Code Line XML Converter Usage Instruction Manual

CLXC

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[This manual introduced the new manner of configuring Code Stations for the site. For Application Engineer, ATS products team or other professionals who is going to use Track Builder]

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Introduction

Code Line XML Converter (CLXC) is a Java-based application developed by Lingfeng Mo that can automatically extract the bit information for both TWC and Non – TWC controls and indications from the *Code Chart*, which is .NSS format file by default, and convert it into an organized XML file.

The goal of this task is develop a more efficient manner to build code stations for sites. Efficiency means lower cost, shorter time and also never increases the total amount of work. Thus, it recommend that every user to carefully read this instruction manual and strictly follow the step while using this tool in order to avoid mistakes and follow EHS policy of Alstom.

This document will introduce how to prepare original data (NSS format code chart file) and how to operate the tool to convert it into XML file.

Data Preparation

It is critical to prepare the data for CLXC by following the right format before use it. The goal of Information Extraction (IE) task is to create a more structured view of the information present in free text and produce a more easily machine-readable text to process the sentences [1]. Like all other IE tools, the working principle behind CLXC is the content of the text. In other words, 'word' more specifically. Therefore, it is critical to make sure the key features, which could be a word or phrases are included in the source file (Code Chart). In many cases, it is case sensitive for letters.

```
E230_NORMAL_NVSP2.NSS - Notepad
File  Edit  Format  View  Help
********************************************************************
* File Name:     E230_NORMAL_NVSP2.NSS
* Created:       March 27, 2013 08:52
********************************************************************


********************************************************************
NETWORK SERIAL COMMUNICATIONS SECTION
********************************************************************


NETWORK PORT 1 = TYPE(MODBUS TCP SERVER),UNLATCHED CONTROLS

* Component:    E230 IOC TO NVSP2
CONTROL = ADDRESS(0100000000000001010101111100000),LENGTH(560)
1  =  ER-DW-EXT-IOC
2  =  ER-DW-TERM-IOC
3  =  EL-DW-EXT-IOC
4  =  EL-DW-TERM-IOC
5  =  EB-DW-EXT-IOC
6  =  EB-DW-TERM-IOC
7  =  WB-DW-EXT-IOC
8  =  WB-DW-TERM-IOC
9  =  150DISP-IOC
10 =  250DISP-IOC
11 =  350DISP-IOC
12 =  450DISP-IOC
13 =  120-130RRQ-IOC
14 =  120-330RRQ-IOC
15 =  130-120RRQ-IOC
16 =  140RRQ-IOC
17 =  150RRQ-IOC
18 =  220-230RRQ-IOC
19 =  220-430RRQ-IOC
20 =  230-220RRQ-IOC
21 =  240RRQ-IOC
22 =  250RRQ-IOC
23 =  330-120RRQ-IOC
24 =  340-350RRQ-IOC
25 =  340-450RRQ-IOC
26 =  350-340RRQ-IOC
27 =  350-440RRQ-IOC
28 =  430-220RRQ-IOC
```

Figure 2.1 Code Chart .NSS file

Every .NSS file can be simply opened with a Notepad or WordPad program. As Fig. 2.1 shows, the content of this file includes file name, created date, network port, component information, control address and length and control bits, indication address and length and indication bits (not shown) and also TWC controls and indications(not shown). As noticed, all the content of this file are uppercase letters except created date and the title of component information. Therefore, before use CLXC to convert NSS to XML file, it is required to make sure that the current working file has all these information and following this format, that is, except these information all the others are stated in UPPERCASE letters. In case of lacking this information, they have to be manually added. Otherwise, CLXC won't work.

Installation

There is no installation process required. The file user downloaded is a compressed RAR file which constrained only a folder "jre6" and an executable file (.exe) *Code Line XML Converter.* "jre6" is Java Runtime Environment which has all the libraries that are required to run the application and open the executable file "*Code Line XML Converter.exe*" is the way to run the software.

Control Panel

After de-compressed the downloaded file and ran the software, the main Graphic User Interface (GUI) panel – Control Panel will be popped-up. The control panel of CLXC (Fig. 2) is consisted with 4 parts, *Menu Bar*, *Function buttons*, *Text Area* and a *Status Display* Window.
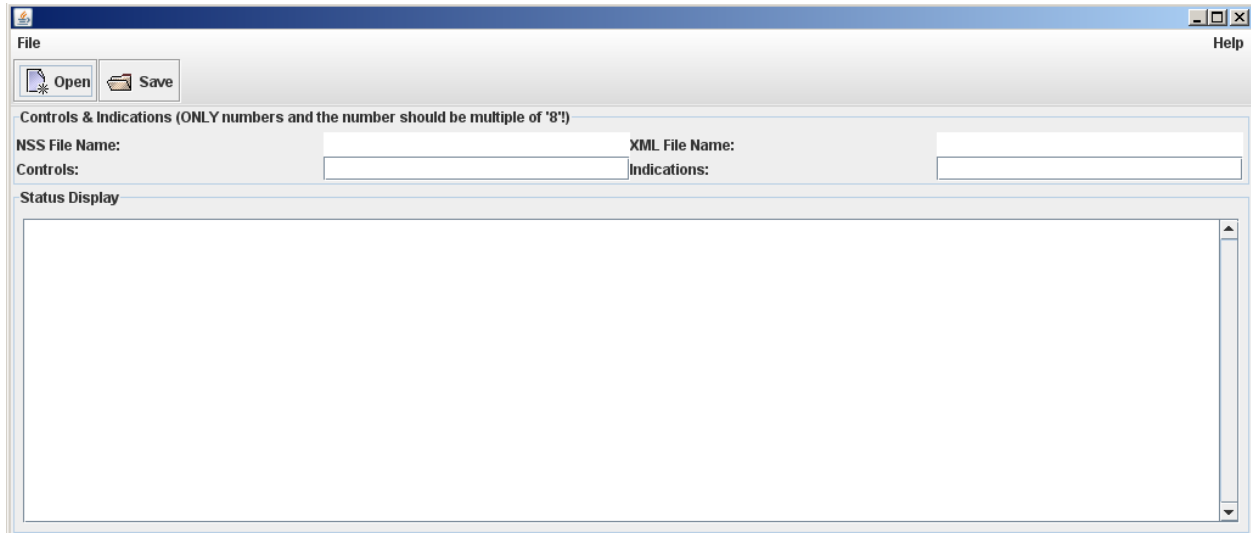

Figure 3.1 CLXC Control Panel

Menu Bar

The *Menu Bar* of CLXC has two major drop-down menus, *File* and *Help*.

File (Fig. 3.2) allows three actions, which are *Open*, *Save* and *Exit*. All of converting actions can be performed by using File, including open and load the .NSS file, save it as a XML file or exit the whole program.

Also, the keyboard shortcuts are also available for all these three actions.
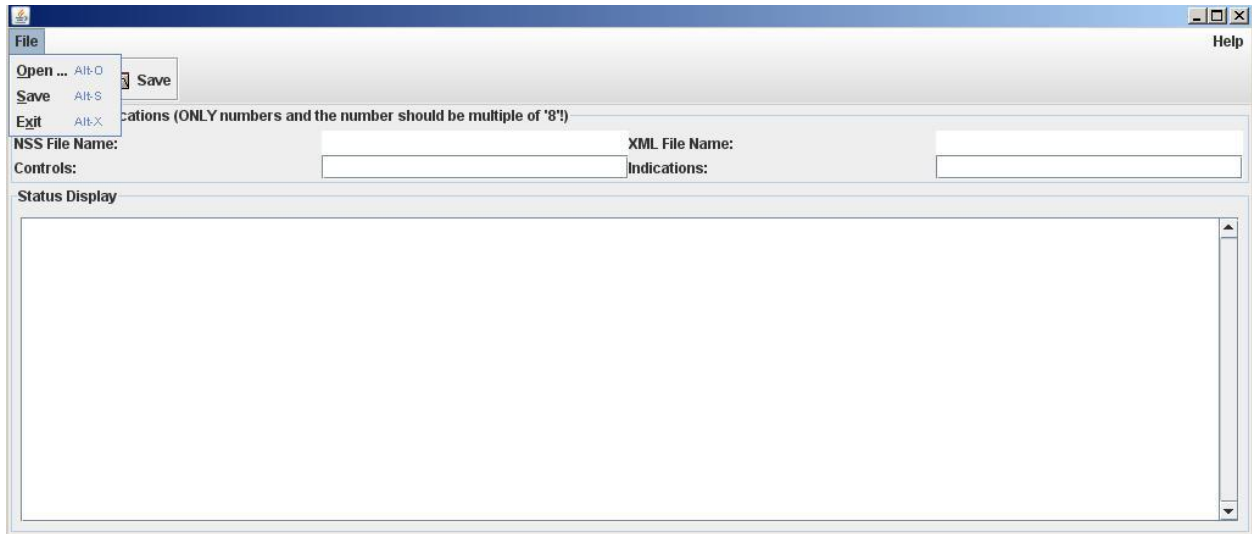
Open: Alt + O.

Save: Alt + S.

Exit: Alt+ X.

Figure 3.2 Drop-down lists of File

Help (Fig. 3.3) option provides you a list of frequently asking *Questions and Answers* (Q&A) and instructions. (TBD)

Figure 3.3 Drop-down lists of Help

Function Buttons

There are two *Function Buttons* in CLXC, *Open* and *Save*. Basically, they are just the short-cut of action *Open* and *Save*. The related action will be performed by

choosing the options from *File* drop-down list, typing keyboard shortcut or clicking the *Function Buttons.*

Text Area

The Text Area of CLXC is consisted with 4 *Text Fields*, *NSS File Name*, *XML file Name*, *Controls* and *Indications*. In which, *NSS File Name* and *XML file Name* will be auto-filled itself after preferred NSS file is selected and is not editable. They are working as a tip window and their function is to notice the user about the NSS file they are working on and the XML file name they are going to save. To change the selected file, perform the *Open* action again. To save file as a different name, perform *Save* action.

However, the *Controls* and *Indications* are very important *Text Filed* where allow the user to enter a number to split control and indications bit and TWC control and indications. The qualified user should have the knowledge to point out the critical point and define a number in order to identify the TWC and Non-TWC controls and indications. In addition, the data that user entered is required to be numbers. Errors will be thrown if they are not. Also, the number should be the multiple of 8 is also necessary. Take E230 for example, the number for *Controls* is 208 and the number for *Indications* is 304.

Status Display

The *Status Display* window will show the action which are currently performing and also give user some brief tips to address the problem that he/she may have while using the CLXC.

Open and Save Actions

As introduced above, there are two major actions that CLXC can perform, *Open* and *Save*.

Open

Open action allows user to select specific NSS file and load its data into CLXC. A pop-up window (Fig. 4.1) will show while performing *Open* action. In the window, user will have all browser functions that their operating system contained to select their preferred NSS file.
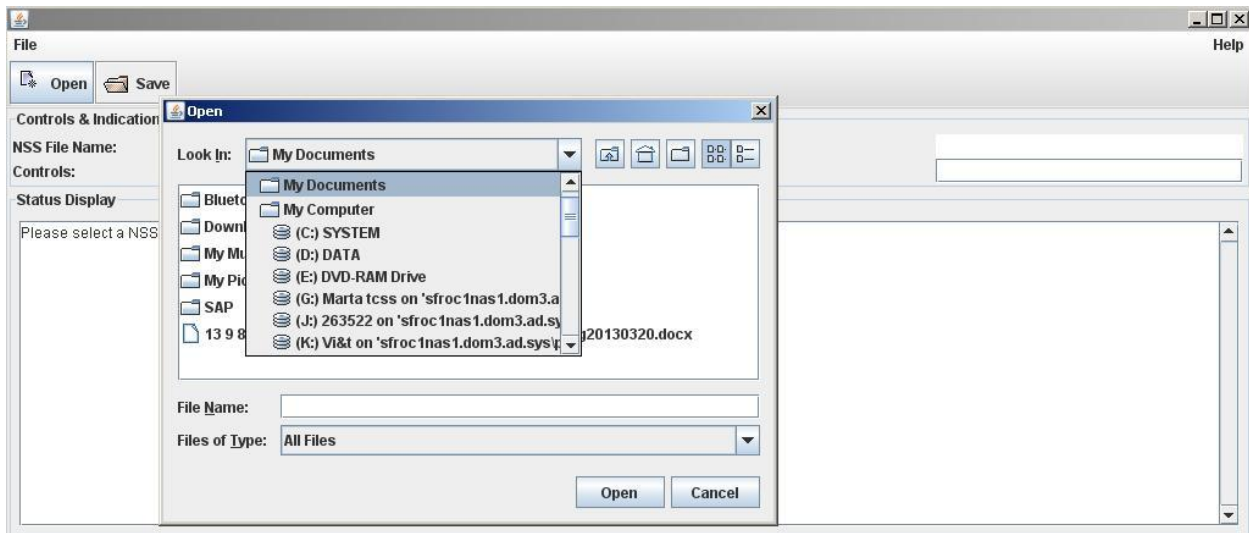

Figure 4.1 Pop-up Window for *Open* Action

After certain NSS file was selected, the absolute path of the selected NSS file will be auto-filled in *NSS file Name* text field. Also, a suggestion is shown in *XML file Name* text field to notice user that Controls and Indications cannot be empty and click save button to convert and save it as a XML file (Fig. 4.2).
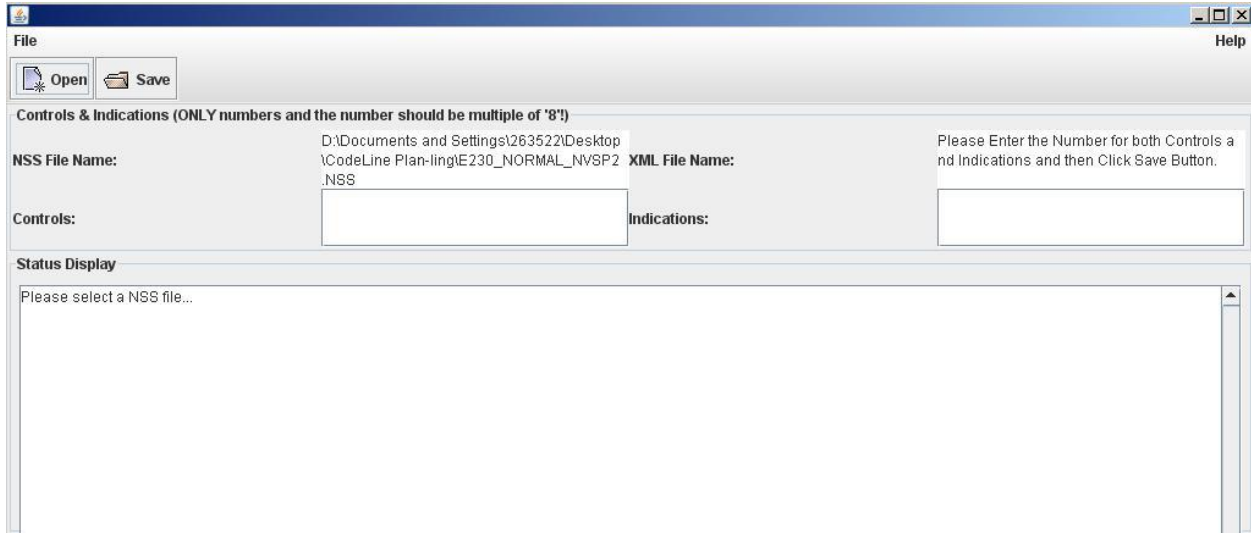
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Figure 4.2 Text Field Auto-filled after *Open* Action

Save

Save action allows user to convert and save loaded file into a XML file. In the example of E230, a pop-up window will show and asking user to give a name for the new file after the number for *Controls* and *Indications* was correctly entered (Fig. 4.3). User can pick any names but he/she has to change the extension or called sub-name from NSS to XML.
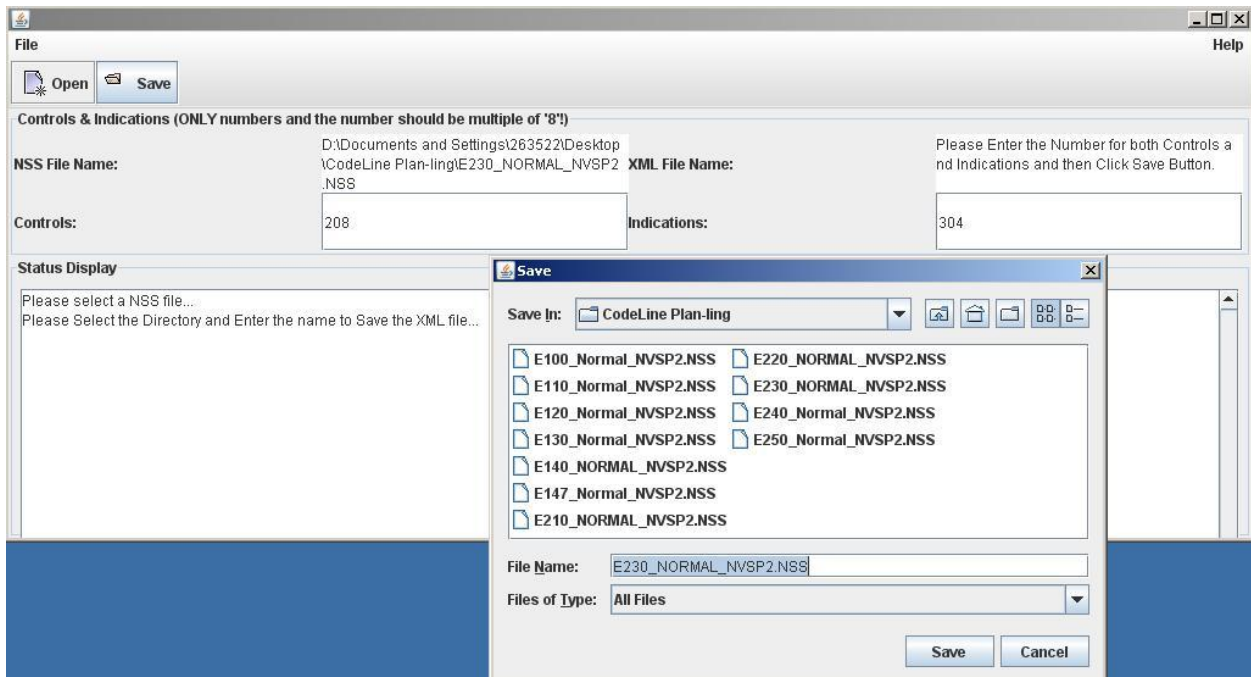
Figure 4.3 Pop-up Window for *Save* Action

If the number for *Controls* and *Indications* is empty and user hit the Save Button or to perform *Save* action in the other ways, an error message will be thrown and the program will be closed to protect the data (Fig. 4.4).
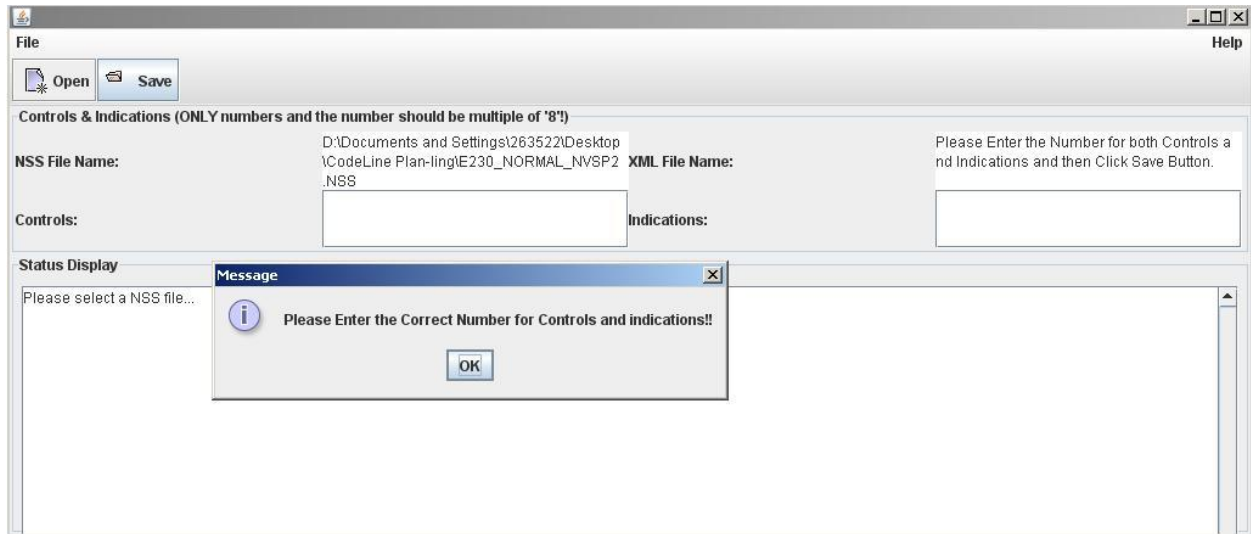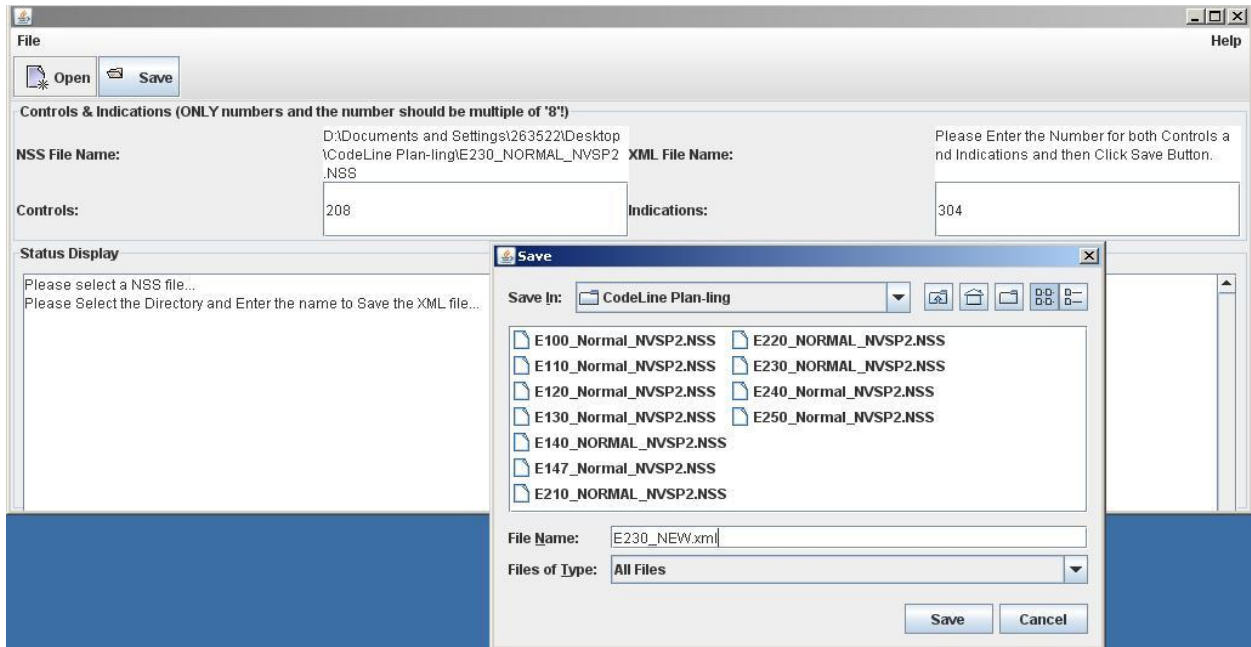

Figure 4.4 Error Message for Missing Content of Controls and Indications

If the user properly configured all the parameters and finished change the names. To save your file, click *Save* button in the pop-up window. The program will create a XML file and quit itself to complete the task (Fig. 4.5).

File   Help

Open   Save

Controls & Indications (ONLY numbers and the number should be multiple of '8'!)

NSS File Name: D:\Documents and Settings\263522\Desktop\CodeLine Plan-ling\E230_NORMAL_NVSP2.NSS   XML File Name: Please Enter the Number for both Controls and Indications and then Click Save Button.

Controls: 208   Indications: 304

Status Display

Please select a NSS file...
Please Select the Directory and Enter the name to Save the XML file...

Save

Save In: CodeLine Plan-ling

E100_Normal_NVSP2.NSS   E220_NORMAL_NVSP2.NSS
E110_Normal_NVSP2.NSS   E230_NORMAL_NVSP2.NSS
E120_Normal_NVSP2.NSS   E240_Normal_NVSP2.NSS
E130_Normal_NVSP2.NSS   E250_Normal_NVSP2.NSS
E140_NORMAL_NVSP2.NSS
E147_Normal_NVSP2.NSS
E210_NORMAL_NVSP2.NSS

File Name: E230_NEW.xml
Files of Type: All Files

Save   Cancel

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Compatibility and Technology

CLXC is a Windows based software and built upon:

Programming Language: Java

Frame Work: Java Core, AWT/Swing

IDE: Eclipse

References

[1] http://en.wikipedia.org/wiki/Information_extraction