P2 to Bacnet Conversion

1. Overview

These utilities will partially automate the process of converting a panel from P2 to Bacnet. The software will convert engineering units to Bacnet-compatible units, update state-text tables, create Bacnet commands from schedules and SSTO, and it will create Bacnet commands for enhanced alarms and provide the user with PPCL to be added for the enhanced alarming functionality. For these steps, the user will restore the p2 database into a Bacnet field panel and the utility will make the conversions with an automated HMI session.

2. Preparation

With the database open in commissioning tool, open Point Transfer. Export the Field Panel that is being migrated by clicking “Export Field Panel” as shown in Figure 1 below. The field panel export file will be used to convert engineering units, and it is referred to in creation of new state text.

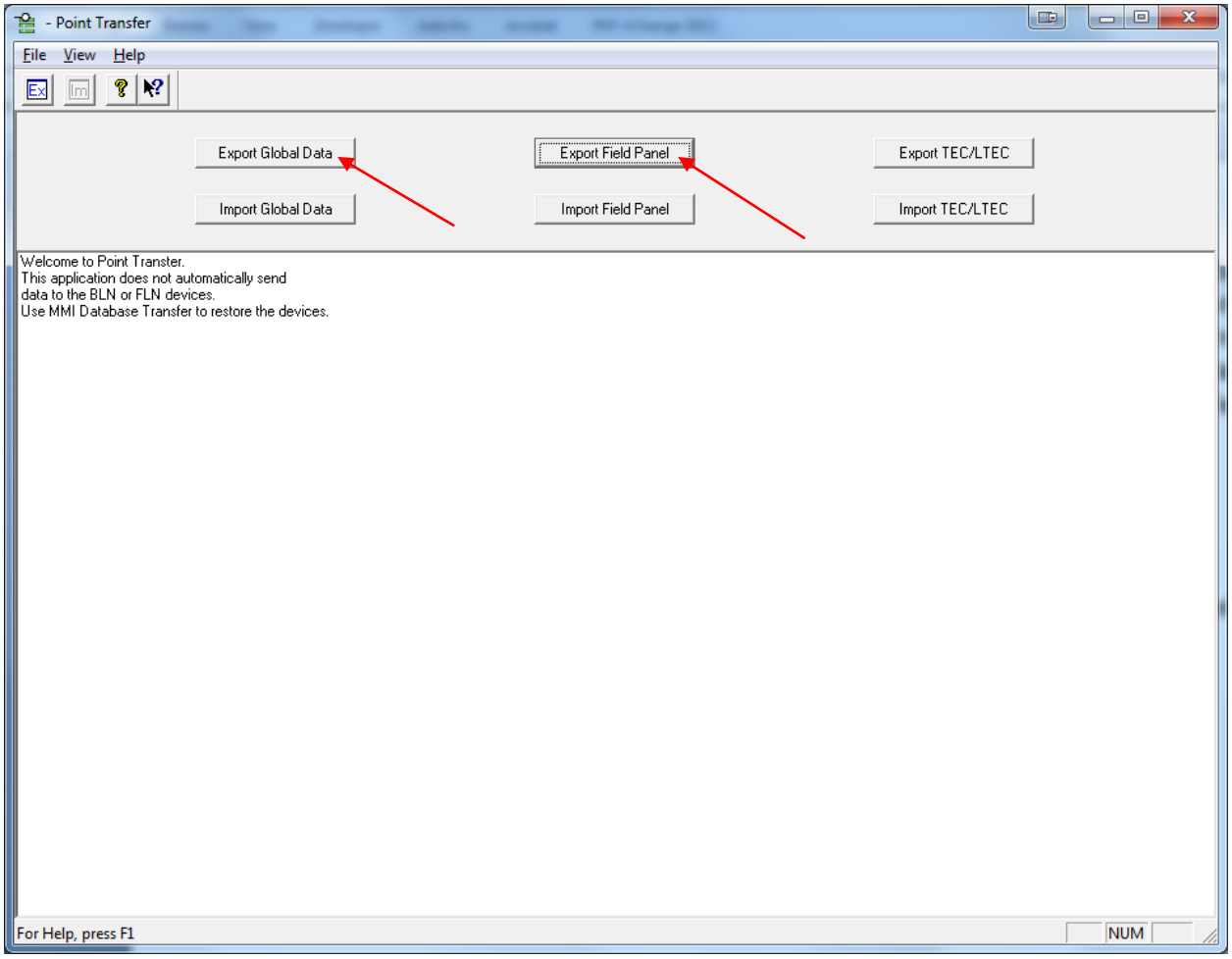

Figure 1: Point transfer screen. Export field panel and global data from here.

Next, click “Export Global Data” as shown in Figure 1 above. Select “Destination” and “Text Table” as shown in Figure 2. This export will be referenced in creation of new state text.

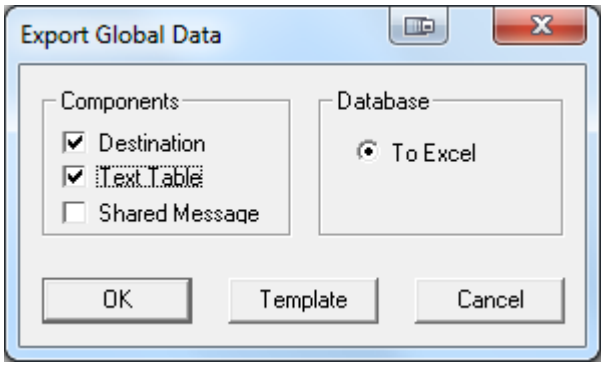

Figure 2: Export Global Data.

Still working in Commissioning Tool, open Report Builder. Create a new Zone Definition Report by selecting Definition > New and then selecting the Zone Definition Report as shown in Figure 3 below.

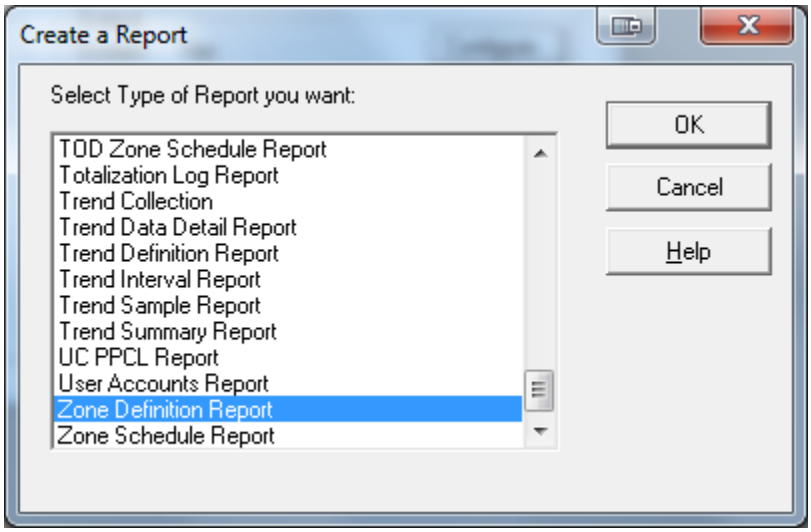

Figure 3: Zone Definition Report and Zone Schedule Report.

Create a single zone definition report for all zones in the panel being migrated. Set the report to output to a file as shown in Figure 4 below.

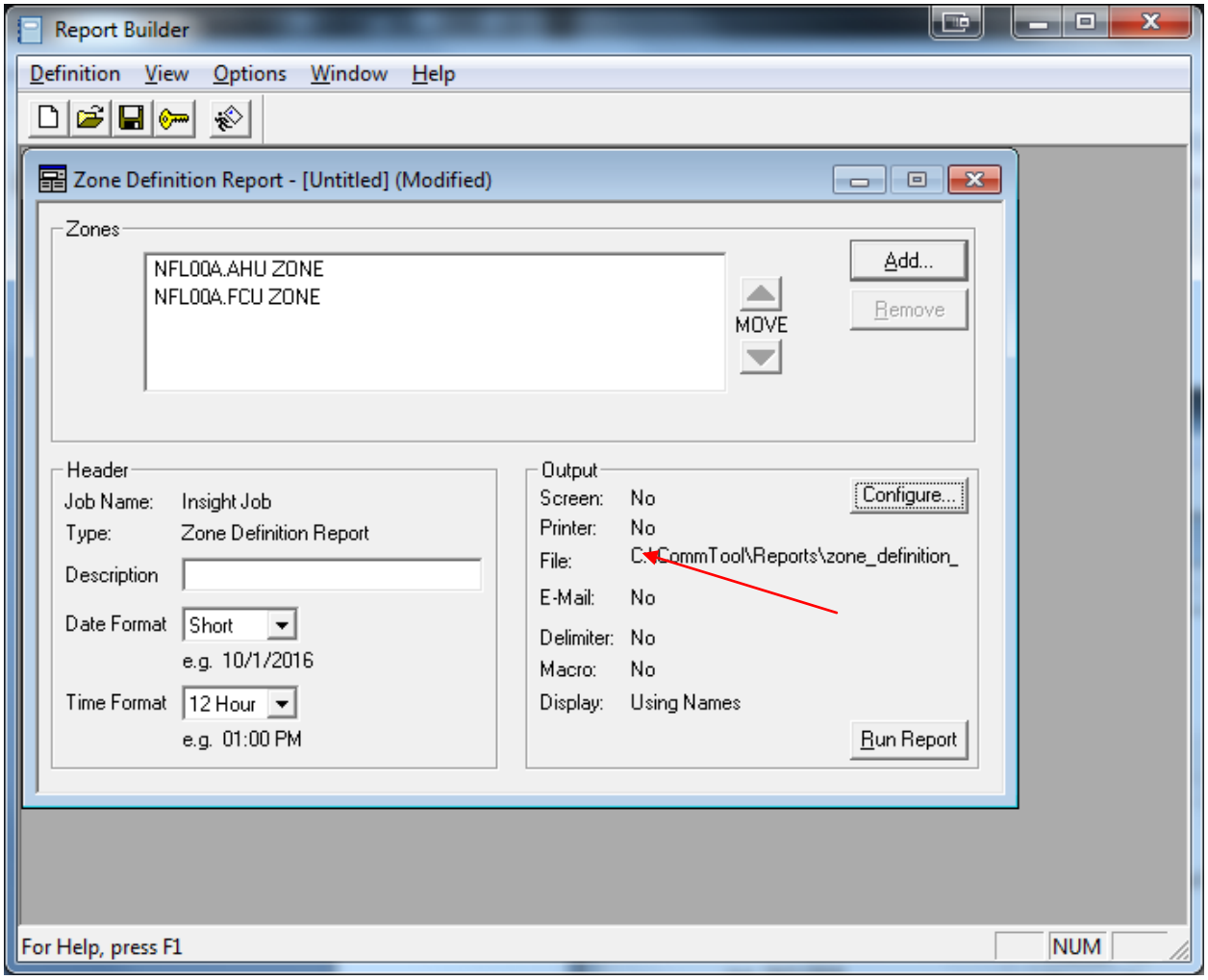

Figure 4: Zone Definition Report

Once the zone definition report is saved, create a new zone schedule report, repeating the procedure shown in Figure 3 above. Configure the report for all zones in the panel being migrated and to output to a file, as shown in Figure 5. Set the date range to “last week” as shown in Figure 6.

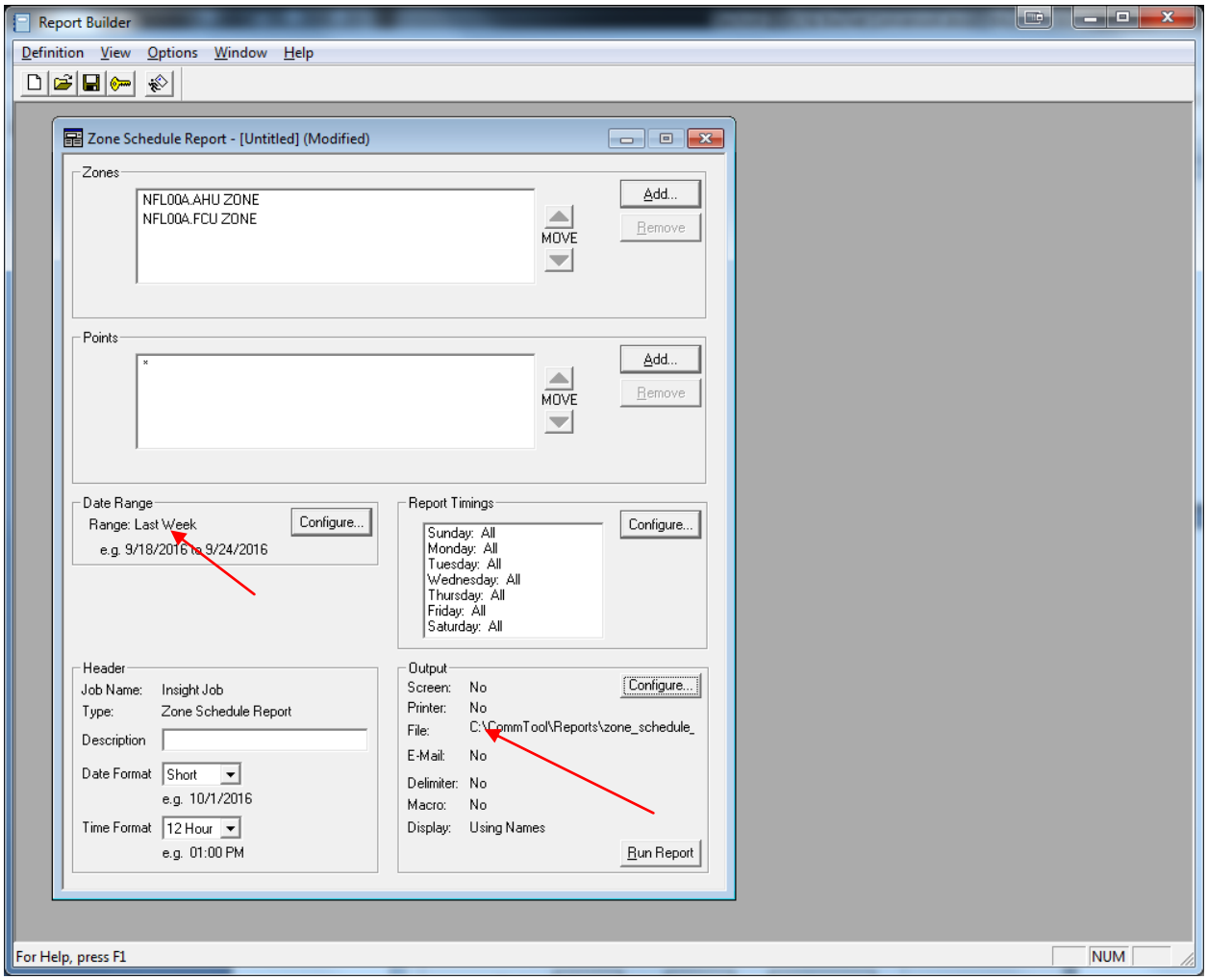

Figure 5: Zone Schedule Report

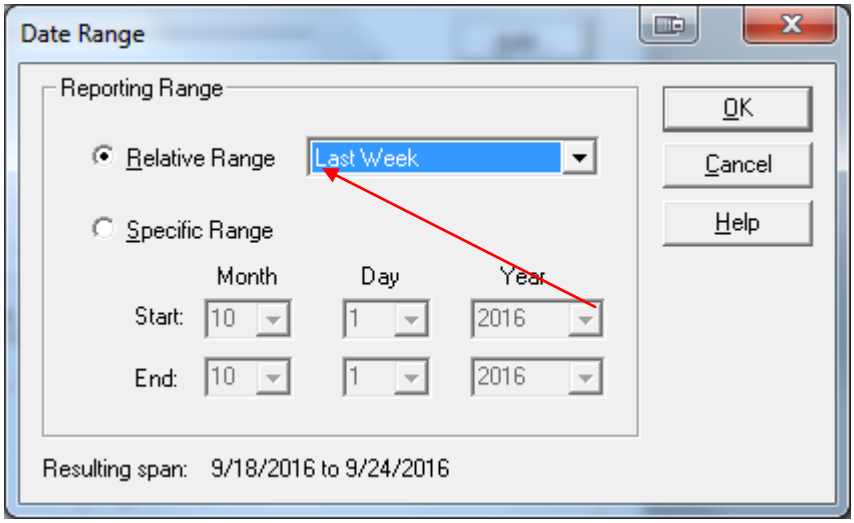

Figure 6: Set date range to last week

Once all reports have been prepared, proceed to step 3, Execution.

3. Execution

Open the find and replace tool, and the screen in Figure 7 should appear. Click “Set Log File Location” and select the folder where log files are to be saved.

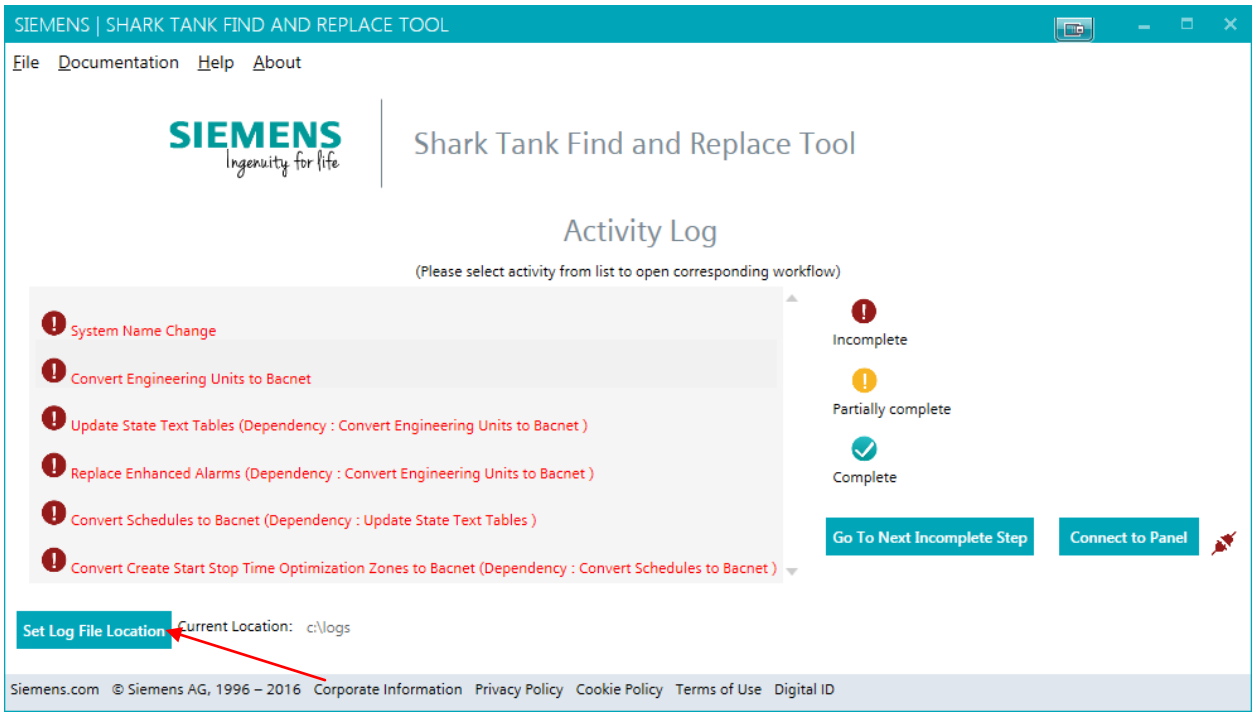

Figure 7: Find and Replace Tool Main Menu

A. Convert Engineering Units – shown in Video 02-01

Click on “Convert Engineering Units to Bacnet.” This will open the engineering unit conversion dialog box shown in Figure 8 below. In this screen, click “Set panel attributes document” and select the field panel export that was made during the preparation step. Once this is selected, click “Replace Engineering Units,” and the tool will convert engineering units to Bacnet-compatible units.

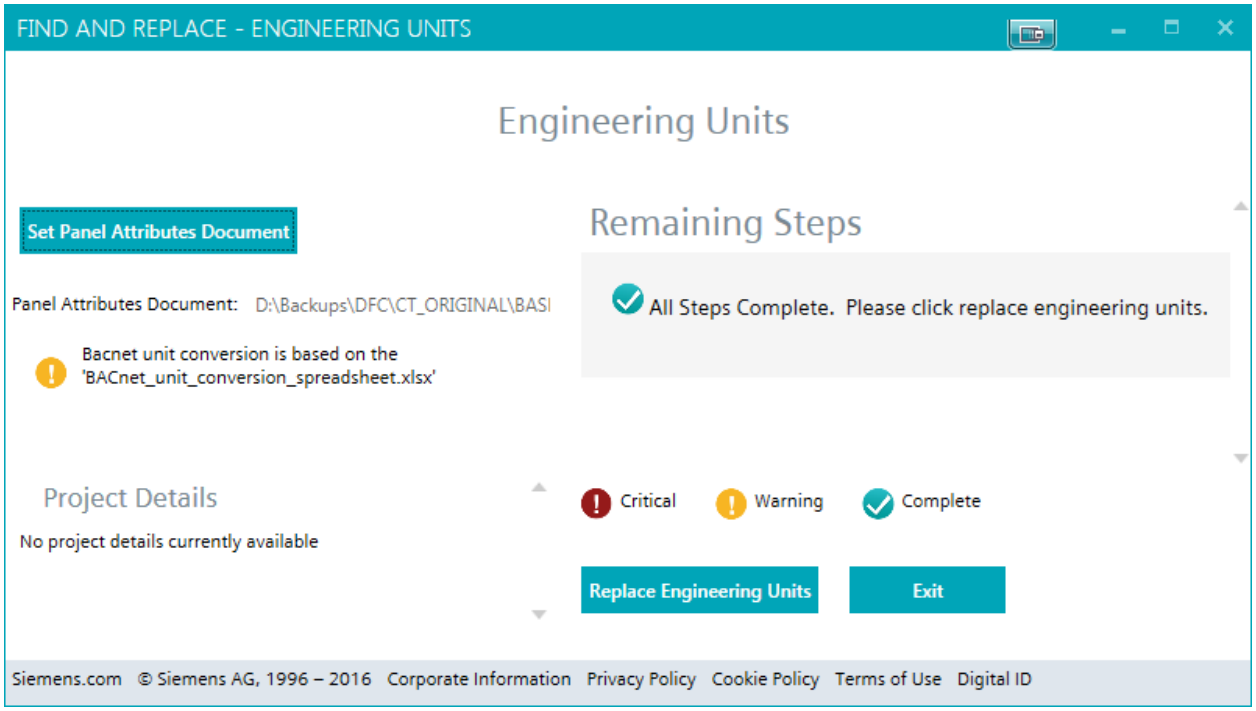

Figure 8: Convert Engineering Units dialog box

The tool will create a file with the same name as the field panel export, but with “new” appended to the end. Return to commissioning tool and import this new field panel document to the field panel being migrated. In the find and replace tool, click “Exit” and the software will return to the main menu.

B. Connect to Bacnet field panel – Shown in video 03-01

Before proceeding to the next step, connect to a Bacnet field panel of the same type as the panel being migrated. In commissioning tool, open MMI Database Transfer and restore the field panel database to the connected panel. Once the panel is restored, close the panel connection in commissioning tool. The find and replace tool will connect to the panel in the next step.

C. Update State Text Tables – Shown in video 03-01, video 03-02 shows a LENUM mode point in the original p2 panel, video 03-03 shows the new LENUM point in the new Bacnet database

From the main menu, click “Update State Text Tables,” and the state text dialog box will appear as shown in Figure 9. Click “Set state text document” and select the global data export prepared earlier.

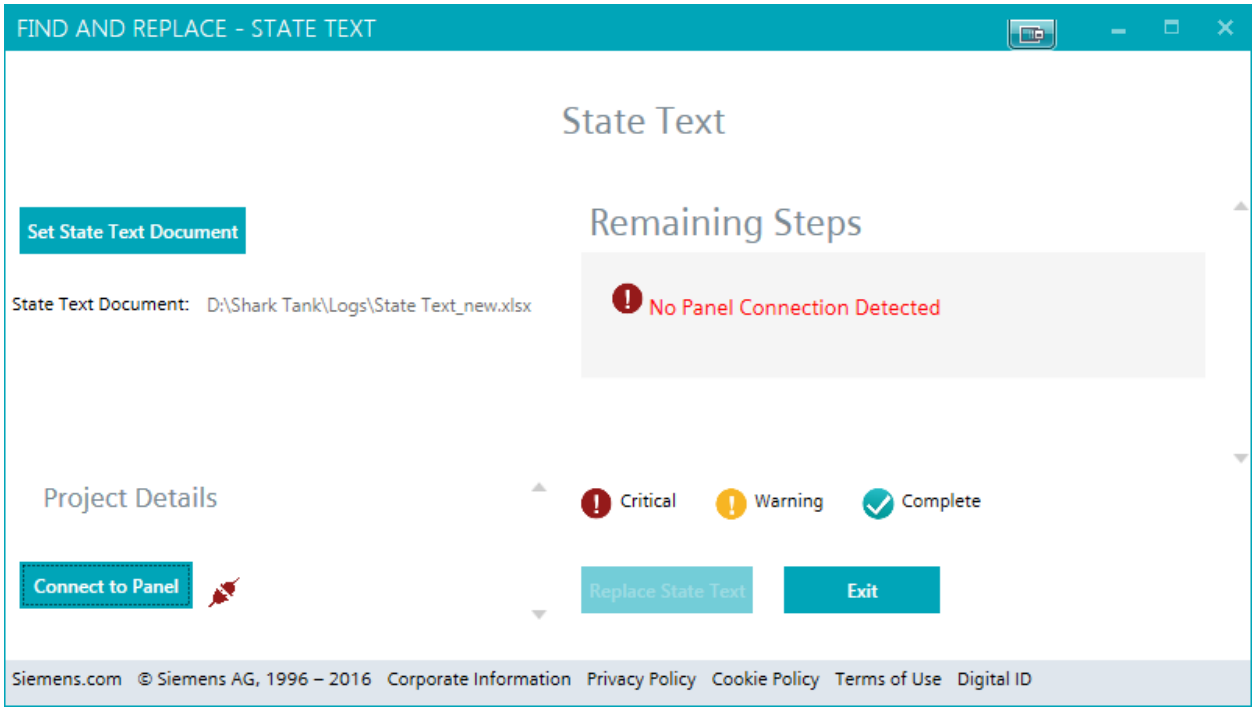

Figure 9: State Text dialog box

Once the global data has been selected, connect to the field panel with the restored CT database via HMI. Click “Connect to panel” and set the COM port, login, and password for the connected panel. This screen is shown in Figure 10.

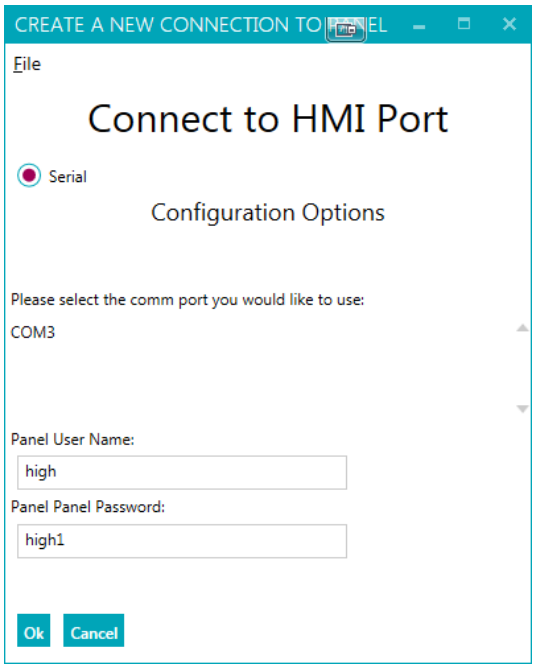

Figure 10: Panel connection dialog box

Once the connection to the panel is established, the software will return to the State Text dialog box. Click “Replace State Text” and the software will build a new Bacnet-compatible state text table in the connected panel. Click exit and the software will return to the main menu.

D. Replace Enhanced Alarms – Shown in video 04-01

From the main menu, click “Replace Enhanced Alarms,” and the enhanced alarm dialog box will appear, as shown in Figure 11. Click “Set Panel Attributes Document” and select the field panel export that was made during the preparation step. With the panel still connected from the previous step, click “Configure alarms.” The software will open an HMI session with the connected panel, and it will create a Bacnet command for each enhanced alarm.

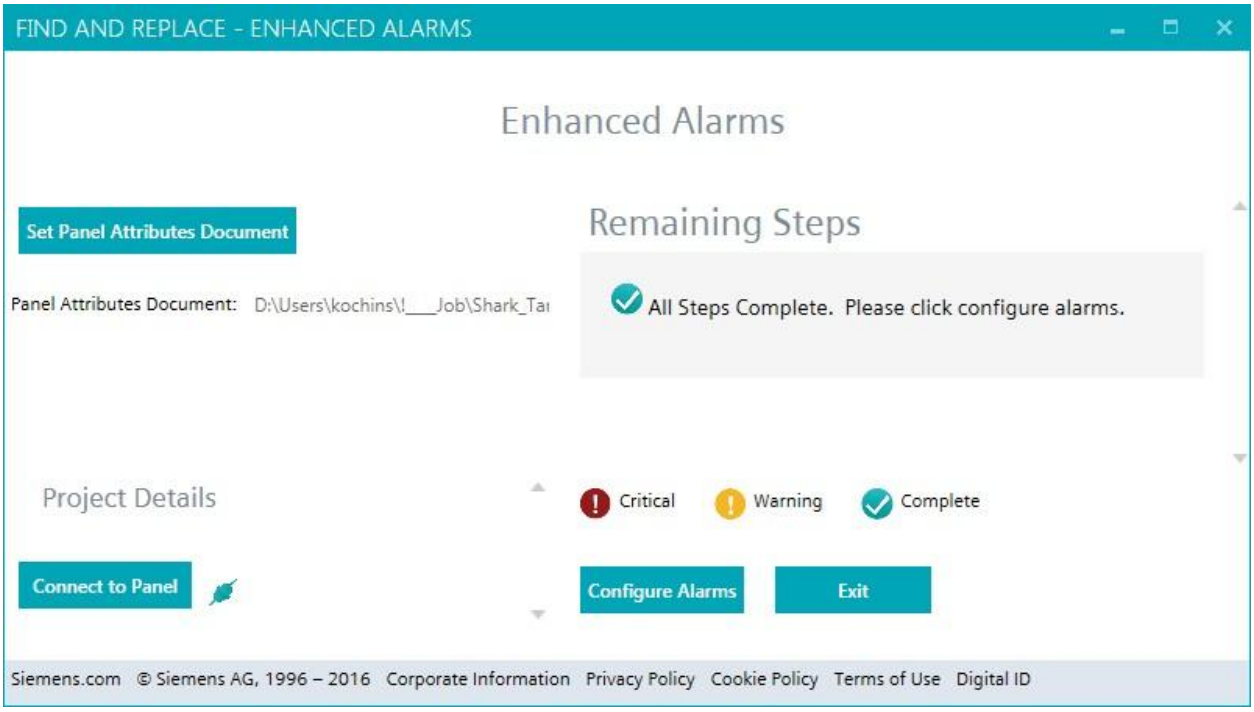

Figure 11: Enhanced Alarms dialog box

After the Bacnet commands are created, a dialog box will open with PPCL to be added to the panel. Copy the new PPCL lines into an appropriate spot in an existing PPCL program or as a new program. The user will decide which is appropriate. After this, exit this screen and return to the main menu.

E. Convert Schedules to Bacnet – Shown in video 05-01, video 05-02 shows the created Bacnet schedule commands in Commissioning Tool

From the main menu, click “Convert Schedules to Bacnet,” and the schedules dialog box will appear, as shown in Figure 12. Click “Set Scheduler Report” and select the zone schedule report that was made during the preparation step. With the panel still connected from the previous step, click “Configure Schedules.” The software will open an HMI session with the connected panel, and it will create a Bacnet command for each schedule.

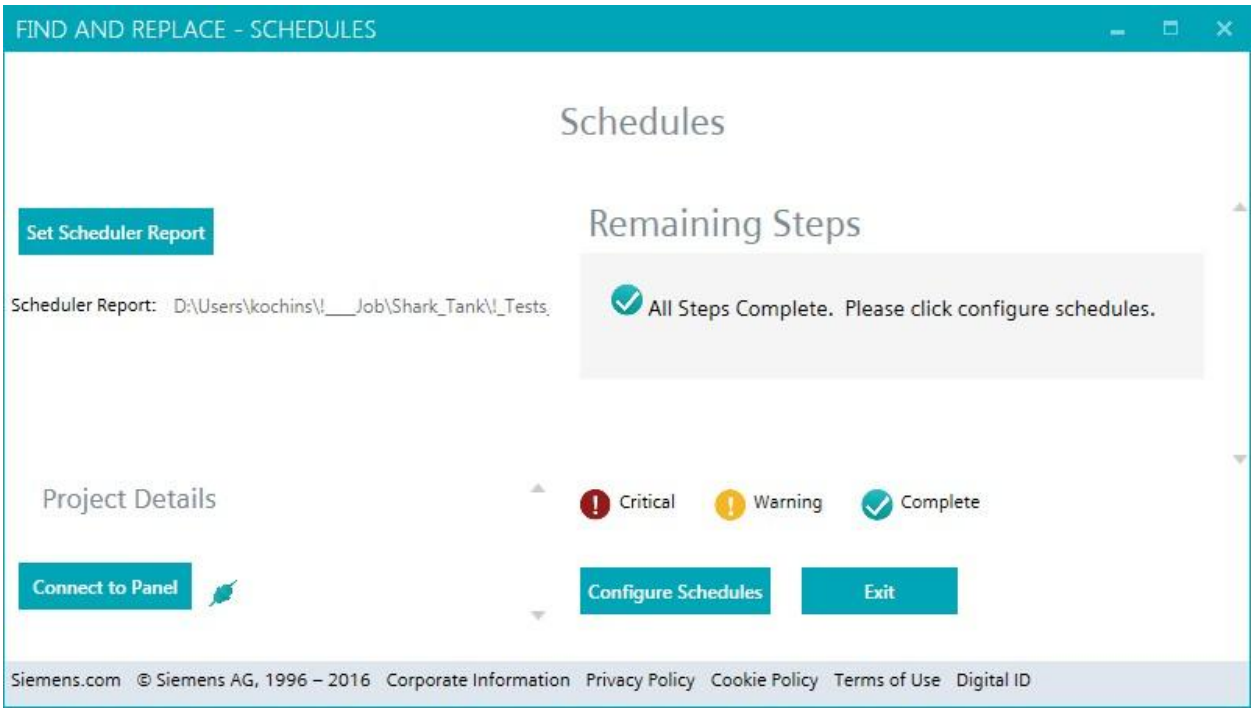

Figure 12: Schedules dialog box

Once the software completes the schedule configuration, click “Exit” and return to the main menu.

F. Configure Zones for SSTO – Shown in video 06-01 and 06-02

Return to commissioning tool and open MMI Database Transfer. Connect to the converted panel and backup the panel to the commissioning tool database.

This next process is shown in video 06-02. In commissioning tool, open Event Builder. Open the first zone in the converted panel that uses SSTO as shown in Figure 13 below. Due to limitations in panel firmware (as of version 3.4), the tool will not enable SSTO automatically. All parameters will be configured, but SSTO will not be enabled.

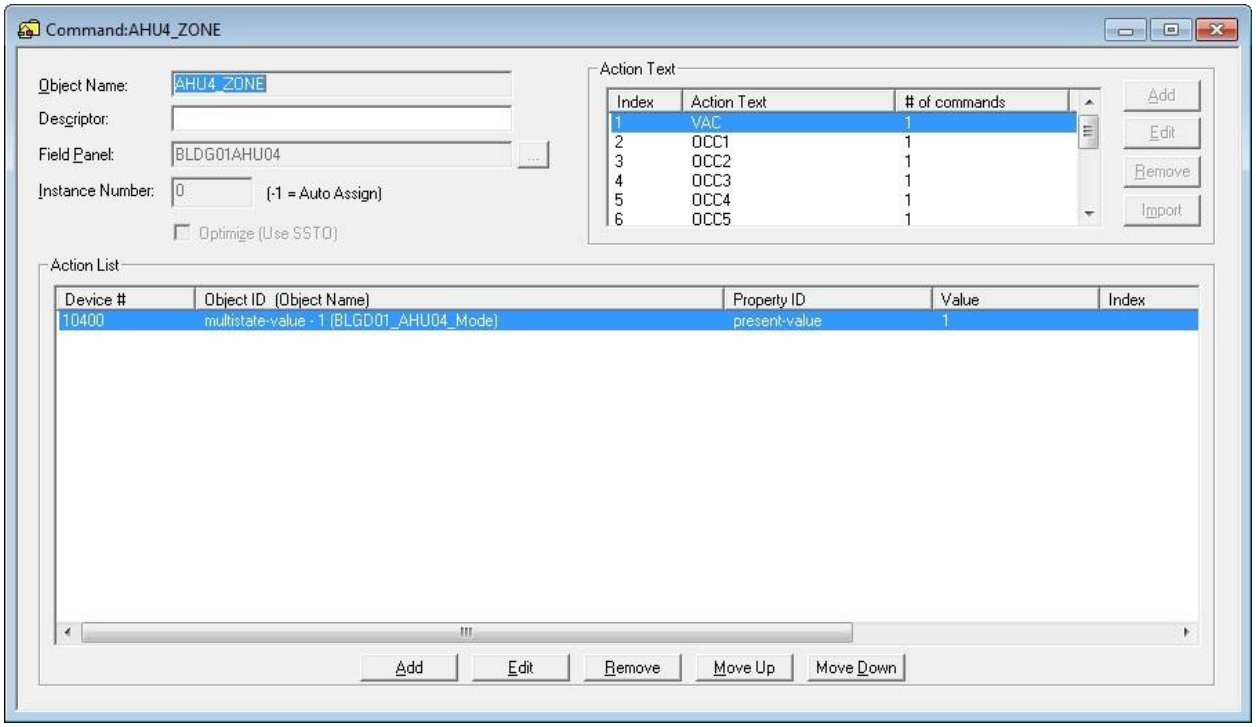

Figure 13: Zone from converted panel import

Copy the imported zone to a new zone of the same name and enable SSTO in this new zone, as shown in Figure 14 below. Once this is complete, delete the first imported zone. Repeat the copy, enable SSTO, and delete zone process for each zone in the converted panel that uses SSTO.

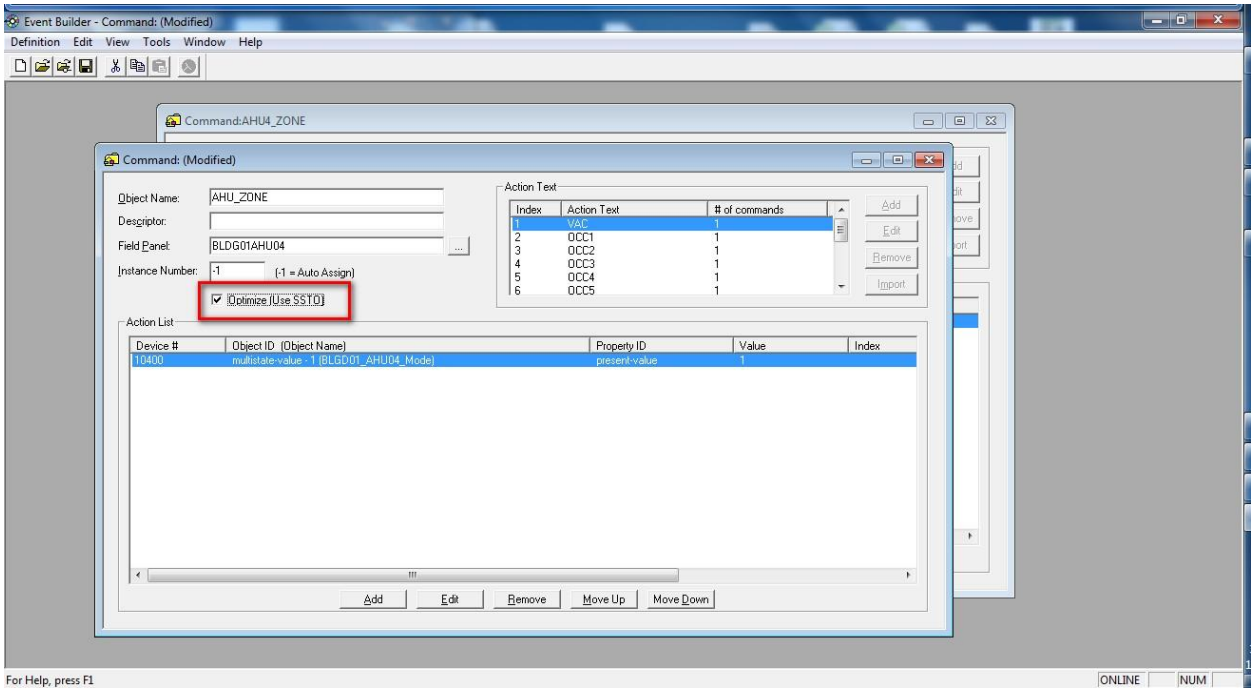

Figure 14: Copy zone and enable SSTO in new zone

Once the copied zones are created and the old zones are deleted, again restore the database to the connected field panel. Return to the find and replace tool.

From the main menu, click “Convert Start Stop Time Optimization Zones to Bacnet,” and the SSTO conversion dialog box will appear, as shown in Figure 15. Re-establish the connection to the panel by clicking “connect to panel.”

Now, click “Set Zone Definition Report” and select the zone definition report that was made during the preparation step. With the panel still connected from the previous step, click “Configure SSTO.” The software will open an HMI session with the connected panel, and it will configure SSTO for each zone that requires it.

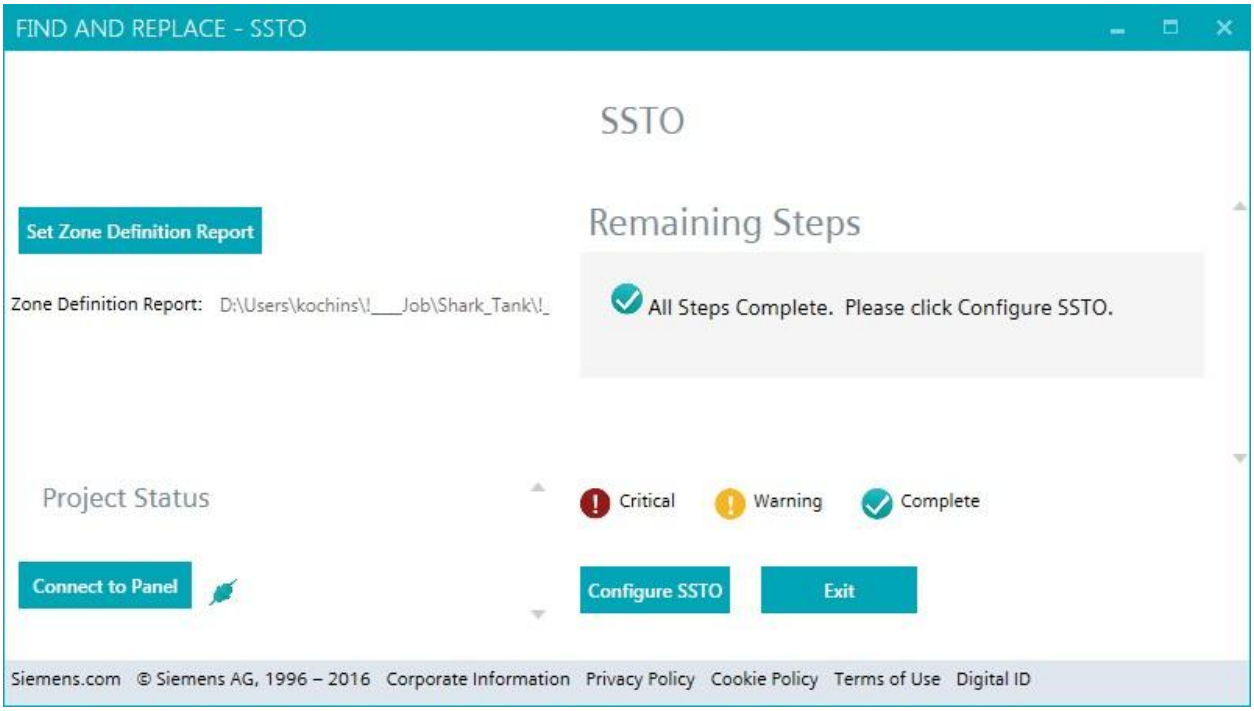

Figure 15: SSTO conversion dialog box

Once the software completes the SSTO conversion, click “Exit,” and close the find and replace tool. The conversion is now complete.

Return to commissioning tool and open MMI Database Transfer. Connect to the converted panel and backup the panel to the commissioning tool database.

Save the now-converted database. This converted database can then be distributed to the field team and restored to the field panel being migrated.