB file rather than the last modified date for the BSB file. The zip file date comparison still uses the last modified date. I believe the source date is the correct value to determine if a later chart represents an updated chart with new data or just an administrative update with no significant changes. While working on this update I learned that the LNM and NTM updates for the RNC charts are not just administration updates. the KAP file lists the light and marker changes for each chart, and they are reflected in the chart image. So the NTM date and zip file date appear to be the primary determinates that a chart has been updated. The source edition and edition date do not necessarily change when a new version is released for NTM/LNM changes. I've also found that not all of the light and marker changes listed in the KAP file are actually reflected in the chart as displayed by OpenCPN.
1.6.3.0	7-Feb-16	Completed the Download Missing Chart feature. The selection of charts for which there is an update available will not include missing charts - charts that have not been downloaded to the PC. The check box for missing charts will not include those that are on the PC. To select both charts with updates and those that have not been download, check both the "Update Available" and the "Chart Missing" boxes. Added Tool Tips to most of the buttons on the main forms.
1.6.3.1	8-Feb-16	Added the Chart Format (e.g., Harbor Chart) to the RNC catalog display and made it a chart selection option. This is not really an important tool
1.6.3.2	10-Feb-16	Added count of updated charts to the display data for each chart group. Modified the download button process to download both missing and updated charts. Now the chart library can be maintained totally within the Chart Groups form rather than the RNC and ENC catalog forms.
1.6.3.3	14-Feb-16	Parsed the navaid changes in the RNC KAP files and displayed the info in the RNC form. Not sure how useful this information is, but it's on further step in understanding the content of the RNC files.
1.6.3.4	15-Feb-16	Added text box in Chart Group form for the the path and name of the xml file that contains the Chart Group definitions. This was previously hidden from the user and stored in the same folder as the program executable element. The form also allows the user to change the location of the xml file, but not the name of the file ("ChartGroup.xml"). If the user specifies a new location for the file that contains a file named "ChartGroups.xml" the contents of that file are loaded into the program and the contents of the previous file are discarded. If there is no "ChartGroups.xml" file in the new location, the contents of old file are copied to the new location. The default location of the file is in the parent directory of either the RNC or ENC chart library.

ChartManager Update History

Version	Date	Description of Changes to the ChartManager Program
1.6.3.6	16-Feb-16	Add feature to the RNC form to export the navaid changes for a selected KAP file to a GPX file. The navaid are saved as waypoints that can be imported into OpenCPN or other chart plotter systems and display the navaid change on a chart. Another feature that probably has little value, but ... XMLNotepad sometimes objects to the created files, but OpenCPN doesn't seem to have a problem. This feature might be more useful if OpenCPN organized waypoints into groups so these waypoints could be easily hidden or deleted without having to pick through any existing waypoints. Added area coordinates in the group display to show the rectangle that encompasses all of the charts in the group Added check in Chart Groups to detect that a group needs to be regenerated and gives the user the option to perform the generation or do it another time.
1.6.3.7	21-Feb-16	Corrected the RNCStatus subroutine to use the zipfile date to determine if a later chart is available. It was using the source date. The Update Available checkbox was working correctly, just the status display was incorrect. The same function for ENC charts was correct and is unchanged. Added Enhancement Plans in a text file displayed via the About Menu. Added a link to the web page for ChartManager in the About Menu.
1.6.3.8	24-Feb-16	Reconfigured the main form to use pae tabs to separate the RNC and ENC file info. This was done to prepare for the addition of more chart types (e.g., IENC). It also reduces the main form width.
1.6.3.9	24-Feb-16	Added tab to main form to specify the file location for IENC charts and to download the catalog. USACE appears to still be in implementation mode for their charts. They only recently changed from what they called U35 format to U37 format, and each of those formats have separate catalogs. Not sure what the format designations really mean. The URLs in the location element for the S57 charts refer to a Cold Fusion URL (.cfm file type), that I don't know how to process. Finally sent a request to the USACE for an explanation for how to process this URL. Looking for other sources of info, but not luck. For now the IENC chart library form works for all functions except the download. If I don't get a response or figure it out in the next few days, I'll move on and start work on the other chart sources that allow a direct download of the charts in zip file format.
1.6.3.10	1-Mar-16	Got the download of USACE IENCs started for individual charts. Had to ignore the "location" field in the catalog and use a hard-coded URL for the download directory on the USACE server. Found the date in the catalog is almost always later than the date of the "*.000" file. Need to come up with another way to determine if there is a later version of the chart available. Will have to modify the formChartDownload logic to get the URI of the IENC chart in order to get the download list function working. Looks like I need to save a meta data file to each chart folder that can be compared to the contents of the catalog to determine if the chart has been updated. The file must be of a type that the chartplotting software will ignore. Added Waterway combobox to the IENC filters. This allows the selection to be done by river name. In order have the formChartDownLoad handle IENC charts I had to add separate logic. The branch between the IENC downloads and those for RNC and ENC required limiting the form to multiple charts, no single chart downloads. For single chart downloads the "Download Selected Item" button should be used. When only one chart is selected the "Download Item List" button is disabled.

ChartManager Update History

Version	Date	Description of Changes to the ChartManager Program
1.6.3.11	2-Mar-16	Added code to collect the IENC meta data from the catalog file whenever a new version of the chart is downloaded. This also required a mod to the formChartDownload to build an array of the chart elements that are successfully downloaded and unzipped. Currently the meta data consists of the chart edition number and posted date for the chart. The program now will create a list of updated charts and can download the list.
1.6.4	3-Mar-16	First release with support for RNC, ENC and IENC chart libraries. The IENC support still needs work (e.g., adding to groups), but I can use it to manage the IENC library.
1.6.4.1	7-Mar-16	Fixed a few problems in the IENC processing and added support for IENC charts in the Chart Groups.
1.6.4.3	18-Mar-16	Renamed "Chart Groups" as "Chart Collections". Although they are used to create chart groups in OpenCPN, they are not the same. I also didn't want to brand this feature as something that only applies to OpenCPN. Added color to the form ICONs so they are more distinct.
1.6.4.4	26-Mar-16	Fixed one problem with unzipping IENC files. Fixed a problem with the NEXT, PREV, ... buttons on the IENC chart library form. The NEXT and FIRST buttons were enabled when the selection list was empty. Clicking either of those buttons in that situation caused a program exception.
1.6.4.5	27-Mar-16	Added a library check form to validate the contents of the chart libraries. Initially this just flags any charts in the library that do not have an entry in the chart catalog. This is probably just a problem with my RNC and ENC libraries, which I have been using for more than 10 years. It appears several of the charts in my libraries have been discontinued, but I am not aware of any catalog update that would tell me this has happened. The library check form is not very efficient and the checking of all charts takes a little while. Once the checks are complete any library charts that are not in the catalog are listed on the form. The form provides the option to ignore, delete, or move each of these charts. The move function moves the chart files to a folder specified by the user.
1.6.4.6	28-Mar-16	Fixed bug 1-007, which caused download error in the Chart Collection form if a IENC collection contents are downloaded
1.6.4.7	2-Apr-16	Added new form to generate chart catalogs for those libraries that either do not provide a catalog file (e.g., NV Charts), or the chart catalog does not provide sufficient data (e.g., coverage area for each chart panel) for incorporation into the Chart Collection function. This and later versions of the program may be released before the Chart Catalog creation code is fully working. Rewrote the parse routines for the BSB and KAP files to shorten and code and make it more efficient. Changed the KAPparse routine to capture the chart limit coordinates ("PLY/") into the KAP file data array and then display the two coordinates that represent the total coverage of the chart in the ChartCatalog form. The coordinates in the KAP file array, which may be more than 4, will be used in the ChartCatalog form to generated the "cov" element for each chart panel in the generated chart catalog. Changed the chart coordinates used in the Chart Collections from a long data type to a single type so that decimal degrees can be displayed.

ChartManager Update History

Version	Date	Description of Changes to the ChartManager Program
1.6.4.8	5-Apr-16	The program now generates a pseudo-chart catalog for several non-NOAA chart sources for RNC chart. The formChartCatalog creates this pseudo-catalog from the actual BSB and KAP (or EAP) files. This is done to create a catalog with chart coverage information (<cov>) similar to that provided in the NOAA RNC catalog. This pseudo-catalog can then, in turn, be used by the formChartGroups to include these non-NOAA charts in chart collections. This new form has exposed some short comings in some of the non-NOAA RNCs that may limit the usefulness of including the charts in the collections. I originally acquired access to some of these charts from the URLs in the Chart Downloader feature in OpenCPN. These URLs reference the GitHub website, rather from the source hydrographic office website. So I'm not sure if the problems are mostly in the original charts or in the transfer of the catalog info to GitHub. The pseudo chart catalogs is not yet used by the chart collections feature. They still need further tweaking and testing.
1.6.4.9	7-Apr-16	Added SoftCharts to the chart types managed by the ChartCatalog form.
1.6.4.10	9-Apr-16	Fixed bug 1-009. Added checks on download URLs to alert the user that an update to that URL is available for download. Only checks these URLs once per session. Also added a check on the version in the MasterCatalog xml file when it is being loaded to insure it is from a program version that is compatible with the one executing.
1.6.4.11	4/13/2016	Sets the initial chart catalog page in formChartUpdaterMain to an open catalog. If no catalogs are open, the first catalog (RNC) is displayed. This forces a check for an updated catalog whenever the program is started. Previously the user had to change the page selection to force this. Added check when opening the RNC, ENC and IENC catalogs to make sure the specification version has not changed. Not sure what this version number actually refers to, but I assume if it changes some of the program functions will not work or cause a program exception. The check offers the user the option to continue or not. I finally gave up trying to determine the correct criteria to identify the RNC charts that have been updated and need to be downloaded. So I asked the source - NOAA, and they said I should be using the "...edition_last_correction" value in the catalog to identify charts that have been updated. I've added a new filter check on the RNC library form called Edition Check to perform this filter. With this box checked any chart that has a Raster Edition number, Source Edition number or NTM Edition number less than the associated "last_correction" number in the catalog is flagged as having an update available for download. This cuts down the number of update available charts using the zipfile date in half. I've left the date filters in place as there may be a use for them. The chart

ChartManager Update History

Version	Date	Description of Changes to the ChartManager Program
1.6.4.12	17-Apr-16	The creation of chart catalogues for the three chart sources supported appears to be working. For those sources with a GitHub catalog it is a 3-step process: (1) Enter the URL of the GitHub catalog in the Chart Catalog Create form and click "Download". Then click "Create Catalog". This creates the program catalog file for the chart source. (2) Go to the Other RNC Libraries form and select the chart source from the Chart Catalog drop-down list. This should build a list of all charts in that catalog (program generated one). Download all charts (on the initial creation of this catalog) and/or any charts for which an update is available (not implemented in 1.6.4.12). (3) Return to the Chart Catalog Create form and re-create the catalog for this chart source. This version of the catalog will include the geographic chart limits from the KAP file as <vertex> elements under the <cov> element. Now the catalog is sufficiently populated to be used in the Chart Collections form (not implemented in 1.6.4.12). During testing with GitHub catalogs I discovered that the Peru catalog charts are compressed as "rar" files. I currently do not have a means to de-compress these files. So the initial catalog generation process can be run on this source, but The chart files themselves cannot be downloaded by the program and the program generated catalog cannot be updated with geographic data from the KAP files. In
1.6.4.13	5/7/2016	Added "PO" to the list of states to cover the Pacific territories. Missed that when I first set up the contents of the combobox. Added links to the Youtube tutorials in the Help section of the main menu. Disabled the processing of Other Chart Sources until that part of the program is fully working.
1.6.4.14		Added check for network availability before starting download of catalog files. Added parse of BSB and KAP files for the Other RNC Sources.
1.6.5.0	20-May-16	This is the first version to provide support, though incomplete, for chart sources other than NOAA and USACE. In order to accommodate the other sources in the Chart Collections, the contents of the xml MasterCatalog file had to be modified. This change made Master Catalog files created by earlier program versions incompatible with this version. Version 1.6.5 and later will not open the Master Catalog files created by earlier versions of the program. I have not provided a conversion utility for the old xml files, but I will try to maintain backward compatibility for program changes in the future. I have added a new, incomplete program document that describes the processing of charts from these other sources. Also the program version numbers have been standardized in the form of "m1.m2.f.r", where m1= Major Revision number (e.g. re-write of large portion of code). Currently = "1"; m2= Minor Revision number (e.g., significant change to the user interface). Currently = "6"; f= Feature Enhancement (e.g., adding other chart sources). Currently = "5"; r = Revision (e.g., fixing a bug). Currently = "0". With version 1.6.5.0 the check for updates strategy has changed. Previously the program checked for an update before starting. Now the program checks after the program has started and if the user wishes to install the update, the download takes place in the background while the program executes as the previously installed version. The update will not be applied until the next time the program starts. The program also checks for updates only once a day. If the user does not want to install the update, the next opportunity to do so will be the following day. This change was made to accommodate low bandwidth internet users, who may not want to wait for a long download to complete to use the program, but still want to keep the program up-to-date. Sometime in the future the update check will be completely under the user's control. That is, the program will only check for updates when the user clicks an "update check" menu item, and the program will not nag the user about an update that has not been installed.

ChartManager Update History

Version	Date	Description of Changes to the ChartManager Program
1.6.5.2	23-May-16	Found the reason the RNCChartLibrary form was taking so long to initialize. The program was parsing every BSB file in the library. This is only necessary if one of the filters is checked, which they are not when the form is initially shown. Added a test for the filters that require the BSB file parse and bypassed the parse if none of them are checked. The combination of the parse along with reading the RNC catalog file was causing a delay of 10-15 seconds or more before the RNC library form was displayed. Once the catalog file has been loaded the delays for the parsing are not so great. Also added code in the BSBparse routine to list the individual chart regions covered by the chart. Previously only the string with the regions comma separated was parsed into the record for the BSB file. Similar code will be added for parsing the USCG districts and the states. The parsing of the regions is necessary to capture that information for the generation of the chart catalogs for the non-NOAA and non-USACE chart sources.
1.6.5.3	25-May-16	Fixed the ChartCatalogCreate form delete function, to delete a chart catalog from the list. Previously the program just removed the item from the combobox, but the program uses the combobox selecteditemindex as the index to the ChartCatalogMasterArray. If an item is removed from the combobox, then any catalog in the combobox after the removed item will receive an incorrect index to the array. With the fix, the item is not removed from the combobox, but the text is replaced by <removed>. The form will not allow the user to select this item as it has been deleted, but the indices for the other catalogs have not been changed. When the catalog entries are saved to the MasterCatalog.xml file on exit, the entries in the array with the name "<removed>" are not written to the file, and are finally removed from the master catalog. Added the program buglist (in pdf format) to the Help menu. The menu item checks to see if the pdf file has been downloaded, and if not performs the download. If the file has been downloaded, but the date of the URL file is later than that of the downloaded file, the newer file is downloaded. Then the pdf file is opened in whatever software is installed for pdf files. This same processing has been added to the documentation files so they are not included in program update downloads, which are getting very large.
1.7.0.0	31-May-16	Added/Fixed the code to create the <cov> node in the chart catalogs generated for the other sources. Completed the code to implement Chart Collections for the charts for other sources. Now a Chart Collection can be generated for the charts from one of the sources using a geographic rectangle to select the members of the collection. This still needs more testing, but it does represent a significant feature enhancement to the program.
1.7.0.1	16-Jun-16	Added code to parse the source edition for NZ RNC charts.

ChartManager Update History

Version	Date	Description of Changes to the ChartManager Program
1.7.0.2	28-Jun-16	Added code to include the OpenSeas charts in the other RNC catalog generator and chart collections. I had to modify the catalog generate code for this source. All other sources set the name of the BSB file as the NU field in the BSB file. The program uses the NU field to generate the catalog entry and the rest of the program uses the <number> node value as the name of the BSB file. For some reason the OpenSeas folks have decided this field must be numeric only and stripped the leading alpha off all of the file names. So now the catalog generator for the File Source type charts will force the <number> to be the name of the BSB file and ignores the NU value parsed from the BSB file. Also had to add code to allow for the file type to be lower case (".bsb"). For now all this effort was not worth much as the charts don't look very useful for navigation. The few I've looked at appear to be street maps to which someone has added a few navigation symbols, but no depths.
1.7.0.3	20-Jul-16	Added code to check for updates to charts from other sources in the chart collections. Currently using the ntm_date as the update criteria for "Download Source" charts (NZ). Fixed the code for HTML source charts (i.e., those that are downloaded by parsing a webpage listing of a chart library). Now the program checks the date time of the webpage URL to determine if the page should be downloaded and re-parsed.
1.7.0.4	22-Jul-16	Corrected URL date time WebRequest. Changed to Create Time in 1.7.0.3, which was not correct. Changed back to Last Write Time.
1.7.0.5	23-Jul-16	Completed the implementation of other chart sources. This is not fully tested and there are still some holes in the code, but it will create a catalog of charts for the various chart source types - Catalog, HTML, Download and File. The Other RNC Chart Library form will download the charts for the Catalog and HTML sources based on selection criteria. Chart Collections will create library sub-groups from the other chart sources. I need to investigate further sources. Each new source requires a lot of unique code.
1.7.0.6	29-Jul-16	Fixed bug 1-026 in ChartCatalogCreate form.
1.7.0.7	3-Aug-16	Added list of graphics included with USACE IENC charts. Graphics are displayed when selected from the list. Added the IENC graphic display to the formChartCatalog. Changed the labels of the NTM and Source Edition info from the RNC Chart Catalog on the RNC Chart Library form. The label now identifies the NTM and Source Edition values (nr and date) as being for the last correction to the chart. This more accurately specifies the NTM or Edition levels that required a change to the chart image. Fix bug 1-027
1.7.0.8	3-Aug-16	Added fix for bug 1-029
1.7.0.9	5-Aug-16	Added fix for bug 1-030
1.7.0.10	14-Aug-16	Temporary fix for bug 1-031.
1.7.0.11	20-Aug-16	Added option to download an updated catalog to the MsgBoxes that identify the catalog URL that has been updated.

ChartManager Update History

Version	Date	Description of Changes to the ChartManager Program
1.7.1.0	4-Sep-16	Added date check for HTML chart sources to prompt the generation of a new catalog if the existing catalog is older than the downloaded HTML page. Changed Help menu to download the PDF version of this file to view the update history. Added a section of the program for managing paper charts. It still needs some work on the user interface, and it is really just a chart inventory tool. The charts are entered by Portfolio (e.g., Explorer Chart Book, Geographical Area, etc.). Then the individual charts are entered into the Portfolio providing chart info (e.g., area of coverage, title, projection, map datum, etc.). The goal is to eventually incorporate the paper chart library into some of the chart collection functions (e.g., selecting the paper charts needed for a planned passage or cruise).
1.7.1.1	7-Sep-16	Added "bound" as a boolean member of the Portfolio record. This designates that all of the charts in this portfolio are bound together into a booklet. Not sure how I will use this info, thinking about adding a page number to each chart record in a bound portfolio. Check for duplicate Chart ID for a new chart in the Paper Chart Portfolio. Flagged as "Duplicate ID" and focus will not move from the ID textbox. Add code to remove any special characters prohibited from xml values (e.g., "&"). Added the "Delete Chart" function to the Paper Chart Inventory form. Also added "Delete Portfolio" function to Paper Chart Library.
1.7.1.2	10-Sep-16	Added Export function to the main menu. This function exports selected files to a compressed export file. The files exported are those created by the user within the program (i.e., collections, paper chart library contents, and the master catalog file). Files which are generated external to the program and can be downloaded from the Internet (e.g., NOAA RNC Catalog) are not exported. Until the import function is added to the program, the export function is just a backup for those files. With the implementation of the import function the two features can be used to transfer non-internet data from one PC to another.
1.7.1.3	14-Sep-16	Formatted the latitude and longitude textboxes to display degrees as ddd mm.t instead of decimal degrees. Added directory file to the Export zip file. This file will be used to identify the other files in the archive during the import process. Modified the IENC graphic display to preserve the aspect ratio of the graphic. Added Import function to go with the Export function in 1.7.1.2. The two functions now provide a backup/recovery capability for the non-downloaded files.
1.7.1.4	18-Sep-16	Added Help menu link to the video tutorial on Export/Import. Corrected problem in Chart Collections to automatically re-generate an existing collection if the collection folder is changed. This can happen if the chart collections are imported from another system. Added code for the paper chart scale data entry to allow the value to be entered without the "1:". Just the second value (or divisor) in the ratio need be entered. The code reformats the entry as "1:nnn,nnn". The value entered is also validated that it is a number. The standard format (1:nnn,nnn) can still be entered. Added check on import, if the destination folder does not exist, request the folder from the user. If the user does not provide a folder the Import of that file is skipped. If a file is specified and the import completes, the folder/file setting for that file is updated.
1.7.1.5	23-Sep-16	Fixed bugs 1-034 and 1-035

ChartManager Update History

Version	Date	Description of Changes to the ChartManager Program
1.7.1.6	29-Sep-16	Fixed bug 1-036. Removed the Library Check from the RNC, ENC and IENC libraries. This was a one-time check on the libraries to fix problems in my libraries from the previous manual management. Need to add a validation check for the libraries, but this was not it. Added the USCG buoy overlay file to the IENC file management. I learned from a recent Cruiser's Forum thread that the U37 format USACE IENC charts do not include the USCG maintained lateral buoys and marks. The files do contain beacons and lights that, presumably, are USACE maintained. The USACE does provide an IENC overlay file for download that includes the USCG buoys. I have added a text box control in the IENC file tab for this file. There is a download button to download this file from the USACE site. Once it has been downloaded the program will check to see if it has been updated and download it just like it does for the U37 IENC catalog. I have also added a checkbox in the Chart Collectionform for IENC collections to copy this overlay file to the collection folder. For the Buoy Overlay file contents to be visible in OpenPN, quilting must be enabled. The USACE does publish a catalog file for the bouys, which currently has only one file, the one described above. This file appears to only cover the eastern half of the US (to 96W), which is the current limit of the IENC catalog. I assume the USACE is actively working to add the western waterways to the catalog and a corresponding bouy file will be published at the same time.
1.7.1.8	3-Oct-16	Fixes for 1-037, 038 and 039
1.7.1.9	19-Oct-16	Added a function to parse the version number of the program to a double numeric value. Also a subroutine to extract and parse the version number of an xml file to a double. This is a preliminary step to check for compatibility of xml documents created by older versions of the program, and ultimately convert the document to a compatible form. Added Panels to the Paper Chart Inventory records. This version changes the PaperChartLibrary xml file, a conversion of Paper Chart library files created by earlier program versions is necessary. This will happen automatically when the old catalog is opened, but the user will get a warning this will happen and the option to not do the conversion. The user may wish to back up their catalog before doing the conversion.
1.7.1.10		Major re-write of the formORNCChartCatalog to simplify the processing. All functionality of this form appears to be working, but more testing is required. Fix for 1-040, 041, 042, 043. Added check for changes to Chart Collections form when the "X" button is clicked to close the form. This means the form cannot be closed after changes have been made to the form contents without the user having the opportunity to save the changes. Same change made to the Paper Charts and Chart Catalog forms.
1.7.1.11	8-Dec-16	Fixes for 1-040 to 044
1.7.1.12	18-Jan-17	Resumed work with the Other Chart Sources. The OtherRNC form will handle ENC and IENC chart libraries as well. Have begun working with the France IENC library as an HTML source. Added a context menu to the listview for the parsed charts from the HTML page. This allows the contents of the Listview to be edited before the catalog is generated.

ChartManager Update History

Version	Date	Description of Changes to the ChartManager Program
1.7.2.0	22-Mar-17	Added a form to display program settings. Currently this just displays the basic URLs used by the program to download the NOAA and USACE chart catalogs. Eventually this settings will be user modifiable and user added. However I haven't figured out the best way to implement this capability. There must be default settings and values that can be reset after modified by the user to restore the original program functions. Expanded the criteria for NOAA Chart Collections to allow more than one region. Removed the USCG district as a criteria. Expanded the criteria for NOAA Chart Collections to allow more than on state. This is the fist version generated by Visual Studio 2017. Previous version were generated by Visual Studio 2013.
1.7.2.1	31-Mar-17	Fixes for 1-001, 1-002, 1-028, and 1-051
1.7.2.2	5-May-17	Added new collection type for routes. The program can import a route(s) from a GPX file(s) and then select charts that cover the route waypoints. The selection technique is to calculate the smallest rectangle that encompasses all waypoints, add a user-specified margin to the rectangle, then find all charts that are contained within or intersect the rectangle. This final selection process is the same as for collection based on a specified rectangle. Currently this collection has been implemented only for NOAA ENC and RNC chart libraries.
1.7.4.1	2-Sep-17	Added LNM and Date to display of Navaid changes in the RNC form.
1.7.4.3	31-Oct-17	Corrected to the new USACE IENC URLs for the IENC Chart Catalog and the Buoy Overlay.
1.7.5	5-Nov-17	Added feature to use a kml file (i.e., a placemark shape generated by Google Earth) to set the area limits of a chart collection. This is the quick and dirty way to implement a graphical interface (GE) to set those limits.
1.7.6	28-Nov-17	Created a xml file for user viewable/modifiable program settings, such as the URL of chart catalogues. I've turned off the processing of USACE overlays as it appears the distribution process for those products is undergoing change. Converted Enhancement Plan for text file to a pdf file.
1.7.7.0		Moved the solution to Net Framework 4.6.1
1.7.8.0	24-Jun-18	Fix for 1-057
1.7.8.2	16-Apr-19	Clean up the RNC library form. Added color flag (red) to the RNC Library form to identify an out of date Edition or NTM nr. That has been superceded and an updated chart is available. Added check for update to the Help menu. Removed the automatic update check on start.
1.7.10.1	1-May-20	Fixed bug in Chart Collections for ENC Update check
1.7.10.2	26-May-20	Disabled the Other Chart Sources (other than NOAA and USACE). This processing was never successfully completed and program aborts have crept into the code.
1.7.10.3	24-Oct-20	Fix for 1-064